INDUSTRIAL SURFACTANTS

Second Edition

by

Ernest W. Flick

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To

Raymonde and Charles Amsellem

and

Alain Amsellem (1948 - 1983)

and

Patricia, Joël, Alexia and Audrey Horny

Preface

The Second edition of this useful book describes almost 2900 surfactants which are currently available for industrial use. The book will be of value to technical and managerial personnel involved in the specification and use of these products. It has been compiled directly from information received from 46 surfactant suppliers.

Industrial surfactants find uses in almost every industry, from asphalt manufacturing to carpet fibers, from pulp and paper production to leather processing. Examples of the types of chemicals used as surfactants are fatty alcohol sulfates, alkanolamides, alkoxylates, sulfosuccinates, amines, quaternaries, phosphate esters, acid esters, block copolymers, betaines, imidazolines, alkyl sulfonates, etc.

The market for these products has, and is expected to continue to have, a steady growth rate, of the order of 2% per year. Surfactants, besides their widely recognized use in soaps and detergents, find use in floor strippers, engine degreasers, corrosion inhibitors, hard surface cleaners, fabric softeners, paint dispersants, cutting fluids, anti–stats, viscosity builders, rinse aids, mold release agents, foam generators, foam stabilizers, etc.

The data included represent selections from manufacturers' descriptions made at no cost to, nor influence from, the makers or distributors of the material. Only the most recent information has been included. It is believed that all of the products listed here are currently available, which will be of utmost interest to readers concerned with product discontinuances.

Products are presented by company, and the companies are listed alphabetically. The table of contents is organized in such a way as to serve as a subject index

to the book. Also included is a Trade Name Index, for easy and rapid location of products by the reader. In addition, another section, which will be useful, contains the Suppliers' Addresses. It can be found immediately following the Product Information section.

The book lists the following product information, as available, in the manufacturer's own words:

(1) Company name and product category
(2) Trade name and product numbers
(3) Product Description: a brief description of the product, as presented by the supplier.

My fullest appreciation is expressed to the companies and organizations who supplied the data included in this book.

July 1993 Ernest W. Flick

Notice

To the best of our knowledge the information in this publication is accurate; however, the Publisher does not assume any responsibility for the accuracy or completeness of, or consequences arising from, such information. This Industrial Guide does not purport to contain detailed user instructions, and by its range and scope could not possibly do so. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the Publisher.

In some cases industrial surfactants may be toxic, and therefore, due caution should be exercised. Final determination of the suitability of any information or product for use contemplated by any user, and the manner of that use, is the sole responsibility of the user. We strongly recommend that users seek and adhere to a manufacturer's or supplier's current instructions for handling each material they use.

The Author and Publisher have used their best efforts to include only the most recent data available. The reader is cautioned to consult the supplier in case of questions regarding current availability.

Contents

AIR PRODUCTS AND CHEMICALS, INC.: SURFYNOL Surfactants:

SURFYNOL 104A Surfactant:
50 wt. % SURFYNOL 104 surfactant in 2-ethylhexanol

SURFYNOL 104E Surfactant:
50 wt. % SURFYNOL 104 surfactant in ethylene glycol

SURFYNOL 104H Surfactant:
75 wt. % SURFYNOL 104 surfactant in ethylene glycol

SURFYNOL 104BC Surfactant:
50 wt. % SURFYNOL 104 surfactant in 2-butoxy ethanol

SURFYNOL 104PA Surfactant:
50 wt. % SURFYNOL 104 surfactant in isopropyl alcohol

SURFYNOL PG-50 Surfactant:
50 wt. % SURFYNOL 104 surfactant in propylene glycol

SURFYNOL 104PG Surfactant:
85 wt. % SURFYNOL 104 surfactant in propylene glycol (semi-solid at room temperature)

SURFYNOL 104S Surfactant:
46 wt. % SURFYNOL 104 surfactant on amorphous silica

SURFYNOL 104 Surfactant:
A unique, nonionic surfactant which provides both wetting and defoaming in the same product. The hydrophobic nature of SURFYNOL 104 surfactant produces final products with reduced water sensitivity compared to either highly ethoxylated or anionic surfactants. Due to its multifunctional properties, SURFYNOL 104 surfactant provides performance benefits in many applications such as paints and coatings, adhesives, inks, dye processing, pigment manufacture and dispersion, cement, metalworking lubricants and agricultural chemicals. SURFYNOL 104 is a white, waxy solid in its 100% active form, and is also available in either liquid forms or as a free-flowing powder.

SURFYNOL 400 Surfactant Series:
A group of nonionic surfactants (SURFYNOL 420, 440, 465 and 485 surfactants) produced by adding various levels of ethylene oxide to SURFYNOL 104 surfactant. Increasing the ethylene oxide content increases the water solubility of this product. This series exhibits wetting performance in many applications including paints and coatings, inks, adhesives, emulsion polymerization, electroplating, agricultural chemicals, paper coatings and more.

AIR PRODUCTS AND CHEMICALS, INC.: SURFYNOL Surfactants (Continued):

SURFYNOL SE Surfactant:
A nonfoaming wetting agent that forms stable emulsions in water at concentrations of up to 75% by volume. In most cases, brief mixing is all that is required to achieve a fully emulsified state. Primary applications includes paints and coatings, adhesives, inks and metalworking fluids.

SURFYNOL TG Surfactant:
A low foaming, nonionic wetting agent for dispersion of hydrophobic organic pigments and substrate wetting in coatings, inks, cleaners, adhesives and latex dipping. SURFYNOL TG surfactant promotes improved pigment wetting, greater color development, improved color uniformity, low foam and stable viscosities. It also demonstrates excellent sheeting action in water-based rinses.

SURFYNOL GA Surfactant:
A unique blend of nonionic surfactants designed as a grinding aid for organic pigments of intermediate hydropilicity. SURFYNOL GA surfactant rapidly wets out the pigment and controls the mill-base foam and viscosity to produce very efficient grinds.

SURFYNOL CT-136 Surfactant:
A nonionic/anionic pigment grind aid used to reduce grind times and flocculation while improving color development and rheological properties. This product is designed as a universal grind aid for all HLB ranges and works well with hydrophilic inorganic pigments like iron oxide, titanium dioxide and carbon black.

SURFYNOL TG-E Surfactant:
A nonionic surfactant developed primarily for use in agricultural pesticides. This surfactant is an EPA compliant version of SURFYNOL TG surfactant. It is used as a low foaming agent in wettable powders and liquid concentrates and as a wetting agent for rapid dispersion of concentrates in water.

SURFYNOL 61 Surfactant:
A volatile, nonionic wetting agent which evaporates at room temperature. SURFYNOL 61 surfactant is used in coatings, inks, silicon and glass cleaners and fountain solutions where residual surface activity or contamination is undesirable. In systems where alcohols (e.g., isopropanol, methanol) are sued to provide low foaming wetting, SURFYNOL 61 surfactant replaces much or all of the alcohol, thereby reducing volatile organic compound emissions.

AIR PRODUCTS AND CHEMICALS, INC.: SURFYNOL Surfactants (Continued):

SURFYNOL 82, 82S Surfactants:
Nonionic, nonfoaming surfactants which provide excellent wetting in aqueous systems. In agricultural applications, these products promote stable dispersions and reduce static in wettable powders. The material has a rapid rate of dissolution which allows rewetting in certain applications such as agricultural chemicals. SURFYNOL 82 surfactant also reduces viscosity in vinyl plastisols and water-based formulations. SURFYNOL 82S surfactant is SURFYNOL 82 surfactant as a free-flowing powder.

SURFYNOL DF-110, DF-110D, DF-110L, DF-110S Defoamers:
Series of highly efficient, silicone-free defoamers and deair entrainment aids.

SURFYNOL DF-34 Defoamer:
A nonionic, water-free product which promotes good initial and long-term defoaming as well as surface wetting properties.

SURFYNOL DF-08 Surfactant:
A multifunctional wetting agent and defoamer used in water-borne coatings, inks, adhesives and latex dipping. It provides substrate wetting with the added benefit of foam control.

SURFYNOL DF-58 Defoamer:
A self-emulsifying, 100% active, organically modified silicone defoamer used in water-based applications.

SURFYNOL DF-75 Defoamer:
A silicone-free additive designed to provide knockdown and sustained defoaming in a wide variety of water-based applications.

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Primary Amines:

ARMEEN L8D:
2-Ethylhexylamine
TSCA Number: 104-75-6
Primary Amine, %: Min.: 98
Amine Number: Min.: 425
Gardner Color: Max.: 1
Moisture, %: Max.: 1.0

ARMEEN 12D:
Dodecylamine
TSCA Number: 124-22-1
Primary Amine, %: Min.: 98
Amine Number: Min.: 297
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

ARMEEN 16D:
Hexadecylamine
TSCA Number: 143-27-1
Primary Amine, %: Min.: 98
Amine Number: Min.: 228
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

ARMEEN 18D:
Octadecylamine
TSCA Number: 124-30-1
Primary Amine, %: Min.: 98
Amine Number: Min.: 204
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

ARMEEN OL:
Oleylamine
TSCA Number: 112-90-3
Primary Amine, %: Min.: 95
Amine Number: Min.: 202
Gardner Color: Max.: 4
Moisture, %: Max.: 0.5

ARMEEN OLD:
Oleylamine
TSCA Number: 112-90-3
Primary Amine, %: Min.: 98
Amine Number: Min.: 207
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Primary Amines (Continued):

ARMEEN C:
Cocoalkylamine
TSCA Number: 61788-46-3
Primary Amine, %: Min.: 97
Amine Number: Min.: 272
Gardner Color: Max.: 3
Moisture, %: Max.: 0.5

ARMEEN CD:
Cocoalkylamine
TSCA Number: 61788-46-3
Primary Amine, %: Min.: 98
Amine Number: Min.: 275
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

ARMEEN S:
Soyaalkylamine
TSCA Number: 61790-18-9
Primary Amine, %: Min.: 97
Amine Number: Min.: 206
Gardner Color: Max.: 4
Moisture, %: Max.: 0.5

ARMEEN SD:
Soyaalkylamine
TSCA Number: 61790-18-9
Primary Amine, %: Min.: 98
Amine Number: Min.: 208
Gardner Color: Max.: 2
Moisture, %: Max.: 0.5

ARMEEN T:
Tallowalkylamine
TSCA Number: 61790-33-8
Primary Amine, %: Min.: 97
Amine Number: Min.: 208
Gardner Color: Max.: 3
Moisture, %: Max.: 0.5

ARMEEN TD:
Tallowalkylamine
TSCA Number: 61790-33-8
Primary Amine, %: Min.: 98
Amine Number: Min.: 210
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Primary Amines (Continued):

ARMEEN HT:
Hydrogenated tallowalkylamine
TSCA Number: 61788-45-2
Primary Amine, %: Min.: 97
Amine Number: Min.: 207
Gardner Color: Max.: 3
Moisture, %: Max.: 0.5

ARMEEN HTD:
Hydrogenated tallowalkylamine
TSCA Number: 61788-45-2
Primary Amine, %: Min.: 98
Amine Number: Min.: 209
Gardner Color: Max.: 1
Moisture, %: Max.: 0.5

Secondary Amines:

ARMEEN 2C:
Dicocoalkylamine
TSCA Number: 61789-76-2
Apparent Secondary Amine, %: Min.: 93
Amine Number: Min.: 140
Gardner Color: Max.: 2

ARMEEN 2T:
Ditallowamine
TSCA Number: 68783-24-4
Apparent Secondary Amine, %: Min.: 93
Amine Number: Min.: 110
Gardner Color: Max.: 2

ARMEEN 2HT:
Dihydrogenated tallowalkylamine
TSCA Number: 61789-79-5
Apparent Secondary Amine, %: Min.: 93
Amine Number: Min.: 110
Gardner Color: Max.: 2

ARMEEN 2-10:
Didecylamine
TSCA Number: 1120-49-6
Apparent Secondary Amine, %: Min.: 93
Amine Number: Min.: 181
Gardner Color: Max.: 2

ARMEEN 2-18:
Dioctadecylamine
TSCA Number: 112-99-2
Apparent Secondary Amine, %: Min.: 93
Amine Number: Min.: 107
Gardner Color: Max.: 2

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Tertiary Amines: Monoalkyls:

ARMEEN DM12D:
Dodecyl-dimethylamine
TSCA Number: 112-18-5
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 250
Gardner Color: Max.: 1

ARMEEN DM16D:
Hexadecyl-dimethylamine
TSCA Number: 112-69-6
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 198
Gardner Color: Max.: 1

ARMEEN DM18D:
Octadecyl-dimethylamine
TSCA Number: 124-28-7
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 180
Gardner Color: Max.: 1

ARMEEN DMOD:
Oleyl-dimethylamine
TSCA Number: 28061-69-0
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 183
Gardner Color: Max.: 1

ARMEEN DMCD:
Cocoalkyl-dimethylamine
TSCA Number: 61788-93-0
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 234
Gardner Color: Max.: 1

ARMEEN DMSD:
Soyaalkyl-dimethylamine
TSCA Number: 61788-91-8
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 183
Gardner Color: Max.: 2

ARMEEN DMTD:
Tallowalkyl-dimethylamine
TSCA Number: 68814-69-7
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 184
Gardner Color: Max.: 1

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Tertiary Amines: Monoalkyls (Continued):

ARMEEN DMHTD:
Hydrogenated tallowalkyl-dimethylamine
TSCA Number: 61788-95-2
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 184
Gardner Color: Max.: 2

Dialkyl-methylamines:

ARMEEN M2C:
Dicocoalkyl-methylamine
TSCA Number: 61788-62-3
Tertiary Amine, %: Min.: 97
Amine Number: Min.: 137
Gardner Color: Max.: 2

ARMEEN M2HT:
Dihydrogenated tallowalkyl-methylamine
TSCA Number: 61788-63-4
Tertiary Amine, %: Min.: 97
Amine Number: Min.: 105
Gardner Color: Max.: 1

ARMEEN M2-10D:
Didecyl-methylamine
TSCA Number: 7396-58-9
Tertiary Amine, %: 97
Amine Number: Min.: 175
Gardner Color: Max.: 1

Trialkylamines:

ARMEEN 3-12:
Tridodecylamine
TSCA Number: 102-87-4
Tertiary Amine, %: Min.: 95
Amine Number: Min.: 102
Gardner Color: Max.: 1

ARMEEN 3-16:
Trihexadecylamine
TSCA Number: 67701-00-2
Tertiary Amine, %: Min.: 98
Amine Number: Min.: 82
Gardner Color: Max.: 3

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Polyamines: Diamines:

DUOMEEN C:
N-coco-1,3-diaminopropane
TSCA Number: 61791-63-7
Amine Number: Min.: 410
Gardner Color: Max.: 5
Moisture, %: Max.: 1.0

DUOMEEN CD:
N-coco-1,3-diaminopropane
TSCA Number: 61791-63-7
Amine Number: Min.: 410
Gardner Color: Max.: 3
Moisture, %: Max.: 1.0

DUOMEEN T:
N-tallow-1,3-diaminopropane
TSCA Number: 61791-55-7
Amine Number: Min.: 334
Gardner Color: Max.: 5
Iodine Value: Min.: 30
Moisture, %: Max.: 1.0

DUOMEEN TTM:
N,N,N'-trimethyl-N'-tallow-1,3-diaminopropane
TSCA Number: 68783-25-5
Amine Number: Min.: 271
Gardner Color: Max.: 8
Moisture, %: 1.0

DUOMEEN OL:
N-oleyl-1,3-diaminopropane
TSCA Number: 7173-62-8
Amine Number: Min.: 320
Gardner Color: Max.: 10
Iodine Value: Min.: 70
Moisture, %: Max.: 1.0

DUOMEEN OTM:
N,N,N'-trimethyl-N'-9-octa-decenyl-1,3-diaminopropane
TSCA Number: 68715-87-7
Amine Number: Min.: 271
Gardner Color: Max.: 8
Moisture, %: Max.: 1.0

DUOMEEN LT-4:
3-tallowalkyl-1,3-hexahydropyrimidine
TSCA Number: EPA Listed
Amine Number: Min.: 267
Gardner Color: Max.: 8
Moisture, %: Max.: 0.5

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Polyamines: Triamines:

TRIAMEEN T:
N-tallowalkyl dipropylene triamine
TSCA Number: 61791-57-9
Amine Number: Min.: 415
Gardner Color: Max.: 8
Moisture, %: Max.: 0.5

Ethoxylated Amines:

ETHOMEEN C/12:
Ethoxylated (2) cocoalkylamine
TSCA Number: 61791-31-9
Equivalent Weight: Min.: 280/Max.: 300
Gardner Color: Max.: 6
Primary plus Secondary Amine, %: 3

ETHOMEEN C/15:
Ethoxylated (5) cocoalkylamine
TSCA Number: 61791-14-8
Equivalent Weight: Min.: 410/Max.: 435
Gardner Color: Max.: 7
Primary plus Secondary Amine, %: 2

ETHOMEEN C/20:
Ethoxylated (10) cocoalkylamine
TSCA Number: 61791-14-8
Equivalent Weight: Min.: 620/Max.: 660
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 1

ETHOMEEN C/25:
Ethoxylated (15) cocoalkylamine
TSCA Number: 61791-14-8
Equivalent Weight: Min.: 830/Max.: 890
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 1

ETHOMEEN T/12:
Ethoxylated (2) tallowalkylamine
TSCA Number: 61791-44-4
Equivalent Weight: Min.: 340/Max.: 360
Gardner Color: Max.: 6
Primary plus Secondary Amine, %: 3

ETHOMEEN T/15:
Ethoxylated (5) tallowalkylamine
TSCA Number: 61791-26-2
Equivalent Weight: Min.: 470/Max.: 495
Gardner Color: Max.: 7
Primary plus Secondary Amine, %: 2

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amines: Ethoxylated Amines (Continued):

ETHOMEEN T/25:
Ethoxylated (15) tallowalkylamine
TSCA Number: 61791-26-2
Equivalent Weight: Min.: 890/Max.: 950
Gardner Color: Max.: 8
Primary plus Secondary Amine, %: 1

ETHOMEEN S/12:
Ethoxylated (2) soyaalkylamine
TSCA Number: 61791-24-0
Equivalent Weight: Min.: 342/Max.: 362
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 3

ETHOMEEN S/15:
Ethoxylated (5) soyaalkylamine
TSCA Number: 61791-24-0
Equivalent Weight: Min.: 470/Max.: 495
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 2

ETHOMEEN S/20:
Ethoxylated (10) soyaalkylamine
TSCA Number: 61791-24-0
Equivalent Weight: Min.: 685/Max.: 725
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 1

ETHOMEEN S/25:
Ethoxylated (15) soyaalkylamine
TSCA Number: 61791-24-0
Equivalent Weight: Min.: 895/Max.: 955
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 1

ETHOMEEN 18/12:
Ethoxylated (2) octadecylamine
TSCA Number: 10213-78-2
Equivalent Weight: Min.: 350/Max.: 370
Gardner Color: Max.: 7
Primary plus Secondary Amine, %: 3

ETHOMEEN 18/15:
Ethoxylated (5) octadecylamine
TSCA Number: 26635-92-7
Equivalent Weight: Min.: 480/Max.: 505
Gardner Color: Max.: 8
Primary plus Secondary Amine, %: 2

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amines: Ethoxylated Amines (Continued):

ETHOMEEN 18/20:
Ethoxylated (10) octadecylamine
TSCA Number: 26635-92-7
Equivalent Weight: Min.: 690/Max.: 730
Gardner Color: Max.: 8
Primary plus Secondary Amine, %: 1

ETHOMEEN 18/25:
Ethoxylated (15) octadecylamine
TSCA Number: 26635-92-7
Equivalent Weight: Min.: 900/Max.: 960
Gardner Color: Max.: 8
Primary plus Secondary Amine, %: 1

ETHOMEEN 18/60:
Ethoxylated (50) octadecylamine
TSCA Number: 26635-92-7
Equivalent Weight: Min.: 2370/Max.: 2570
Gardner Color: Max.: 10
Primary plus Secondary Amine, %: 0.5

Ethoxylated Diamines:
ETHODUOMEEEN T/13:
Ethoxylated (3) N-tallow-1,3-diaminopropane
TSCA Number: 61790-85-0
Equivalent Weight: Min.: 220/Max.: 250
Primary plus Secondary Amine, %: Max.: 2

ETHODUOMEEN T/20:
Ethoxylated (10) N-tallow-1,3-diaminopropane
TSCA Number: 61790-85-0
Equivalent Weight: Min.: 375/Max.: 405
Primary plus Secondary Amine, %: Max.: 2

ETHODUOMEEN T/25:
Ethoxylated (15) N-tallow-1,3-diaminopropane
TSCA Number: 61790-85-0
Equivalent Weight: Min.: 485/Max.: 515
Primary plus Secondary Amine, %: Max.: 2

Propoxylated Amines:
PROPOMEEN C/12:
N-cocoalkyl-1,1'-iminobis-2-propanol
TSCA Number: 68516-06-3
Equivalent Weight: Min.: 308/Max.: 318
Tertiary Amine, %: Min.: 95

PROPOMEEN T/12:
N-tallowalkyl-1,1'-iminobis-2-propanol
TSCA Number: 68951-72-4
Equivalent Weight: Min.: 373/Max.: 383
Tertiary Amine, %: Max.: 95

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amine Salts: Amine Acetates and Diamine Salts:

ARMAC HT:
Hydrogenated tallowalkyl amine acetates
TSCA Number: 61790-59-8
Neutralization: Min.: 95/Max.: 102
Gardner Color: Max.: 10
Amine Number: Min.: 165

ARMAC 18D-40:
Octadecylamine acetate and octadecyl amine
TSCA Number: 2190-04-7, 124-30-1
Neutralization: Min.: 38/Max.: 42
Gardner Color: Max.: 11
Amine Numnber: Min.: 190/Max.: 200

DUOMEEN TDO:
N-tallow-1,3-diaminopropane dioleates
TSCA Number: 61791-53-5
Neutralization: Min.: 98/Max.: 104
Gardner Color: Max.: 10
Amine Number: Min.: 120/Max.: 130

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts: Alkyltrimethyl:

Common Name: Alkyltrimethyl ammonium chlorides:

ARQUAD 12-37W:
Dodecyl-
TSCA Number: 112-00-5
Quaternary Salt %: Min.: 35/Max.: 39
Free Amine plus Amine Salt, %: Max.: 1
pH: 6.5-9
Gardner Color: Max.: 2

ARQUAD 12-50:
Dodecyl-
TSCA Number: 112-00-5
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 1

ARQUAD 16-29W:
Hexadecyl-
TSCA Number: 112-02-7
Quaternary Salt, %: Min.: 27/Max.: 30
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 3

ARQUAD 16-50:
Hexadecyl-
TSCA Number: 112-02-7
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 3

ARQUAD 18-50:
Octadecyl-
TSCA Number: 112-03-8
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 3

ARQUAD C-33W:
Cocoalkyl-
TSCA Number: 61789-18-2
Quaternary Salt, %: Min.: 32/Max.: 35
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 4

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts: Alkyltrimethyl (Continued):

ARQUAD C-50:
Cocoalkyl-
TSCA Number: 61789-18-2
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 4

ARQUAD S-50:
Soyaalkyl-
TSCA Number: 61790-41-8
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 5

ARQUAD T-27W:
Tallowalkyl-
TSCA Number: 8030-78-2
Quaternary Salt, %: Min.: 26/Max.: 29
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 3

ARQUAD T-50:
Tallowalkyl-
TSCA Number: 8030-78-2
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 4

Dialkyldimethyl:

Common Name: Dialkyldimethylammonium chlorides (in aqueous isopropanol)

ARQUAD 210-50:
Didecyl-
TSCA Number: 173-51-5
Quaternary Salt, %: Min.: 50/Max.: 53
Free Amine plus Amine Salt, %: Max.: 1.5
pH: 7-9
Gardner Color: Max.: 180 APHA

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts: Dialkyldimethyl (Continued):

Common Name: Dialkyldimethylammonium chlorides (in aqueous isopropanol):

ARQUAD 218-75:
Dioctadecyl-
TSCA Number: 107-64-2 (chloride)
Quaternary Salt, %: Min.: 74/Max.: 77
Free Amine plus Amine Salt, %: Max.: 1.5
pH: 6-9
Gardner Color: Max.: 3

ARQUAD 218-100:
Dioctadecyl-
TSCA Number: 107-64-2
Consult your AKZO representative

ARQUAD 2C-75:
Dicocoalkyl-
TSCA Number: 61789-77-3
Quaternary Salt, %: Min.: 74/Max.: 77
Free Amine plus Amine Salt, %: Max.: 1.5
pH: 6-9
Gardner Color: Max.: 4

ARQUAD 2HT-75:
Dihydrogenatedtallowalkyl-
TSCA Number: 61789-80-8
Quaternary Salt, %: Min.: 74/Max.: 77
Free Amine plus Amine Salt, %: Max.: 1.5
pH: 6-9
Gardner Color: Max.: 2

ARQUAD 2T-75:
Ditallowalkyl-
TSCA Number: 68783-78-8
Quaternary Salt, %: Min.: 74/Max.: 77
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 5

ARQUAD 2C-70 Nitrite:
Dicoco-
TSCA Number: 71487-01-9
Quaternary Salt, %: Min.: 68/Max.: 72
pH: 6-8.5
Gardner Color: Max.: 14

ARQUAD HTL8(W)MS-85:
2-Ethylhexylhydrogenated tallowalkyl-
TSCA Number: EPA listed
Quaternary Salt, %: Min.: 81.5/Max.: 84.5
pH: 4.5-6
Gardner Color: Max.: 5

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts: Trialkylmethyl:

ARQUAD 316(W):
Trihexadecylmethyl ammonium chloride [in water (W)]
CAS Number: 71060-72-5
Quaternary Salt, %: Min.: 86/Max.: 90
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-8
Gardner Color: Max.: 4

Benzylalkyl:

Common Name: Ammonium chlorides:

ARQUAD B-100:
Benzyldimethyl-(C12-C18) alkyl-
TSCA Number: 68391-01-5
Quaternary Salt, %: Min.: 49/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 2

ARQUAD DMCB-80:
Benzyldimethyl-cocoalkyl-
TSCA Number: 61789-71-7
Quaternary Salt, %: Min.: 79/Max.: 82
Free Amine plus Amine Salt, %: Max.: 1.5
pH: 6-8
Gardner Color: Max.: 4

ARQUAD DMHTB-75:
Benzyldimethyl (hydrogenated tallow) alkyl-
TSCA Number: 61789-72-8
Quaternary Salt, %: Min.: 75/Max.: 80
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 4

ARQUAD M2HTB-80:
Benzylmethyl di(hydrogenated tallow) alkyl-
TSCA Number: 61789-73-9
Quaternary Salt, %: Min.: 78/Max.: 82
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 3

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts: Ethoxylated Quaternary Salts: Monoalkyl Ethoxylates:

Monoalkyl-methyl-[ethoxylated (n)]-ammonium chlorides [nitrates]:

ETHOQUAD 18/12:
Octadecyl-methyl-[ethoxylated(2)]-
TSCA Number: 3010-24-0
Quaternary Salt, %: Min.: 70
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 7

ETHOQUAD 18/25:
Octadecyl-methyl-[ethoxylated (15)]-
TSCA Number: 28724-32-5
Quaternary Salt, %: Min.: 95
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 11

ETHOQUAD C/12:
Cocomethyl [ethoxylated (2)]-
TSCA Number: 70750-47-9
Quaternary Salt, %: Min.: 74
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 5

ETHOQUAD C/25:
Cocomethyl [ethoxylated (15)]-
TSCA Number: 61791-10-4
Quaternary Salt, %: Min.: 95
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 11

ETHOQUAD O/12:
Oleylmethyl [ethoxylated(2)]-
TSCA Number: 18448-65-2
Quaternary Salt, %: Min.: 72
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 9

ETHOQUAD O/25:
Oleylmethyl [ethoxylated (15)]-
TSCA Number: 28880-55-9
Quaternary Salt, %: Min.: 95
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 11

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts (Continued): Ethoxylated Quaternary Salts (Continued): Monoalkyl Ethoxylates (Continued):

Common Name: Monoalkyl-methyl-[ethoxylated (n)]-ammonium chlorides [nitrates]:

ETHOQUAD C/12 Nitrate:
Cocomethyl-[ethoxylated (2)]-ammonium nitrate
TSCA Number: 71487-00-8
Quaternary Salt, %: Min.: 59
pH: 6-7.8
Gardner Color: Max.: 8

ETHOQUAD C/12B:
Cocobenzyl-[ethoxylated (2)]-ammonium chloride
TSCA Number: 61789-68-2
Quaternary Salt, %: Min: 73
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 12

ETHOQUAD T/12:
Tallowalkylmethyl [ethoxylated (2)]-CI
TSCA Number: 67784-77-4
Quaternary Salt, %: Min.: 74
Free Amine plus Amine Salt, %: Max.: 2
pH: 7-9
Gardner Color: Max.: 7

Other Ethoxylated Quaternary Ammonium Salts:

ETHOQUAD T/13 Acetate:
Tris [2-hydroxyethyl] tallowalkyl ammonium acetate
CAS Number: 91080-64-7
Quaternary Salt, %: Min.: 48 (solids)
Free Amine plus Amine Salt, %: Max.: 4
pH: 6-9
Gardner Color: Max.: 8

ETHODUOQUAD T/15 Diacetate:
N,N,N',N',N'-penta(2-hydroxyethyl)-N-tallowalkyl-1,3-propane diammonium diacetate
CAS Number: EPA listed
Quaternary Salt, %: Min.: 48 (solids)
Free Amine plus Amine Salt, %: Max.: 4
pH: 6-9
Gardner Color: Max.: 16

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Quaternary Ammonium Salts(Cont.): Alkyl Diammonium Pentamethyl Chlorides:

DUOQUAD T-50:
N,N,N',N',N'-pentamethyl-N-tallow-1,3-diammonium dichlorides
TSCA Number: 68607-29-4
Quaternary Salt, %: Min.: 48/Max.: 52 (solids)
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 6

DUOQUAD O-50:
N,N,N',N',N'-pentamethyl-N-octadecenyl-1,3-diammonium dichloride
TSCA Number: 68310-73-6
Quaternary Salt, %: Min.: 48/Max.: 52
Free Amine plus Amine Salt, %: Max.: 2
pH: 6-9
Gardner Color: Max.: 6

Propoxylated Quaternary Salts:

PROPOQUAD 2HT/11:
Di(hydrogenated tallowalkyl) (2-hydroxy-2-methylethyl) quaternary ammonium chlorides
TSCA Number: TSCA listed
Quaternary Salt, %: Min.: 82/Max.: 85
Free Amine plus Amine Salt, %: Max.: 5
pH: 5.5-7.5
Gardner Color: Max.: 8

PROPOQUAD T/12:
Tallowalkylmethyl-bis-(2-hydroxy-2-methylethyl) quaternary ammonium methylsulfates
TSCA Number: 79770-97-1
Quaternary Salt, %: Min.: 70/Max.: 76
Free Amine plus Amine Salt, %: Max.: 4
pH: 4.5-6.5
Gardner Color: Max.: 6

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amine Oxides:

AROMOX C/12:
Bis(2-hydroxyethyl)-cocoalkylamine oxides
TSCA Number: 61791-47-7
Amine Oxide, %: Min.: 49
Amine, %: Max.: 2.5

AROMOX C/12-W:
Bis(2-hydroxyethyl)-cocoalkylamine oxides
TSCA Number: 61791-47-7
Amine Oxide, %: Min.: 39
Amine, %: Max.: 2.5

AROMOX T/12:
Bis(2-hydroxyethyl)-tallowalkylamine oxides
TSCA Number: 61791-46-6
Amine Oxide, %: Min.: 49
Amine, %: Max.: 2.5

AROMOX DMC:
Dimethylcocoalkylamine oxides
TSCA Number: 61788-90-7
Amine Oxide, %: Min.: 39
Amine, %: Max.: 1.5

AROMOX DMC-W:
Dimethylcocoalkylamine oxides
TSCA Number: 61788-90-7
Amine Oxide, %: Min.: 29
Amine, %: Max.: 1.5

AROMOX DMHT:
Dimethylhydrogenated tallowalkylamine oxides
TSCA Number: 68390-99-8
Amine Oxide, %: Min.: 39
Amine, %: Max.: 1.5

AROMOX DM16:
Dimethylhexadecyl-amine oxide
TSCA Number: 7128-91-8
Amine Oxide, %: Min.: 39
Amine, %: Max.: 1.5

AROMOX DM16-W:
Dimethylhexadecyl-amine oxide
TSCA Number: 7128-91-8
Amine Oxide, %: Min.: 29
Amine, %: Max.: 1.5

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amides:

ARMID C:
Cocoamides
TSCA Number: 61789-19-3
Amide, %: Min.: 90
Free Fatty Acid, %: Max.: 4
Gardner Color: Max.: 8

ARMID HT:
Hydrogenated tallowamides
TSCA Number: 61790-31-6
Amide, %: Min.: 90
Free Fatty Acid, %: Max.: 5
Gardner Color: Max.: 7

ARMID O:
Oleamide
TSCA Number: 301-02-0
Amide, %: Min.: 90
Free Fatty Acid, %: Max.: 5
Gardner Color: Max.: 7

ARMID OPA:
Oleylpalmitamide
TSCA Number: 16260-09-6
Amide, %: Min.: 95
Free Fatty Acid, %: Max.: 3
Gardner Color: Max.: 3

ARMID 18:
Octadecanamide
TSCA Number: 124-26-5
Amide, %: 90
Free Fatty Acid, %: Max.: 5
Gardner Color: Max.: 7

ARMID E:
Erucamide
TSCA Number: 112-84-5
Amide, %: 90
Free Fatty Acid, %: Max.: 5
Gardner Color: Max.: 7

AKZO CHEMICALS INC.: Industrial Surfactants: Nitrogen Derivatives: Amides (Cont.): Ethoxylated Amides:

ETHOMID O/17:
Ethoxylated (7) oleamide
TSCA Number: 26027-37-2
Gardner Color: Max.: 8
Free Amide, %: Max.: 15
ETHOMID HT/23:
Ethoxylated (13) hydrogenated tallowamide
TSCA Number: 68155-24-8
Gardner Color: Max.: 9
Free Amide, %: Max.: 13
ETHOMID HT/60:
Ethoxylated (50) hydrogenated tallowamide
TSCA Number: 68155-24-8
Gardner Color: Max.: 11
Free Amide, %: Max.: 2

Esters: Nonionic Surfactants: Ethoxylated Fatty Acids:
ETHOFAT O/20:
Ethoxylated (10) oleic acid
TSCA Number: 9004-96-0
Saponification Value: Min.: 75/Max.: 85
Acid Value: Max.: 1
Gardner Color: Max.: 8
ETHOFAT 18/14:
Ethoxylated (4) stearic acid
TSCA Number: 9004-99-2
Saponification Value: Min.: 121/Max.: 131
Acid Value: Max.: 3
Gardner Color: Max.: 4
ETHOFAT 242/25:
Ethoxylated (15) tall oil acid
TSCA Number: 65071-95-6
Saponification Value: Min.: 55/Max.: 65
Acid Value: Max.: 1
Gardner Color: Max.: 12
ETHOFAT 433:
Ethoxylated (15) tall oil acid
TSCA Number: 65071-95-6
Saponification Value: Min.: 46/Max.: 54
Acid Value: Max.: 1.2
Gardner Color: Max.: 12

Amphoteric Compounds:
ARMEEN Z:
EPA Listed
Solids, %: Min.: 51/Max.: 55
Gardner Color: Max.: 8
pH (10% in H2O): 6.5-7.5
Pour Point, C: Max.: 18
Primary Amine: Max.: 5

AKZO CHEMICALS INC.: INTERSTAB CHEMICALS: Wetting Agents:

INTERWET 33:
Glycol ester of a fatty acid
Non-ionic ester type surfactant
Color (Gardner) Max.: 8
Specific Gravity: 1.01-1.04
Viscosity (G/H-Max.): C
Pounds/Gallon: 8.40-8.65
Liquid
HLB Value 11.5

INTERWET 43:
Glycol Esters of Fatty Acids
Color (Gardner) Max.: 5
Specific Gravity: 1.00-1.02
Viscosity (G/H-Max.): C
Pounds/Gallon: 8.33-8.50
Liquid
HLB Value 10.9

INTERWET 212:
Glycol ester of a fatty acid
Non-ionic ester type surfactant
Color (Gardner) Max.: 4
Specific Gravity: 0.98-0.995
Viscosity (G/H-Max): A
Pounds/Gallon: 8.16-8.29
Liquid

ALBRIGHT & WILSON AMERICAS: Surfactants:

DEHSCOFIX:
Aromatic Sulphonic Acid, Salts and Condensates

DEHSCOFIX 904:
Appearance: liquid
Substituted phenol ethoxylate phosphate ester, triethanolamine salt
Concentration %: 96

DEHSCOFIX 905:
Appearance: liquid
Substituted phenol ethoxylate phosphate ester, triethanolamine salt
Concentration %: 96

DEHSCOFIX 906:
Appearance: soft paste
Substituted phenol ethoxylate
Concentration %: 98

DEHSCOFIX 907:
Appearance: liquid
Substituted phenol ethoxylate phosphate ester, acid form
Concentration %: 96

DEHSCOFIX 908:
Appearance: soft paste
Substituted phenol ethoxylate
Concentration %: 98

DEHSCOFIX 909:
Appearance: paste
Substituted phenol ethoxylate
Concentration %: 98

DEHSCOFIX 911:
Appearance: paste
Naphthalene sulphonic acid, formaldehyde condensate
Concentration %: 40

DEHSCOFIX 912:
Appearance: liquid
Sodium naphthalene sulphonate, formaldehyde condensate
Concentration %: 40

DEHSCOFIX 914:
Appearance: liquid
Sodium naphthalene sulphonate, formaldehyde condensate
Concentration %: 45

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

DEHSCOFIX (Continued):
Aromatic Sulphonic Acid, Salts and Condensates (Continued):

DEHSCOFIX 914/AS:
Appearance: liquid
Sodium naphthalene sulphonate, formaldehyde condensate
Concentration %: 40

DEHSCOFIX 914/ASL:
Appearance: liquid
Sodium naphthalene sulphonate, formaldehyde condensate
Concentration %: 40

DEHSCOFIX 915:
Appearance: powder
Sodium naphthalene sulphonate, formaldehyde condensate
Concentration %: 92

DEHSCOFIX 915/AS:
Appearance: powder
Sodium napthalene sulphonate, formaldehyde condensate
Concentration %: 92

DEHSCOFIX 916:
Appearance: powder
Sodium di isopropyl naphthalene sulphonate
Concentration %: 92

DEHSCOFIX 916S:
Appearance: powder
Sodium di isopropyl naphthalene sulphonate
Concentration %: 92

DEHSCOFIX 917:
Appearance: powder
Sodium di n butyl naphthalene sulphonate
Concentration %: 92

DEHSCOFIX 918:
Appearance: liquid
Naphthalene sulphonic acid
Concentration %: 45

DEHSCOFIX 920:
Appearance: powder
Sodium naphthalene sulphonate formaldehyde condensate
Concentration %: 92

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

DEHSCOFIX (Continued):
Aromatic Sulphonic Acid, Salts and Condensates (Continued):

DEHSCOFIX 923:
Appearance: powder
Sodium dimethyl naphthalene sulphonate, formaldehyde condensate
Concentration %: 92

DEHSCOFIX 926:
Appearance: powder
Sodium dimethyl naphthalene sulphonate, formaldehyde condensate
Concentration %: 92

DEHSCOFIX 929:
Appearance: liquid
Ammonium naphthalene sulphonate, formaldehyde condensate
Concentration %: 40

DEHSCOFIX 930:
Appearance: powder
Ammonium naphthalene sulphonate, formaldehyde condensate
Concentration %: 92

DEHSCOTEX:
Formulated Auxiliaries for Textile and Leather:

DEHSCOXID:

DEHSCOXID 730/740 Series:
Appearance: liquid/paste
Alcohol ethoxylates (C13)
Concentration %: Various

ELTESOL:
Aromatic Sulphonic Acid Blends, Salts and Concentrates:

ELTESOL AC60:
Appearance: liquid
Ammonium cumene sulphonate
Concentration %: 60

ELTESOL AX40:
Appearance: liquid
Ammonium xylene sulphonate
Concentration %: 40

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

ELTESOL (Continued):
Aromatic Sulphonic Acid Blends, Salts and Concentrates (Continued):

ELTESOL CA65:
Appearance: liquid
Cumene sulphonic acid
Concentration %: 65

ELTESOL PSA65:
Appearance: liquid
Phenol sulphonic acid
Concentration %: 65

ELTESOL PX40:
Appearance: liquid
Potassium xylene sulphonate
Concentration %: 40

ELTESOL PX93:
Appearance: powder
Potassium xylene sulphonate
Concentration %: 93

ELTESOL SC40:
Appearance: liquid
Sodium cumene sulphonate
Concentration %: 40

ELTESOL SC93:
Appearance: powder
Sodium cumene sulphonate
Concentration %: 93

ELTESOL SC Pellets:
Appearance: pellet
Sodium cumene sulphonate
Concentration %: 88

ELTESOL ST40:
Appearance: liquid
Sodium toluene sulphonate
Concentration %: 40

ELTESOL ST90:
Appearance: powder
Sodium toluene sulphonate
Concentration %: 90

ELTESOL ST Pellets:
Appearance: pellet
Sodium toluene sulphonate
Concentration %: 85

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

ELTESOL (Continued):
Aromatic Sulphonic Acid Blends, Salts and Concentrates (Continued):

ELTESOL SX30:
Appearance: liquid
Sodium xylene sulphonate
Concentration %: 30

ELTESOL SX40:
Appearance: liquid
Sodium xylene sulphonate
Concentration %: 40

ELTESOL SX93:
Appearance: powder
Sodium xylene sulphonate
Concentration %: 93

ELTESOL SX Pellets:
Appearance: pellet
Sodium xylene sulphonate
Concentration %: 88

ELTESOL TA65:
Appearance: liquid
Toluene sulphonic acid
Concentration %: 65

ELTESOL TA Series:
Appearance: liquids
Toluene sulphonic acids
Concentration %: Various

ELTESOL TSX Series:
Appearance: crystals
Toluene sulphonic acids
Concentration %: 99

ELTESOL XA65:
Appearance: liquid
Xylene sulphonic acid
Concentration %: 65

ELTESOL XA Series:
Appearance: liquids
Xylene sulphonic acids
Concentration %: Various

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

ELTESOL (Continued):
Aromatic Sulphonic Acid Blends, Salts and Concentrates (Continued):

ELTESOL 4402:
Appearance: liquid
Benzene sulphonic acid blend
Concentration %: 88

ELTESOL 4443M:
Appearance: liquid
Benzene sulphonic acid blend
Concentration %: 72

ELTESOL 5400 Series:
Appearance: liquids/powders
Phenol sulphonic acid condensates
Concentration %: Various

ELTESOL 7200 Series:
Appearance: liquids/powders
Dihydroxy diphenyl sulphonates
Concentration %: Various

Formulated Product:

ELTESOL TPA:
Appearance: powder
Tin-plating additive
Concentration %: 80

EMPICOL:
Fatty Alcohol Ethoxy Sulphates (Toiletry Grades):

EMPICOL BSD:
Appearance: liquid
Sodium/magnesium lauryl ethoxy sulphate
Concentration %: 26

EMPICOL BSD52:
Appearance: liquid
Sodium magnesium lauryl ethoxy sulphate
Concentration %: 52

EMPICOL EAA:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 24

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPICOL (Continued):
Fatty Alcohol Ethoxy Sulphates (Toiletry Grades) (Continued):

EMPICOL EAA70:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 70

EMPICOL EAB:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 24

EMPICOL EAB70:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 70

EMPICOL EAC:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 25

EMPICOL EAC70:
Appearance: liquid
Ammonium lauryl ethoxy sulphate
Concentration %: 70

EMPICOL EGB:
Appearance: liquid
Magnesium lauryl ethoxy sulphate
Concentration %: 25

EMPICOL EGC:
Appearance: liquid
Magnesium lauryl ethoxy sulphate
Concentration %: 27

EMPICOL EMB:
Appearance: liquid
Monoethanolamine lauryl ethoxy sulphate
Concentration %: 28

EMPICOL ESA:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 25

EMPICOL ESA70:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 70

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPICOL (Continued):
Fatty Alcohol Ethoxy Sulfates (Toiletry Grades) (Continued):

EMPICOL ESB3/D:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 27

EMPICOL ESB3/M:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 27

EMPICOL ESB70:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 70

EMPICOL ESC3:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 28

EMPICOL ESC70:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 70

EMPICOL ETB:
Appearance: liquid
Triethanolamine lauryl ethoxy sulphate
Concentration %: 29

Fatty Alcohol Sulphates (Toiletry Grades):

EMPICOL AL30/T:
Appearance: liquid/paste
Ammonium lauryl sulphate
Concentration %: 27

EMPICOL AL70:
Appearance: liquid
Ammonium lauryl sulphate
Concentration %: 68

EMPICOL HL25:
Appearance: liquid
Lithium lauryl sulphate
Concentration %: 25

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

Fatty Alcohol Sulphates (Toiletry Grades) (Continued):

EMPICOL LQ33/T:
Appearance: liquid
Monoethanolamine lauryl sulphate
Concentration %: 33

EMPICOL LX:
Appearance: powder
Sodium lauryl sulphate
Concentration %: 90

EMPICOL LX28:
Appearance: liquid/paste
Sodium lauryl sulphate
Concentration %: 29

EMPICOL LX100:
Appearance: powder
Sodium lauryl sulphate
Concentration %: 97

EMPICOL LXV:
Appearance: needles
Sodium lauryl sulphate
Concentration %: 85

EMPICOL LXV100:
Appearance: needles
Sodium lauryl sulphate
Concentration %: 95

EMPICOL LZ:
Appearance: powder
Sodium lauryl sulphate
Concentration %: 90

EMPICOL LZ/D:
Appearance: powder
Sodium lauryl sulphate (BP grade)
Concentration %: 90

EMPICOL LZV:
Appearance: needles
Sodium lauryl sulphate
Concentration %: 25

EMPICOL LZV/D:
Appearance: needles
Sodium lauryl sulphate (BP grade)
Concentration %: 90

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

Fatty Alcohol Sulphates (Toiletry Grades) (Continued):

EMPICOL ML26/F:
Appearance: liquid
Magnesium lauryl sulphate
Concentration %: 26

EMPICOL TAS30:
Appearance: paste
Sodium tallow sulphate
Concentration %: 30

EMPICOL TL40/T:
Appearance: liquid
Triethanolamine lauryl sulphate
Concentration %: 40

EMPICOL 0031/T:
Appearance: liquid
Diethanolamide lauryl sulphate
Concentration %: 36

EMPICOL 0045:
Appearance: powder
Sodium lauryl sulphate
Concentration %: 95

EMPICOL 0045V:
Appearance: needles
Sodium lauryl sulphate
Concentration %: 88

EMPICOL 0303:
Appearance: powder
Sodium lauryl sulphate
Concentration %: 96

EMPICOL 0303V:
Appearance: needles
Sodium lauryl sulphate
Concentration %: 95

EMPICOL 0585/A:
Appearance: liquid
Sodium ethyl hexyl sulphate
Concentration %: 40

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

Fatty Alcohol Sulphates (Toiletry Grade) (Continued):

EMPICOL 0758:
Appearance: liquid
Sodium decyl sulphate
Concentration %: 40

EMPICOL 0775:
Appearance: liquid
Sodium lauryl/tallow sulphate
Concentration %: 42

EMPICOL 0775/55:
Appearance: liquid
Sodium lauryl/tallow sulphate
Concentration %: 55

Alkyl Sulphosuccinates:

EMPICOL SDD:
Appearance: liquid
Di-sodium lauryl ethoxy sulphosuccinate
Concentration %: 40

EMPICOL SLL:
Appearance: paste
Di-sodium alkyl sulphosuccinate
Concentration %: 40

EMPICOL SLL/P:
Appearance: powder
Di-sodium alkyl sulphosuccinate
Concentration %: 8

Phosphate Esters:

EMPICOL 0216:
Appearance: liquid
Fatty alcohol ethoxy phosphate ester
Concentration %: 95

Formulated Products:

EMPICOL XC35:
Appearance: liquid
Pealised shampoo concentrate
Concentration %: 40

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

Formulated Products (Continued):

EMPICOL XM17:
Appearance: liquid
Carpet shampoo concentrate
Concentration %: 33

EMPICOL 0627:
Appearance: paste
Pearling/opacifying concentrate
Concentration %: 25

EMPICOL 9060X:
Appearance: paste
Pearling/opacifying concentrate
Concentration %: 40

EMPIGEN:
Alkyl Ampho(di)acetates:

EMPIGEN CDR40:
Appearance: liquid
Cocoampho(di)acetate
Concentration %: 45

EMPIGEN CDR60:
Appearance: liquid
Cocoamphoacetate
Concentration %: 50

EMPIGEN CDL60:
Appearance: liquid
Lauroamphoacetate
Concentration %: 50

EMPIGEN XDR302:
Appearance: liquid
Cocoamphoacetate/anionic blend
Concentration %: 30

Amine Derivatives:

EMPIGEN BAC50:
Appearance: liquid
Alkyl dimethyl benzyl ammonium chloride
Concentration %: 50

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

Amine Derivatives (Continued):

EMPIGEN BAC50/BP:
Appearance: liquid
Alkyl dimethyl benzyl ammonium chloride
Concentration %: 50

EMPIGEN BAC90:
Appearance: paste
Alkyl dimethyl benzyl ammonium chloride
Concentration %: 90

EMPIGEN BB:
Appearance: liquid
Alkyl dimethyl amine betaine
Concentration %: 30

EMPIGEN BCB50:
Appearance: liquid
Alkyl dimethyl benzyl ammonium chloride
Concentration %: 50

EMPIGEN BS/H:
Appearance: liquid
Alkyl amido propyl dimethyl amine betaine
Concentration %: 30

EMPIGEN BS/P:
Appearance: liquid
Alkyl amido propyl dimethyl amine betaine
Concentration %: 30

EMPIGEN CHB40:
Appearance: liquid
Alkyl trimethyl ammonium bromide (cetrimide Sol.)
Concentration %: 40

EMPIGEN CM:
Appearance: liquid
Alkyl trimethyl ammonium methosulphate
Concentration %: 30

EMPIGEN OB:
Appearance: liquid
Alkyl dimethyl amine oxide
Concentration %: 30

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPIGEN (Continued):
Amine Derivatives (Continued):

EMPIGEN OC:
Appearance: liquid
Alkyl dimethyl amide oxide
Concentration %: 30

EMPIGEN OH25:
Appearance: liquid
Alkyl dimethyl amine oxide
Concentration %: 25

EMPIGEN OS/A:
Appearance: liquid
Alkyl amido propyl dimethyl amine oxide
Concentration %: 30

EMPIGEN OY:
Appearance: liquid
Alkyl ethoxy dimethyl amine oxide
Concentration %: 25

EMPIGEN 5089:
Appearance: liquid
Alkyl trimethyl ammonium chloride
Concentration %: 34

EMPIGEN 5107:
Appearance: liquid
Alkyl dimethyl amine betaine
Concentration %: 30

EMPIGEN 5509:
Appearance: liquid
Alkyl amido propyl sulfobetaine
Concentration %: 45

Amine Salts and Imidazoline Quaternaries:

EMPIGEN FKC75L:
Appearance: paste
Dialkyl diamido amine lactate
Concentration %: 75

EMPIGEN FKH75L:
Appearance: paste
Dialkyl diamido amine lactate
Concentration %: 75

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPIGEN (Continued):
Amine Salts and Imidazoline Quaternaries (Continued):

EMPIGEN FRC75S:
Appearance: liquid
Alkyl imidazoline methosulphate
Concentration %: 75

EMPIGEN FRC90S:
Appearance: liquid
Alkyl imidazoline methosulphate
Concentration %: 90

EMPILAN:
Nonionics, including Alkoxylates and Alkyloamides:

EMPILAN BQ100:
Appearance: liquid
Fatty acid ethoxylate
Concentration %: 100

EMPILAN CDE:
Appearance: liquid/paste
Coconut diethanolamide
Concentration %: 90

EMPILAN CDX:
Appearance: liquid/paste
Coconut diethanolamide
Concentration %: 65

EMPILAN CIS:
Appearance: waxy flake
Coconut monoisopropanolamide
Concentration %: 92

EMPILAN CME:
Appearance: waxy flake
Coconut monoethanolamide
Concentration %: 94

EMPILAN EGMS:
Appearance: waxy flake
Ethylene glycol monostearate
Concentration %: 100

EMPILAN GMS Series:
Appearance: powders
Glycerol monostearates
Concentration %: Various

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPILAN (Continued):
Nonionics, including Alkoxylates and Alkyloamides (Continued):

EMPILAN KA Series:
Appearance: liquids to solids
Alcohol ethoxylates (C10-C12)
Concentration %: 100

EMPILAN KB Series:
Appearance: liquids to solids
Alcohol ethoxylates (C12-C14)
Concentration %: 100

EMPILAN KC Series:
Appearance: liquids
Alcohol ethoxylates (C12-C18)
Concentration %: 100

EMPILAN KCA Series:
Appearance: liquids
Alcohol ethoxylates (C12-C13)
Concentration %: 100

EMPILAN KCB Series:
Appearance: liquids
Alcohol ethoxylates (C11)
Concentration %: 100

EMPILAN KCL Series:
Appearance: liquids to pastes
Alcohol ethoxylates (C12-C15)
Concentration %: 100

EMPILAN KCP Series:
Appearance: liquids to pastes
Alcohol ethoxylates (C14-C15)
Concentration %: 100

EMPILAN KCX Series:
Appearance: liquids to pastes
Alcohol ethoxylates (C13-C15)
Concentration %: 100

EMPILAN KCMP0703/F:
Appearance: liquid
Alcohol ethoxylate/propoxylate
Concentration %: 100

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPILAN (Continued):
Nonionics, including Alkoxylates and Alkyloamides (Continued):

EMPILAN KCMPO75/F:
Appearance: liquid
Alcohol ethoxylate/propoxylate
Concentration %: 100

EMPILAN KI Series:
Appearance: liquids
Alcohol ethoxylates (C13)
Concentration %: 100

EMPILAN KL Series:
Appearance: liquids to pastes
Alcohol ethoxylates (C16-C18)
Concentration %: 100

EMPILAN KM Series:
Appearance: solids, flakes and powders
Alcohol ethoxylates (C16-C18)
Concentration %: 100

EMPILAN KS Series:
Appearance: liquids
Alcohol ethoxylates (C9-C11)
Concentration %: 100

EMPILAN LDE:
Appearance: waxy solid
Lauric diethanolamide
Concentration %: 90

EMPILAN LIS:
Appearance: waxy flake
Lauric isopropanolamide
Concentration %: 92

EMPILAN LME:
Appearance: waxy solid
Lauric monoethanolamide
Concentration %: 92

EMPILAN LP2:
Appearance: soft paste
Coconut monoethanolamide ethoxylate
Concentration %: 100

EMPILAN LP10:
Appearance: soft paste
Coconut monoethanolamide ethoxylate
Concentration %: 100

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPILAN (Continued):
Nonionics, including Alkoxylates and Alkyloamides (Continued):

EMPILAN MAA:
Appearance: soft paste
Coconut monoethanolamide ethoxylate
Concentration %: 100

EMPILAN NP Series:
Appearance: liquids to solids
Nonyl phenol ethoxylates
Concentration %: 100

EMPILAN OPE9.5:
Appearance: liquid
Octyl phenol ethoxylate
Concentration %: 100

EMPILAN P7061:
Appearance: liquid
Ethylene oxide/propylene oxide condensate
Concentration %: 100

EMPILAN P7062:
Appearance: liquid
Ethylene oxide/propylene oxide condensate
Concentration %: 100

EMPILAN P7087:
Appearance: liquid
Ethylene oxide/propylene oxide condensate
Concentration %: 100

EMPILAN PF7158:
Appearance: liquid
Alcohol ethoxylate/propoxylate
Concentration %: 100

EMPILAN PF7159:
Appearance: liquid
Alcohol ethoxylate/propoxylate
Concentration %: 100

EMPILAN 2502:
Appearance: liquid
Coconut diethanolamide
Concentration %: 80

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPIMIN:
Alkyl Sulphosuccinamates:

EMPIMIN MH:
Appearance: liquid
Di-sodium N-cocoyl sulphosuccinamate
Concentration %: 40

EMPIMIN MK/B:
Appearance: paste
Di-sodium-cetyl stearyl sulphosuccinamate
Concentration %: 33

Alkyl Sulphosuccinates:

EMPIMIN MA:
Appearance: liquid
Sodium di-hexyl sulphosuccinate
Concentration %: 63

EMPIMIN OP70:
Appearance: liquid
Sodium di-octyl sulphosuccinate
Concentration %: 70

EMPIMIN OT:
Appearance: liquid
Sodium di-octyl sulphosuccinate
Concentration %: 61

EMPIMIN OT75:
Appearance: liquid
Sodium di-octyl sulphosuccinate
Concentration %: 75

Fatty Alcohol Ethoxy Sulphates (Detergent/Industrial Grade):

EMPIMIN KSN27:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 27

EMPIMIN KSN70:
Appearance: liquid
Sodium lauryl ethoxy sulphate
Concentration %: 70

EMPIMIN LSM30:
Appearance: liquid
Sodium alkyl ethoxy sulphate
Concentration %: 30

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

EMPIMIN (Continued):
Fatty Alcohol Sulphate (Detergent/Industrial Grade):

EMPIMIN LR28:
Appearance: liquid
Sodium lauryl sulphate
Concentration %: 28

Formulated Products:

EMPIMIN BMC:
Appearance: liquid
Air entraining agent for mortar/cement
Concentration %: 27

EMPIMIN 3060:
Appearance: liquid
Fire fighting foam concentrate
Concentration %: 25

EMPIWAX:
Anionic Emulsifying Waxes:

EMPIWAX SK:
Appearance: flake
Self-emulsifying wax
Concentration %: 100

EMPIWAX SK/BP:
Appearance: flake
Self-emulsifying wax (BP)
Concentration %: 100

LAUREX:
Fatty Alcohols

LAUREX CS:
Appearance: flake
Cetyl/stearyl alcohol
Concentration %: 100

LAUREX CS/D:
Appearance: flake
Cetyl/stearyl alcohol (BP)
Concentration %: 100

LAUREX CS/W:
Appearance: liquid
Cetyl/stearyl alcohol
Concentration %: 100

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

MARCHON:
Formulated Products (Oilfield Chemicals):

MARCHON DC1102:
Appearance: liquid
Cuttings wash cleaner
Concentration %: 81

NANSA:
Alkyl Aryl Sulphonic Acids and Salts

NANSA AS40:
Appearance: liquid
Ammonium alkyl benzene sulphonate
Concentration %: 40

NANSA EVM series:
Appearance: liquids
Calcium alkyl benzene sulphonate
Concentration %: Various

NANSA HS80/S range:
Appearance: powders
Sodium alkyl benzene sulphonates
Concentration %: 80

NANSA HS85/S:
Appearance: flake
Sodium alkyl benzene sulphonate
Concentration %: 85

NANSA SBA:
Appearance: liquid
Alkyl benzene sulphonic acid (branched)
Concentration %: 96

NANSA SB30:
Appearance: paste
Sodium alkyl benzene sulphonate (branched)
Concentration %: 30

NANSA SSA Series:
Appearance: liquids
Alkyl benzene sulphonic acids
Concentration %: Various

NANSA SS50:
Appearance: paste
Sodium alkyl benzene sulphonate
Concentration %: 50

ALBRIGHT & WILSON AMERICAS: Surfactants (Continued):

NANSA (Continued):
Alkyl Aryl Sulphonic Acids and Salts (Continued):

NANSA SS55:
Appearance: paste
Sodium alkyl benzene sulphonate
Concentration %: 55

NANSA TS50:
Appearance: liquid
Triethanolamine alkyl benzene sulphonate
Concentration %: 50

NANSA YS94:
Appearance: liquid
Isopropylamine alkyl benzene sulphonate
Concentration %: 95

Alpha Olefin Sulphonates:

NANSA LSS38A:
Appearance: liquid
Sodium C14-C16 olefin sulphonate
Concentration %: 38

Formulated Products:

NANSA MA30:
Appearance: liquid
Mortar plasticiser
Concentration %: 30

NANSA range of liquid detergents and concentrates

ALCOLAC: ABEX Proprietary Surfactants for Emulsion Polymerization:

ABEX surfactants are a unique series of specialty products that have been custom designed for emulsion polymerization applications.

ABEX 22S:
% Activity: 25
Physical Form @ 25C: Liquid

ABEX JKB:
% Activity: 30
Physical Form @ 25C: Liquid

ABEX 33S:
% Activity: 30
Physical Form @ 25C: Liquid

ABEX 26S:
% Activity: 33
Physical Form @ 25C: Liquid

ABEX 18S:
% Activity: 35
Physical Form @ 25C: Liquid

ABEX 1404:
% Activity: 42
Physical Form @ 25C: Liquid

ABEX VA50:
% Activity: 46
Physical Form @ 25C: Liquid

ABEX 23S:
% Activity: 60
Physical Form @ 25C: Liquid

Among the technical and economic advantages provided by this series of products are:

* Low levels of coagulum
* pH and temperature stability
* High molecular weight polymers
* Low foam
* High solids
* Small particle size
* Outstanding film-forming properties
* Excellent pigment compatibility
* Utility in high acid systems

The ABEX series can be employed with virtually all commonly used monomers, including vinyl acetate, acrylic and methacrylic acids and their esters, styrene, butadiene and others.

ALCOLAC: ALCONATE Sulfosuccinates and Sulfosuccinimates:

Sulfosuccinates:

ALCONATE 2 CH:
Dicyclohexyl Sodium Sulfosuccinate
% Activity: 43
Form: Paste
Features: Emulsifier in emulsion polymerization or post-add in latex compounding.

ALCONATE CPA:
Disodium Cocamido MIPA-Sulfosuccinate
% Activity: 40
Form: Liquid
Features: Effective anti-irritation agent for mild shampoos, liquid handsoaps, bath and shower products.

ALCONATE SBDO:
Dioctyl Sodium Sulfosuccinate
% Activity: 70
Form: Liquid
Features: Outstanding wetting and surface active agent. Dispersant and penetrating agent for industrial and mining applications.

ALCONATE SBF-12:
Disodium Lauryl Sulfosuccinate
% Activity: 40
Form: Paste
Features: Irritation mollifying agent for high foam shampoos, toilet soaps and personal care products.

ALCONATE SBFA-30:
Disodium Monolaureth Sulfosuccinate
% Activity: 30
Form: Liquid
Features: Exceptionally mild, good flash foam. Used in bath gels and baby care products.

ALCONATE SBG-280:
Disodium Oleamido MEA-Sulfosuccinate
% Activity: 30
Form: Liquid
Features: Excellent thickener and conditioner. Imparts sheen to hair and soft feel to skin.

ALCONATE SBL-203:
Disodium Lauramido MEA-Sulfosuccinate
% Activity: 40
Form: Liquid
Features: Improves flash foam of anionic systems. Produces brittle, tack-free residue for carpet shampoos.

ALCOLAC: ALCONATE Sulfosuccinates and Sulfosuccinamates (Continued):

Sulfosuccinates:

ALCONATE SBN-862:
Disodium Nonoxynol-10 Sulfosuccinate
% Activity: 32
Form: Liquid
Features: Emulsifier and dispersant for emulsion polymerization of vinyl acetate and acrylates.

ALCONATE SBR-3:
Disodium Ricinoleamido MEA-Sulfosuccinate
% Activity: 39
Form: Liquid
Features: Counter irritant for anionic bases. Skin protectant.

ALCONATE SBU-185:
Disodium Undecylenamido MEA-Sulfosuccinate
% Activity: 45
Form: Liquid
Demonstrates anti-microbial activity for dandruff removal shampoos and medicated treatments.

Sulfosuccinamate:

ALCONATE SBTA-269:
Disodium Alkyl (C18) Sulfosuccinamate
% Activity: 36
Form: Liquid
Generates copious, stable foam in latex systems.

ALCOLAC: CYCLOCHEM Fatty Acid Esters, Fatty Alcohols, Nonionic Wax Blends:

Pearlizing Agents:

CYCLOCHEM EGDS:
Glycol Distearate
Form: Flakes
Melting Range C: 60-67
Features: Opacifier/Pearlizing agent in personal care and detergent systems.

CYCLOCHEM EGMS:
Glycol Stearate
Form: Flakes
Melting Range C: 57-62
CYCLOCHEM SEG:
Glycol Stearate
Form: Flakes
Melting Range C: 55-60
Features: Pearlizing agent in shampoos, liquid handsoaps, and liquid detergent products. Also serves as emulsion stabilizer and viscosity builder in these systems.

CYCLOSHEEN 202:
Glycol Stearate, Emulsifiers
Form: Lotion/Paste
Pearl concentrate for cold blend formulations. Also contains viscosity building, foam boosting, and conditioning agents.

Emulsifiers, Viscosity Builders:

CYCLOCHEM NI:
Emulsifying Wax
Form: Flakes
Melting Point C: 48-51
CYCLOCHEM POL:
Emulsifying Wax
Form: Solid
Melting Point C: 48-52
Nonionic emulsifying waxes used in creams, lotions, and ointments. Stable in caustic and thioglycolate bases. Excellent viscosity building agents.

ALCOLAC: CYCLOCHEM Fatty Acid Esters, Fatty Alcohols, Nonionic Wax Blends (Continued):

Emulsifiers, Viscosity Builders (Continued):

CYCLOCHEM PEG 200, 300, 400, 600, 6000 Esters:
Mono & Diester Laurates, Stearates & Oleates
Form: Various
Coupling and spreading agents for bath oils and personal care products. Pigment dispersing aids and wetting agents. Useful in metal lubricants formulations. Viscosity builders for lotions, shampoos, and creme rinses.

Emollients, Viscosity Builders:

Cetyl Alcohol, NF:
Cetyl Alcohol
Form: Flake
Melting Range C: 45-50
Cetyl-Stearyl Alcohol:
Cetearyl Alcohol
Form: Flake
Melting Range C: 52-56
Cetostearyl Alcohol, NF:
Cetearyl Alcohol
Form: Flake
Melting Range C: 43-53
Stearyl Alcohol, NF:
Stearyl Alcohol
Form: Flake
Melting Range C: 55-60
Emollients, viscosity builders, and opacifiers in creams, lotions, makeup bases, and creme rinse conditioners. Lubricants in industrial applications.

Lubricants, Polishes:

CYCLOCHEM GMO:
Glyceryl Mono Oleate
Form: Liquid
Emulsifier and anti-stat for plastic industries. Lubricant in metal-working industry.

CYCLOCHEM PETS:
Pentaerythritol Tetrastearate
Form: Flake/Bead
Melting Range, C: 59-63
External lubricant and anti-stat for plastic extrusion, metal-working and mold releases.

ALCOLAC: CYCLOMIDE Alkanolamides:

1:1 Monoethanolamides:

CYCLOMIDE C212:
Cocamide MEA
% Amide: 95
Form: Flake
Versatile foam booster, stabilizer and viscosity building agent for shampoo and personal care systems. Used in liquid and powdered cosmetics and detergents.

CYCLOMIDE L203:
Lauramide MEA
% Amide: 95
Form: Flake
High purity amide used in the formulation of premium quality shampoos and high foaming cosmetic products. Especially useful in powdered foam bath applications.

CYCLOMIDE S280:
Stearamide MEA
% Amide: 95
Form: Flake
Superb viscosity building and pearlizing agent for liquid and paste shampoos, toiletries, and conditioner systems. Excellent, high melting lubricant for industrial applications.

1:1 Diethanolamides Superamides:

CYCLOMIDE DC 212/S:
Cocamide DEA
% Amide: 85
Form: Liquid
Economical foam booster and viscosity builder. Used in shampoos, bubble baths, liquid handsoaps, dishwashes, and household cleaners.

CYCLOMIDE DC 212/SE:
Cocamide DEA
% Amide: 95
Form: Liquid
CYCLOMIDE KD:
Cocamide DEA
% Amide: 95
Form: Liquid
High performance cosmetic grade amides. Display exceptional viscosity building properties in high foaming shampoos and personal care products.

ALCOLAC: CYCLOMIDE Alkanolamides (Continued):

1:1 Diethanolamides Superamides (Continued):

CYCLOMIDE DL 203/S:
Lauramide DEA
% Amide: 95
Form: Solid
CYCLOMIDE DL 207/S:
Lauramide DEA (Lauric/Myristic)
% Amide: 95
Form: Solid
Outstanding foam boosting, stabilizing properties. Greatly enhances viscosity and performance properties in handsoaps and related cosmetic preparation.

CYCLOMIDE LE:
Lauramide DEA
% Amide: 95
Form: Liquid
Unique liquid Lauramide DEA. Exhibits the same excellent performance properties displayed by conventional, solid LAURAMIDE DEA. Requires no heat.

CYCLOMIDE DIN 295/S:
Linoleamide DEA
% Amide: 85
Form: Liquid
CYCLOMIDE DO 280/S:
Oleamide DEA
% Amide: 85
Form: Liquid
CYCLOMIDE DS 280/S:
Stearamide DEA
% Amide: 95
Form: Solid
Specialty cosmetic grade amides that exhibit exceptional viscosity building properties in formulated products. Excellent thickeners for gel and economy shampoos, handsoaps, and bath preparations. Contribute conditioning properties to hair care and skin cleaner formulations.

2:1 Diethanolamides:

CYCLOMIDE DC 212:
Cocamide DEA
Form: Liquid
Industrial grade amide with high free amine content. Used in high pH cleaners, degreasers, and floor strippers. Good foam boosters and stabilizers.

ALCOLAC: CYCLOMIDE Alkanolamides (Continued):

2:1 Diethanolamides (Continued):

CYCLOMIDE DC 212/M:
Modified Cocamide DEA
Form: Liquid
Modified industrial grade amide. Functional ingredient in light and heavy duty detergents, degreasers, and all-purpose cleaners.

CYLCOMIDE DO 280:
Oleamide DEA
Form: Liquid
CYCLOMIDE DIN 295:
Linoleamide DEA
Form: Liquid
CYCLOMIDE DS 280:
Stearamide DEA
Form: Solid
CYCLOMIDE RODEA:
Ricinoleamide DEA
Form: Liquid
Specialty fatty amides that demonstrate excellent viscosity building and grease cutting properties in formulated cleaner systems. Also excellent lubricants for metal treatment applications.

1:1 Monoisopropanolamides:

CYCLOMIDE LIPA:
Lauramide MIPA
% Amide: 95
Form: Flake
Solid amide used in powdered dishwash and bath & toiletry formulations. Produces brittle, dry residue for carpet shampoo applications.

Amidoamines:

CYCLOMIDE CODI:
Cocamidopropyl Dimethylamine
% Amide: 98
Form: Liquid
CYCLOMIDE SODI:
Stearamidopropyl Dimethylamine
% Amide: 98
Form: Solid
Conditioning and anti-stat agents in low pH creme rinse conditioners. Excellent emulsifiers and viscosity building additives for cationic emulsions.

ALCOLAC: CYCLOMOX Amine Oxides:

CYCLOMOX C:
Cocamine Oxide
% Activity: 30
Form: Liquid
CYCLOMOX CO:
Cocamidopropylamine Oxide
% Activity: 30
Form: Liquid
CYCLOMOX L:
Lauramine Oxide
% Activity: 30
Form: Liquid
CYCLOMOX LO:
Lauramidopropylamine Oxide
% Activity: 30
Form: Liquid
CYCLOMOX SO:
Stearamidopropylamine Oxide
% Activity: 30
Form: Paste

Foam boosters, stabilizers, and viscosity builders for anionic based systems. Contribute excellent conditioning properties to formulated shampoo products. Used in shampoos, liquid handsoaps, bubble baths, liquid dishwashes, bathroom scours, and light duty cleaners.

ALCOLAC: CYCLOPHOS Phosphate Esters - Free Acid Form:

CYCLOPHOS P 4:
Type: Aliphatic
Foaming Properties: Very Low
% Concentration: 98
CYCLOPHOS PB 01:
Type: Aliphatic
Foaming Properties: Very Low
% Concentration: 98
CYCLOPHOS PG 55:
Type: Aliphatic
Foaming Properties: Very Low
% Concentration: 98
Extremely low foaming surfactants and emulsifiers used in mechanical dishwashers, pressure sprays, rinse aids, and low foam cleaners.

CYCLOPHOS PO 3:
Type: Aliphatic
Foaming Properties: Low
% Concentration: 98
Cosmetic grade phosphate ester used as conditioning agent and coupling agent in hair care and cosmetic preparations. Especially useful in ethnic personal care formulations as a solubilizer for mineral oil.

CYCLOPHOS PE 5:
Type: Aromatic
Foaming Properties: Moderate
% Concentration: 98
CYCLOPHOS PL 3
Type: Aliphatic
Foaming Properties: Moderate
% Concentration: 98
CYCLOPHOS PL 31:
Type: Aliphatic
Foaming Properties: Moderate
% Concentration: 98
Oil soluble moderate foaming emulsifiers. Alkali stable surfactants for degreasers, heavy duty metal washes, and industrial cleaners. Outstanding dispersants, lubricants, and anticorrosion agents.

ALCOLAC: CYCLOPHOS Phosphate Esters - Free Acid Form (Continued):

CYCLOPHOS PB 12:
Type: Aromatic
Foaming Properties: High
% Concentration: 98
CYCLOPHOS PE 9:
Type: Aromatic
Foaming Properties: High
% Concentration: 98
CYCLOPHOS PE 120:
Type: Aromatic
Foaming Properties: High
% Concentration: 98
CYCLOPHOS PL 6A:
Type: Aliphatic
Foaming Properties: High
% Concentration: 98
CYCLOPHOS PL 61:
Type: Aliphatic
Foaming Properties: High
% Concentration: 98
Superb coupling agents and hydrotropes for formulated cleaner products. Excellent alkali and phosphate builder tolerance. Exceptional anticorrosion properties for metal treatment and industrial applications.

ALCOLAC: CYCLORYL Formulated Shampoo and Detergent Concentrates:

Personal Care & Specialty Concentrates:

CYCLORYL ALC:
PEG 80 Sorbitan Laurate, Sodium Trideceth Sulfate, PEG 150 Distearate, et al
% Concentration: 62
Economical baby shampoo concentrate specially formulated to produce viscous, non-irritating shampoos and skin cleanser products.

CYCLORYL ANL:
Sodium C14-16 Olefin Sulfonate, Sodium Laureth Sulfate, Lauramide DEA
% Concentration: 50
Optimized high foaming base used in the formulation of quality shampoos, handsoaps, and bath and toiletry preparations.

CYCLORYL CBS:
PEG 80 Sorbitan Laurate, Sodium Trideceth Sulfate, Lauroamphocarboxyglycinate, et al
% Concentration: 40
Premium baby shampoo concentrate used in the preparation of high performance, non-irritating, baby care formulations.

CYCLORYL CN:
Sodium Laureth Sulfate, Builders
% Concentration: 64
High activity concentrate for preparation of economy shampoos, bubble baths, and skin cleanser products.

CYCLORYL EW:
Ammonium Lauryl Sulfate, Lauramide DEA
% Concentration: 40
Versatile premium quality concentrate used in the preparation of generic matches for commercial hair care, bath gels, bubble and handsoap systems.

CYCLORYL GSC:
Cocoamphodiactate, Sodium Laureth Sulfate
% Concentration: 30
Mild bath gel/shampoo concentrate developed for use in high viscosity, low irritation personal care preparations.

CYCLORYL MI:
Sodium Lauryl Sulfate, Stearamide MEA, Glycol Stearate, Cocamide MEA
% Concentration: 35
Completely formulated pearlescent base developed for the preparation of pearl shampoo, bubble bath, handsoap, and pet products. Requires no heat.

ALCOLAC: CYCLORYL Formulated Shampoo and Detergent Concentrates (Continued):

Personal Care & Specialty Concentrates (Continued):

CYLCORYL NWC:
Sodium Laureth Sulfate, Cocamide DEA, TEA-Lauryl Sulfate
% Concentration: 62
Multi-functional, concentrated blend custom formulated to be used in the preparation of both economy and high performance cosmetic and pet care products.

CYCLORYL XL-M:
DEA Lauryl Sulfate and DEA Cocaminopropionate
% Concentration: 36
Rich lathering base used in the formulation of mild shampoo, bubble bath, and skin cleanser products, generates an elegant, luxurious foam.

Household & Industrial Concentrates:

CYCLORYL Anionic 50:
Alkyl Aryl Sulfonate, and Builders
% Concentration: 50
Industrial strength surfactant blend for degreasing and cleaning applications. Used in general purpose cleaners, floor strippers, bathroom scours and built detergent systems.

CYCLORYL CAN:
Formulated Anionic and Nonionic Surfactant Concentrate
% Concentration: 90
Versatile heavy duty cleaner concentrate specially developed for the formulation of economy laundry detergents, liquid dishwashes, and household/industrial cleaner products.

CYCLORYL DCA:
Anionic Modified Coconut Amide
% Concentration: 100
Highly concentrated surfactant base used in the formulation of industrial and household cleaners. Requires no additional builders.

CYCLORYL LDC:
Formulated Anionic and Nonionic Surfactant Concentrate
% Concentration: 60
High performance light duty detergent concentration. Optimized blend of high foaming surfactants and builders for preparation of quality liquid dishwashes and all purpose cleaners.

ALCOLAC: CYCLORYL Formulated Shampoo and Detergent Concentrates (Continued):

Household & Industrial Concentrates (Continued):

CYCLORYL LDW-60:
Formulated Anionic and Nonionic Surfactant Concentrate
% Concentration: 60
Cost-effective detergent blend used in the formulation of efficient dishwash and light duty cleaner systems.

CYCLORYL NAX:
Formulated Anionic and Nonionic Surfactant Concentrate
% Concentration: 60
Economy concentrate specially developed for the preparation of inexpensive, generic dishwash and household cleaner products.

CYCLORYL OK:
Alcohol Sulfate Concentrate
% Concentration: 65
Specialty blend developed for use as a textile lubricant and spin-finish ingredient.

CYCLORYL SMC:
Formulated Anionic and Nonionic Surfactant Concentrate
% Concentration: 95
Built laundry detergent base. Used in the preparation of high performance textile washes and hard surface cleaners.

CYCLORYL RS 25:
Blended Anionic Surfactant Base
% Concentration: 25
Unique, high foaming carpet shampoo and upholstery cleaner concentrate. Produces a dry foam that dries to a brittle residue for easy removal.

ALCOLAC: CYCLOTERIC Amphoterics:

Amido-Betaines:

CYCLOTERIC BET-C30:
Cocamidopropyl Betaine (Cosmetic Grade)
% Activity: 30
CYCLOTERIC BET-W:
Cocamidopropyl Betaine (Technical Grade)
% Activity: 30
CYCLOTERIC BET-CB:
Cocamidopropyl Betaine (Cosmetic, Glycerine Free)
% Activity: 30
Foam boosters, foaming agents, thickeners, and conditioning agents. Used as performance boosters in shampoo, cosmetic and industrial applications. Effective irritation mollifying agents for use in baby shampoos and ultra-mild personal care products.

CYCLOTERIC BET-O 30:
Oleamidopropyl Betaine
% Activity: 30
Unique hair conditioning ingredient for detangling, conditioning shampoos. Excellent viscosity building properties for bath gels and gel shampoos.

CYCLOTERIC BET-OD 40:
Capric/Caprylic Amido Betaine
% Activity: 40
Low foam wetting agent for pressure sprays, mechanical washes, detergent scours and low foam cleaners.

Betaines:

CYCLOTERIC BET-C 41:
Coco Betaine
% Activity: 41
CYCLOTERIC BET-L 31:
Lauryl Betaine
% Activity: 31
High foaming conditioning agent used in shampoos, foam baths, and liquid handsoaps.

CYCLOTERIC BET-OB 50:
Oleyl Betaine
% Activity: 50
Viscosity building/gelling agent used in bath gel and shampoo applications. Imparts soft, elegant feel to skin.

ALCOLAC: CYCLOTERIC Amphoterics (Continued):

Glycinate:

CYCLOTERIC BET-T2 40:
Dihydoxyethyl Tallow Glycinate
% Activity: 40
Acid stable, viscosity building agent for industrial applications. Excellent conditioning ingredient in premium quality shampoos.

Imidazoline:

CYLCOTERIC 1398:
Cocoamphodiacetate
% Activity: 40
Low eye sting surfactant used in the preparation of baby shampoo, baby bath, and ultra-mild personal care products.

Propionates:

CYCLOTERIC CAPA:
Cocaminopropionic Acid
% Activity: 40
CYCLOTERIC SLIP:
Sodium Lauriminodipropionate
% Activity: 30
High foaming, protein substantive conditioning agents used in shampoos, skin cleansers, and foam baths. Also, excellent surfactants for hard surface cleaners, car washes, and industrial foamers.

Sultaine:

CYCLOTERIC BET-CS:
Cocamidopropyl Hydroxy Sultaine
% Activity: 40
Exceptional foaming agent and performance booster for high foaming shampoos and related cosmetic products. Effective irritation ameliorating ingredient for baby care formulations.

ALCOLAC: CYCLOTON Cationic Surfactants:

CYCLOTON M242C/29:
Cetrimonium Chloride
% Activity: 29
Form: Liquid
Cold water dispersible quaternary surfactant. Forms transparent dispersions in water. Versatile conditioning agent in all types of hair conditioner and hair treatment applications.

CYCLOTON D261C/70:
Ditallowalkonium Chloride
% Activity: 70
Form: Soft Paste
CYCLOTON D261C/75:
Ditallowalkonium Chloride
% Activity: 75
Form: Firm Paste
Concentrated base for preparation of premium fabric softeners, anti-static treatments, and hair conditioner products. CTFA adopted name Quaternium-18.

CYCLOTON 7LUF:
Olealkonium Chloride
% Activity: 50
Form: Liquid
Pumpable conditioner base for formulation of high viscosity, creme rinse systems.

CYCLOTON M270C/18:
Stearalkonium Chloride
% Activity: 25
Form: Soft Paste
CYCLOTON M270C/85:
Stearalkonium Chloride
% Activity: 85
Form: Flake
Widely used cationic base for preparation of opaque and pearlescent creme rinse conditioners. Provide excellent anti-stat, comb-out, and detangling properties in formulated hair care products.

CYCLOTON SCS:
Stearalkonium Chloride, Builders
Form: Flake
Economical formulated hair conditioner base. Forms attractive, viscous, creme rinse products that display excellent conditioning properties.

ALCOLAC: CYCLOTON Cationic Surfactants (Continued):

CYCLOTON D256B/99:
Cetyl Ethyl Dimethyl Ammonium Bromide
% Activity: 99
Form: Powder
CYCLOTON M242B/99:
Cetrimonium Bromide
% Activity: 99
Form: Powder
CYCLOTON M214B/99:
Myrtrimonium Bromide
% Activity: 99
Form: Powder
Unique high purity cationic surfactants. Contributes exotic elegant feel to formulated hair conditioner products. Used in the formulation of light hair conditioners, hair conditioner sprays, mousses, and anti-static sprays.

CYCLOTON CT100:
Cetrimonium Bromide, Builders
Form: Flake
Formulated creme rinse concentrate. Produces viscous, premium quality hair care products that exhibit unique conditioning properties.

CYCLOTON 75C:
Ditallow Based Methylsulfate Quaternary
% Activity: 75
Form: Liquid
Economy softener concentrate for household and institutional applications. Used as textile softener, anti-stat, and in paper and pulp processing.

ALCOLAC: SIPEX Alkyl and Alkyl Ether Sulfates:

SIPEX BOS:
Sodium 2-Ethylhexyl Sulfate
% Activity: 40
Form: Liquid
Low foaming anionic surfactant that displays excellent wetting properties at high pH ranges. Used in emulsion polymerization, industrial cleaner and agricultural washing and peeling applications.

SIPEX CAV:
Sodium Isodecyl Sulfate
% Activity: 40
Form: Liquid
Exhibits exceptional surfactant and wetting properties at extreme temperatures. Recommended applications include household and industrial cleaners, emulsion polymerization and textile treatments.

SIPEX EST-30:
Sodium Trideceth Sulfate
% Activity: 30
Form: Liquid
SIPEX EST-75:
Sodium Trideceth Sulfate
% Activity: 75
Form: Liquid
Economical high foaming surfactants used in the formulation of mild shampoos, cosmetics, and household cleaners. Also used in the emulsion polymerization of PVC and styrene/ butadiene resins.

SIPEX ME 60:
Sodium Myreth Sulfate
% Activity: 58
Form: Liquid
Concentrated surfactant base for preparation of elegant shampoos and cosmetic products. Produces luxurious creamy lather in formulated personal care systems.

SIPEX NB 60:
Sodium Alkyl Ether Sulfate
% Activity: 60
Form: Liquid
Industrial grade foaming agent for de-dusting treatments, air drilling, wall board forming, and brine water baths. Displays excellent electrolyte and heavy ion tolerance.

ALCOLAC: SIPEX Alkyl and Alkyl Ether Sulfates (Continued):

SIPEX OLS:
Sodium Octyl Sulfate
% Activity: 33
Form: Paste
Rapid wetting, low foaming surfactant designed for use in metal cleaners, dishwashing detergents, rinse aids, and emulsion polymerization applications. Especially useful in electrolyte baths for metal cleaning and as a textile mercerizing agent.

SIPEX TDS:
Sodium Tridecyl Sulfate
% Activity: 25
Form: Liquid
Branched chain alkyl sulfate developed for emulsion polymerization of PVC, styrene, and acrylic systems. Also an excellent wetting agent for general detergent applications.

SIPEX 280:
Ammonium Nonoxynol-4 Sulfate
% Activity: 58
Form: Liquid
Versatile high foaming surfactant with excellent wetting, dispersing, and emulsifying properties. Used in shampoo, skin cleansers, light duty cleaners, and emulsion polymerization applications.

ALCOLAC: SIPON Lauryl Sulfates and Lauryl Ether Sulfates:

Lauryl Sulfates:

SIPON L-22:
Ammonium Lauryl Sulfate
% Activity: 28
High foaming base for the preparation of low pH shampoos, bubble baths and cosmetic products.

SIPON L-22HV:
Ammonium Lauryl Sulfate
% Activity: 28
High viscosity version of SIPON L-22. Used in the formulation of viscous shampoos, bath gels, and personal care products.

SIPON LCP:
Sodium Lauryl Sulfate
% Activity: 30
Low cloud point SLS. Specifically designed for emulsion polymerization application where it promotes good stability and particle uniformity.

SIPON LSB:
Sodium Lauryl Sulfate
% Activity: 29
Low salt, high foaming base used in the formulation of shampoos, bubble baths, hand cleaners, cosmetic emulsions, carpet shampoos, and detergent systems.

SIPON SB:
Sodium Lauryl Sulfate
% Activity: 29
High purity SLS recommended for emulsion polymerization, textile scouring, metal cleaning, and agricultural washing.

SIPON UB:
Sodium Lauryl Sulfate
% Activity: 30
Premium grade SLS for emulsion polymerization applications including vinyl and vinylidene chlorides, styrene and acrylic monomers. Choice surfactant for carboxylated SBR and acrylic froth applications.

SIPON LD:
DEA-Lauryl Sulfate
% Activity: 40

SIPON LT-6:
TEA-Lauryl Sulfate
% Activity: 40
Cosmetic grade base for the preparation of mild, high foaming shampoos, bubble baths, skin cleansers, and related cosmetic products.

SIPON LM:
Magnesium Lauryl Sulfate
% Activity: 27
Versatile foaming base used in both cosmetic and industrial applications. Excellent soil and grease suspending agent. Produces brittle, tack-free residue for carpet shampoos.

ALCOLAC: SIPON Lauryl Sulfates and Lauryl Ether Sulfates (Continued):

Lauryl Ether Sulfates:

SIPON EAY:
Ammonium Laureth (1) Sulfate
% Activity: 26
SIPON EA:
Ammoniun Laureth (3) Sulfate
% Activity: 27
Multi-functional foaming bases used in the preparation of mild shampoos, bubble baths, skin cleansers and related cosmetic products.
SIPON MA 360:
Ammonium Laureth (3) Sulfate
% Activity: 58
Economical concentrated ALES base with excellent hard water tolerance. Commonly used in shampoo, bath, and personal care products. Also widely used in light duty cleansers, liquid dishwash, and fabric washes.
SIPON ESY:
Sodium Laureth (1) Sulfate
% Activity: 25
SIPON ES 2:
Sodium Laureth (2) Sulfate
% Activity: 26
SIPON ES:
Sodium Laureth (3) Sulfate
% Activity: 27
Cosmetic grade SLES used in mild shampoos, bath products, skin cleansers, handsoaps, and high foaming toiletries. Excellent bases for preparation of high viscosity, formulated products.
SIPON NA 61:
Sodium Laureth (3) Sulfate
% Activity: 58
High activity, economical SLES concentrate. Universal foaming agent used in preparation of cost-effective shampoos, cosmetic products, light duty liquids, dishwash, and general purpose cleaners.
SIPON N 70:
Sodium Laureth (2) Sulfate
% Activity: 70
Highly concentrated SLES slurry. Recommended for use in high foaming shampoos, bath gels, and cosmetic preparations.
SIPON ES-7:
Sodium Laureth (7) Sulfate
% Activity: 28
SIPON ES-12:
Sodium Laureth (12) Sulfate
% Activity: 60
Specialty SLES bases that are exceptionally mild to the skin and eyes. Suggested applications include light face cleansers, baby baths, and perfume solubilizers.

ALCOLAC: SIPONATE Alkyl Aryl Sulfonates and Alpha Olefin Sulfonates:

Alkyl Aryl Sulfonates:

SIPONATE ABSA:
Dodecyl Benzene Sulfonic Acid
% Activity: 98
Form: Liquid
Concentrated free acid that with neutralization forms high foaming surfactant used in economy dishwashes, all purpose cleaners, degreasers, floor strippers, and car washes.

SIPONATE DDB 40:
Sodium Dodecyl Benzene Sulfonate
% Activity: 40
Form: Liquid
High foaming surfactant base for the preparation of liquid dishwashes, general purpose cleaners, degreasers, and heavy duty detergents.

SIPONATE DDB 60T:
TEA-Dodecyl Benzene Sulfonate
% Activity: 60
Form: Liquid
Surfactant base for the preparation of high foaming liquid dishwashes, car washes, and light duty cleaners. Also used in shampoo, bubble bath, and hand cleaner formulations.

SIPONATE DS-4:
Sodium Dodecyl Benzene Sulfonate
% Activity: 23
Form: Liquid
Emulsifier widely used in the polymerization of styrene/butadiene, vinyl chloride and acrylic polymers. FDA approved for use in fruit and vegetable washes.

SIPONATE LDS-10:
Sodium Dodecyl Benzene Sulfonate
% Activity: 98
Form: Flake
Concentrated high purity flake form of Sodium DDBSA. Used in the formulation of light duty and heavy duty detergents. Especially useful in powdered cleaners and scours. Linear molecule offers high biodegradability.

SIPONATE 330:
Amine Salt, Alkyl Benzene Sulfonate
% Activity: 90
Form: Liquid
Unique specialty surfactant developed to solubilize and disperse heavy greases and oils. Uses include automotive engine degreasers, metal cleaners, oil spill cleanups, and heavy duty emulsification. Excellent emulsifier for agricultural formulations.

ALCOLAC: SIPONATE Alkyl Aryl Sulfonates and Alpha Olefin Sulfonates (Continued):

Alpha Olefin Sulfonates:

SIPONATE A246L:
Sodium C14-16 Olefin Sulfonate
% Activity: 40
Form: Liquid
High foaming technical grade detergent and emulsifier for use in shampoos, bubble baths, liquid handsoaps, dishwashes, car washes, pet shampoos and general purpose cleaners.

SIPONATE A246LX:
Sodium C14-16 Olefin Sulfonate
% Activity: 40
Form: Liquid
Cosmetic grade surfactant base for preparation of high foaming shampoo, handsoap, and light duty detergent systems. Displays excellent stability over wide pH ranges.

SIPONATE 301-10F:
Sodium C14-16 Olefin Sulfonate
% Activity: 98
Form: Flake
SIPONATE 301-10P:
Sodium C14-16 Olefin Sulfonate
% Activity: 98
Form: Powder
Concentrated dry detergent. Especially useful for powdered shampoo, bubble bath, handsoap, fine fabric cleaners, and general purpose cleaners.

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants:

SIPONIC E Series:
Cetyl/Stearyl Alcohol Ethoxylates:

SIPONIC E-2:
Ceteareth 4
Mole Of Ethylene Oxide: 4
HLB: 8.0
% Activity: 100
SIPONIC E-3:
Ceteareth 6
Mole of Ethylene Oxide: 6
HLB: 10.1
% Activity: 100
SIPONIC E-5:
Ceteareth 10
Mole of Ethylene Oxide: 10
HLB: 12.4
% Activity: 100
SIPONIC E-7:
Ceteareth 15
Mole of Ethylene Oxide: 15
HLB: 14.3
% Activity: 100
SIPONIC E-10:
Ceteareth 20
Mole of Ethylene Oxide: 20
HLB: 15.3
% Activity: 100
SIPONIC E-15:
Ceteareth 30
Mole of Ethylene Oxide: 30
HLB: 16.9
% Activity: 100

Primary emulsifiers and emulsion stabilizers for cosmetic creams, lotions, creme rinse conditioners, depilatories, and hair relaxer treatments. Extremely stable over wide pH ranges and compatible with both anionic and nonionic surfactants and highly recative oxidizing and reducing agents. Also used as leveling agents and dyeing assistants in textile applications and as emulsion polymerization surfactants, usually in combination with anionics.

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants (Continued):

SIPONIC F Series:
Octylphenol Ethoxylates:

SIPONIC F-90:
Octoxynol 9
Mole of Ethylene Oxide: 9
HLB: 13.5
% Activity: 100
SIPONIC F-160:
Octoxynol 16
Mole of Ethylene Oxide: 16
HLB: 15.8
% Activity: 100
SIPONIC F-300:
Octoxynol 30
Mole of Ethylene Oxide: 30
HLB: 17.3
% Activity: 70
SIPONIC F-400:
Octoxynol 40
Mole of Ethylene Oxide: 40
HLB: 17.9
% Activity: 70
SIPONIC F-707:
Octoxynol 70
Mole of Ethylene Oxide: 70
HLB: 18.7
% Activity: 70
Stabilizers in emulsion polymerization of vinyl and acrylic latices. Wetting agents, dispersants, detergents, and emulsifiers in industrial and household cleaner applications. Also used as emulsifiers for herbicides and insecticides.

SIPONIC Y-500-70:
Oleyl Alcohol Ethoxylate
Oleth 25
Mole of Ethylene Oxide: 25
HLB: 16.1
% Activity: 70
Emulsifier and stabilizer for cosmetic creams, lotions, and hair care treatments. Wetting agent and emulsifier for emulsion polymerization and industrial applications.

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants (Continued):

SIPONIC L Series:
Alcohol Ethoxylates:

SIPONIC L-4:
Laureth 4
Mole of Ethylene Oxide: 4
HLB: 9.7
% Activity: 100
SIPONIC L-7-90:
Laureth 7
Mole of Ethylene Oxide: 7
HLB: 12.1
% Activity: 90
SIPONIC L-12:
Laureth 12
Mole of Ethylene Oxide: 12
HLB: 14.5
% Activity: 100
SIPONIC L-25:
Laureth 23
Mole of Ethylene Oxide: 23
HLB: 16.9
% Activity: 100
Coupling agents, solubilizers, and emulsion stabilizers for cosmetic and hair care systems. Used in combination with anionic surfactants for emulsion polymerization applications. Excellent ingredients for coning and textile spin finishes.

Tertiary Thio Ethoxylates:

SIPONIC 260:
Alkyl Mercaptan Ethoxylate
Mole of Ethylene Oxide: 6
HLB: 11.0
% Activity: 100
SIPONIC SK:
Alkyl Mercaptan Ethoxylate
Mole of Ethylene Oxide: 8
HLB: 12.7
% Activity: 100
SIPONIC 218:
Alkyl Mercaptan Ethoxylate
Mole of Ethylene Oxide: 10
HLB: 13.9
% Activity: 100
Exceptional wetting agents and surfactants. Functional over wide pH ranges, temperatures and water hardnesses. Outstanding detergents for metal cleaning and household and industrial cleaners/scours and degreasers. Excellent emulsifiers for herbicides and insecticides.

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants (Continued):

SIPONIC TD Series:
Tridecyl Alcohol Ethoxylates:

SIPONIC TD-3:
Trideceth 3
Mole of Ethylene Oxide: 3
HLB: 7.9
% Activity: 100
SIPONIC TD-6:
Trideceth 6
Mole of Ethylene Oxide: 6
HLB: 11.4
% Activity: 100
SIPONIC TD-990:
Trideceth 9
Mole of Ethylene Oxide: 9
HLB: 13.8
% Activity: 90
SIPONIC TD-12:
Trideceth 12
Mole of Ethylene Oxide: 12
HLB: 14.5
% Activity: 100
Versatile emulsifiers and emulsion stabilizers for cosmetic systems. Excellent wetting properties. Also used as detergents for metal cleaners, textile scours, household cleaners, and industrial applications.

SIPONIC NP Series:
Nonylphenol Ethoxylates:

SIPONIC NP-4:
Nonoxynol 4
Mole of Ethylene Oxide: 4
HLB: 8.9
% Activity: 100
SIPONIC NP-6:
Nonoxynol 6
Mole of Ethylene Oxide: 6
HLB: 10.9
% Activity: 100
SIPONIC NP-7:
Nonoxynol 7
Mole of Ethylene Oxide: 7
HLB: 11.7
% Activity: 100

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants (Continued):

SIPONIC NP Series (Continued):
SIPONIC NP-8:
Nonoxynol 8
Mole of Ethylene Oxide: 8
HLB: 12.3
% Activity: 100
SIPONIC NP-9:
Nonoxynol 9
Mole of Ethylene Oxide: 9
HLB: 12.9
% Activity: 100
SIPONIC NP-9.5:
Nonoxynol 9.5
Mole of Ethylene Oxide: 9.5
HLB: 13.2
% Activity: 100
SIPONIC NP-10:
Nonoxynol 10
Mole of Ethylene Oxide: 10
HLB: 13.6
% Activity: 100
SIPONIC NP-13:
Nonoxynol 13
Mole of Ethylene Oxide: 13
HLB: 14.4
% Activity: 100
SIPONIC NP-15:
Nonoxynol 15
Mole of Ethylene Oxide: 15
HLB: 15.1
% Activity: 100
SIPONIC NP-40:
Nonoxynol 40
Mole of Ethylene Oxide: 40
HLB: 17.8
% Activity: 100
SIPONIC NP-407:
Nonoxynol 40
Mole of Ethylene Oxide: 40
HLB: 17.8
% Activity: 70
SIPONIC NP-707:
Nonoxynol 70
Mole of Ethylene Oxide: 70
HLB: 18.6
% Activity: 70

Primary emulsifiers for a wide variety of personal care, household and industrial formulations. Excellent detergents and wetting agents for heavy duty and light duty cleaner systems. Function as dispersants, solubilizers, couplers, and co-emulsifiers for specialty cosmetic and industrial applications. Also used as primary and auxiliary surfactants for emulsion polymerization.

ALCOLAC: SIPONIC Alkoxylated Nonionic Surfactants (Continued):

SIPONIC NP Series:

Linear Alcohol Ethoxylates:

SIPONIC 25-3:
POE (3) C12 C15
Mole of Ethylene Oxide: 3
HLB: 7.9
% Activity: 100

SIPONIC 25-7:
POE (7) C12 C15
Mole of Ethylene Oxide: 7
HLB: 12.2
% Activity: 100

SIPONIC 25-9:
POE (9) C12 C15
Mole of Ethylene Oxide: 9
HLB: 13.3
% Activity: 100

SIPONIC 91-6:
POE (6) C9 C11
Mole of Ethylene Oxide: 6
HLB: 12.5
% Activity: 100
Biodegradable detergents, wetting agents, and emulsifiers for household and industrial cleaners. Excellent couplers and solubilizing agents for perfumes and organic additives.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants:

Diester Sulfosuccinates:

TR-70:
Sodium bistridecyl sulfosuccinate
Anionic/70% Liquid in water & alcohol
Biodegradability: Complete
Flash Point, F: 77
Surface Tension in Water (minimum) dynes/cm: 27
FDA Approvals 21 CFR: 178.3400
High oil solubility with limited water solubility. Surfactant for emulsion polymerization. Dispersant for pigments, dyes and polymers in hydrocarbon and other organic solvents.

OT-75:
Sodium dioctyl sulfosuccinate
Anionic/75% Liquid in water & alcohol
Biodegradability: Complete
Flash Point, F: 105
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
Superior wetting and rewetting agent for increasing absorbency and penetration. Emulsifying agent, dewatering aid, surface tension reducer and surface property modifier. Surfactant for emulsion polymerization.

GPG:
Sodium dioctyl sulfosuccinate
Anionic/70% Liquid in water & alcohol
Biodegradability: Complete
Flash Point, F: 103
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
General purpose grade of AEROSOL OT for dust control, general wetting, emulsification and dispersion.

OT-70-PG:
Sodium dioctyl sulfosuccinate
Type & Form: Anionic/70% Liquid in propylene glycol & water
Biodegradability: Complete
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
AEROSOL OT in propylene glycol and water. Designed as a very high flash point wetting agent and emulsifier. Features/Benefits-same as AEROSOL OT-75.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Diester Sulfosuccinates (Continued):

OT-100:
Sodium dioctyl sulfosuccinate
Anionic/100% Waxy Solid
Biodegradability: Complete
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
Waxy solid form of AEROSOL OT. Used for emulsification, dispersion, lubricating, wetting and water displacement. Excellent mold release properties. Surface active agent for water-free systems.

OT-B:
Sodium dioctyl sulfosuccinate
Anionic/85% active Powder/15% sodium benzoate
Biodegradability: Complete
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
Adjuvant for agricultural chemical wettable powders. Instantaneously soluble in water. Dispersing, wetting, solubilizing agent, for improved color value, penetrant, surface tension reducer. Pigment dispersing agent in plastics.

OT-S:
Sodium dioctyl sulfosuccinate
Anionic/70% Liquid in light petroleum distillate
Biodegradability: Complete
Flash Point, F: 134
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
Solution of AEROSOL OT in high purity petroleum distillate. Excellent wetting and lubricating agent. Superior detergent for oily stains. For use in organic solvent systems.

OT-MSO:
Sodium dioctyl sulfosuccinate
Anionic/62% Liquid in mineral seal oil
Biodegradability: Complete
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 26
FDA Approvals 21 CFR: 178.3400
Features/Benefits: Same use as OT-S when a higher flash point is required.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Diester Sulfosuccinates (Continued):

MA-80:
Sodium dihexyl sulfosuccinate
Anionic/80% Liquid in water & alcohol
Biodegradability: Slowly
Flash Point, F: 115
Surface Tension in Water (minimum) dynes/cm: 28
FDA Approvals 21 CFR: 178.3400
Penetrating agent, emulsifier, dispersing and solubilizing agent. Superior emulsifier for styrene-butadiene emulsion polymerization. High salt tolerance.

A-196-85:
Sodium dicyclohexyl sulfosuccinate
Anionic/85% Pellets in water
Biodegradability: Complete
Surface Tension in Water (minimum) dynes/cm: 39
FDA Approvals 21 CFR: 178.3400
For use in modified styrene butadiene emulsion polymerization. Imparts high surface tension, high CMC, promotes adhesion and reduces film water sensitivity properties.

A-196-40:
Sodium dicyclohexyl sulfosuccinate
Anionic/40% in water
Biodegradability: Complete
Flash Point, F: >200
Surface Tension in Water (minimum) dymes/cm: 39
FDA Approvals 21 CFR: 178.3400
Solution form of AEROSOL A-196. Features/Benefits - same as AEROSOL A-196.

AY-65:
Sodium diamyl sulfosuccinate
Anionic/65% Liquid in water & alcohol
Biodegradability: Complete
Flash Point, F: 77
Surface Tension in Water (minimum) dynes/cm: 30
FDA Approvals 21 CFR: 178.3400
Wetting and dispersing agent. Water soluble. High electrolyte compatibility. Surfactant for emulsion polymerization.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Diester Sulfosuccinates (Continued):

AY-100:
Sodium diamyl sulfosuccinate
Anionic/100% Waxy Solid
Biodegradability: Complete
Surface Tension in Water (minimum) dynes/cm: 30
FDA Approvals 21 CFR: 178.3400
Solid version of AEROSOL AY. Features/Benefits - same as AEROSOL AY-65. Used in water-free systems.

IB-45:
Sodium diisobutyl sulfosuccinate
Anionic/45% Liquid in water
Biodegradability: Complete
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 42
FDA Approvals 21 CFR: 178.3400
Surfactant/stabilizer in the emulsion polymerization of styrene-butadiene. Extremely hydrophilic, excellent electrolyte compatibility and dispersing properties.

Alkylamine-Guanidine Ethoxylate:

C-61:
Alkylamine-guanidine polyoxyethanol
Cationic/70% Liquid Paste
Biodegradability: Partially
Flash Point, F: 94
Surface Tension in Water (minimum) dynes/cm: 40
Pigment dispersant, flushing agent, wetting agent in plastics, paper, textiles and adhesive applications.

Mono-Ester Sulfosuccinates:

A-102:
Disodium ethoxylated alcohol half ester of sulfosuccinic acid
Anionic/31% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 33
FDA Approvals 21 CFR: 175.105
Solubilizer, foaming agent, dispersant, emulsifier and surface tension reducer. High electrolyte tolerance. Generates small particle size vinyl acetate and acrylic polymer emulsions.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Mono-Ester Sulfosuccinates (Continued):

A-103:
Disodium ethoxylated nonyl phenol half ester of sulfosuccinic acid.
Anionic/34% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 34
FDA Approvals 21 CFR: 175.105
Emulsifier, dispersant, foamer, solubilizer, limesoap dispersant, surface tension reducer. Compatible with divalent and trivalent cations.

A-268:
Disodium isodecyl sulfosuccinate
Anionic/50% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 28
FDA Approvals 21 CFR: Petition Submitted
Emulsifier for emulsion and suspension polymerization of vinyl chloride, vinylidene chloride and co-monomers. Reduces yellowing of polymer when exposed to heat.

501:
Proprietary composite (U.S. Patent 3,947,400)
Anionic/50% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 28
FDA Approvals 21 CFR: Petition Submitted
Emulsifier for generation of small particle size vinyl acetate and acrylic polymer emulsions.

Sulfosuccinamates:

18:
Disodium N-octadecyl sulfosuccinamate
Anionic/35% Paste in water
Biodegradability: Complete
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 39
FDA Approvals 21 CFR: 176.170 & 176.180 with limitations
Foaming agent for latex. Emulsifier, dispersant, detergent.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Sulfosuccinamates (Continued):

22:
Tetrasodium N-(1,2-dicarboxy-ethyl)-N-octadecyl sulfosuccinamate
Anionic/35% Liquid in water and alcohol
Biodagradability: Complete
Flash Point, F: 143
Surface Tension in Water (minimum) dynes/cm: 41
FDA Approvals 21 CFR: 178.3400 & 176.170 with limitations 175.105
Emulsifier, dispersant, and hydrotrope/solubilizer. Excellent salt tolerance and solubilizing power. Surfactant for emulsion polymerization of vinyl chloride and modified styrene-butadiene systems.

Nonyl Phenol Ether Sulfates:

NPES 458:
Ammonium salt of sulfated nonylphenoxy poly (ethyleneoxy) ethanol
Anionic/58% Liquid in alcohol & water
Flash Point, F: 83
Surface Tension in Water (minimum) dynes/cm: 31
FDA Approvals 21 CFR: 178.3400
Surfactant for the emulsion polymerization of acrylic, styrene and vinyl acetate systems. High foaming surfactant for use in detergent, germicidal and textile applications.

NPES 930:
Ammonium salt of sulfated nonylphenoxy poly (ethyleneoxy) ethanol
Anionic/30% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 33
FDA Approvals 21 CFR: 175.105/176.180
Emulsifier for the generation of very fine particle size vinyl acetate, acrylic and styrene-acrylic latexes. Resulting films have superior water-resistant properties.

NPES 2030:
Ammonium salt of sulfated nonylphenoxy poly (ethyleneoxy) ethanol
Anionic/30% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 43
Features/Benefits: Same as AEROSOL NPES 930.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants (Continued):

Nonyl Phenol Ether Sulfates (Continued):

NPES 3030:
Ammonium salt of sulfated nonylphenoxy poly (ethyleneoxy) ethanol
Anionic/30% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 43
FDA Approvals 21 CFR: 175.105/176.180
Highly hydrophilic version of AEROSOL NPES 2030. Primary surfactant for emulsion polymerization of acrylic, vinyl acetate and styrene-acrylic systems. Very fine particle size emulsions. Forms films with superior water-resistance.

Dodecyl Diphenyl Oxide Sulfonate:
DPOS-45:
Disodium mono- & didodecyl diphenyl oxide disulfonate
Anionic/45% Liquid in water
Flash Point, F: >200
Surface Tension in Water (minimum) dynes/cm: 34
FDA Approvals 21 CFR: 178.3400
Emulsifying, dispersing and solubilizing agent exhibiting high electrolyte tolerance. Primary surfactant for emulsion polymerization systems. Resulting latexes have excellent mechanical and thermal stability. Extremely effective coupling agent.

Alkyl Naphthalene Oxide Sulfonate:
OS:
Sodium diisopropyl naphthalene sulfonate
Anionic/75% active powder
Biodegradability: Slowly
Surface Tension in Water (minimum) dynes/cm: 35
FDA Approvals 21 CFR: 175.105
Stable wetting and dispersing agent in relatively high concentrations of acids and alkali. Adjuvant in agricultural chemical products.

Naphthalene Formaldehyde Condensate:
NS:
Sodium neutralized condensed naphthalene sulfonic acid
Anionic/87% active powder
Biodegradability: Slowly
Surface Tension in Water (minimum) dynes/cm: 72
FDA Approvals 21 CFR: 175.105/176.170/176.180
Highly effective dispersant for pigments, extenders and fillers in aqueous media over a broad pH range.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants: Commercial Uses:

TR-70:

Polymer Areas: Suspension polymerization, particle size control; stabilizes surface tesnion of latexes. Modifies latex surface active properties. Polymer can be easily recovered.

Non-Polymer Areas: Dispersing agent for resins, pigments, polymers and dyes in organic systems. Used for preparation of printing inks and rust inhibitors. Dispersing dyes and pigments into plastics. Highly hydrophobic wetting agent.

OT-75:

Polymer Areas: Emulsion and suspension polymerization. Latexes for paint, textile and adhesive applications.

Non-Polymer Areas: Wetting agent for virtually all industries: textile, paper, petroleum, rubber, metal, paint, plastic, cosmetic, agricultural, mining and detergent compounding.

GPG:

Polymer Areas: General purpose grade of AEROSOL OT surfactant.

Non-Polymer Areas: Used by a variety of industries for application in wetting, spraying, fire fighting, dust control, emulsion lubricants and coolants, degreasing, dry cleaning, etc.

OT-70-PG:

Polymer Areas: A high flash point form of AEROSOL OT surfactant.

Non-Polymer Areas: Same uses as for AEROSOL OT-75 surfactant when higher flash point is required. Compatible in paint formulations.

OT-100:

Polymer Areas: Mold release for poly(methyl methacrylate). Paint formulations, dispersing dyes and pigments in plastics, such as polyethylene and polypropylene.

Non-Polymer Areas: Used in solvent and non-aqueous systems. Paints, rust inhibitors and lubricants. Wetting and antistat agent for polyethylene. Adjuvant for agricultural chemical applications.

OT-B:

Polymer Areas: Dispersing pigments and dyes in polyethylene, polypropylene and other plastics.

Non-Polymer Areas: Adjuvant for the preparation of wettable and dispersible agricultural chemical powders.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants: Commercial Uses (Continued):

OT-S:
Polymer Areas: An organic solution of AEROSOL OT surfactant for incorporation into plastics, organosols, lacquers, varnishes and all organic media.
Non-Polymer Areas: Designed for instant solubility in all organic systems, such as dry cleaning solvents, pre-wash spotters, rust inhibitors, degreasers and lubricants.

OT-MSO:
Polymer Areas: High flash point form of AEROSOL OT-S surfactant.
Non-Polymer Areas: Same uses as AEROSOL OT-S surfactant when higher flash point is required.

MA-80:
Polymer Areas: Emulsion polymerization. Effective in all monomer systems, especially styrene-butadiene. Yields complete conversion, coagulum-free latexes. Imparts good adhesion on porous substrates. Polymer can be easily recovered.
Non-Polymer Areas: Wetting agent for battery separators, strong electrolyte solutions, electroplating and leaching operations. Excellent calcium and salt tolerance.

A-196-40:
Polymer Areas: Unsurpassed for manufacturing styrene-butadiene latexes. Imparts excellent water resistance and adhesion. Produces high surface tension latexes with good mechanical stability.
Non-Polymer Areas: Excellent low foaming surfactant.

A-196-85:
Polymer Areas: Pellet form of AEROSOL A-196. Same uses as AEROSOL A-196-40 surfactant.
Non-Polymer Areas: Same use as AEROSOL A-196-40 surfactant.

AY-65:
Polymer Areas: Surfactant for emulsion polymerization systems, especially where polymer recovery is desirable.
Non-Polymer Areas: Extremely effective wetting agent in concentrated salt solution. Leaching, electroplating, wetting and dispersing agent. Adjuvant for agricultural chemical applications.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants: Commercial Uses (Continued):

AY-100:
Polymer Areas: Solid form of AEROSOL AY-65. Same uses as AEROSOL AY-65 surfactant.
Non-Polymer Areas: Used where the presence of water is not desirable.

IB-45:
Polymer Areas: Emulsion polymerization and stabilization of styrene, styrene-butadiene and other styrene or butadiene-based systems.
Non-Polymer Areas: Extremely stable in concentrated electrolyte solutions for leaching, wetting, electroplating and dispersing. Highly hydrophilic surfactant.

C-61:
Polymer Areas: Antistat and dispersant for pigments, dyes and fillers.
Non-Polymer Areas: Cationic dispersing and fixing agent for pigments, dyes, fillers. Emulsifying agent used alone or with AEROSOL OT surfactant. Softening agent for textiles. Excellent acid and base stability. Used in acid cleaner formulations.

A-102:
Polymer Areas: For preparation of vinyl acetate and acrylic latexes, especially cross-linkable types. Used with N-methylolacrylamide without detracting from cross-linking properties. Effective as post stabilizer. Generates small particle size emulsions.
Non-Polymer Areas: Germicidal cleaners, cosmetics and shampoos. Foaming cement, wallboard and adhesives. Good tolerance for cationic surfactants and polyvalent cations.

A-103:
Polymer Areas: For preparation of vinyl acetate and acrylic latexes. Imparts small particle size emulsions with good film clarity. Can be used with AEROSOL 22, MA-80, A-102, or NPES series to modify particle size. Effective as a post additive stabilizer.
Non-polymer Areas: Germicidal cleaners, cosmetics and shampoos. Foaming cement, wallboard and adhesives. Good tolerance for cationic surfactants and polyvalent cations.

A-268:
Polymer Areas: For emulsion and suspension polymerization of poly(vinyl chloride) and poly(vinylidene chloride). Excellent heat stability of polymer is unique feature.
Non-Polymer Areas: Emulsifier for various systems.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants: Commmercial Uses (Continued):

501:
Polymer Areas: Excellent for acrylic polymerizations at low surfactant use levels. Particle size of polymer in latex is controlled during polymerization when used in conjunction with other AEROSOL surfactants. Yields high solids, low viscosity latexes.
Non-Polymer Areas: Paints, textiles, paper uses.

18:
Polymer Areas: Imparts excellent rheological to pigmented latexes. Used in emulsion and suspension polymerizations. Especially effective for polymerization of vinyl chloride. Foams latexes and plastics.
Non-Polymer Areas: Foamed insulation, carpet backing, cement, wallboard, resins, etc. Cleaning, washing and lubrication. Excellent stability in acid and alkaline solutions.

22:
Polymer Areas: Imparts small particle size for all latex systems except vinyl acetate. Especially effective surfactants for preparing vinyl chloride emulsions or dispersions. Excellent as post-additive for mechanical stabilization. Imparts excellent rheological properties to pigmented latexes.
Non-Polymer Areas: Agricultural products, industrial and household cleaners, metal cleaners. Excellent solubilizing agent for soaps and other surfactants in soluble salt solutions. Excellent lime soap dispersant.

NPES 458:
Polymer Areas: Emulsion polymerization of vinyl acetate, acrylic, and styrene-acrylic systems. Very small particle size emulsions with excellent wet adhesion properties.
Non-Polymer Areas: Detergent and textile scouring agent. Used in iodine-based germicidal cleaners.

NPES 930:
Polymer Areas: For the preparation of very fine particle size vinyl acetate, acrylic and styrene-acrylic latexes. Superior emulsifier for Zn-crosslinking latexes for floor finishes. Extremely low surfactant use levels that result in superior water-resistant and wet adhesion properties.
Non-Polymer Areas: Detergent/surfactant/emulsifier applications.

AMERICAN CYANAMID CO.: AEROSOL Performance Surfactants: Commercial Uses (Continued):

NPES 2030:
Polymer Areas: Very fine particle size vinyl acetate, acrylic and styrene-acrylic latexes. Superior emulsifier for Zn-crosslinking latexes for floor finish formulations. Extremely low surfactant use levels. Excellent water-resistant properties.
Non-Polymer Areas: Detergent/surfactant/emulsifier applications.

NPES 3030:
Polymer Areas: Primary emulsifier for acrylic, vinyl acetate and styrene-acrylic latexes. Very fine particle size emulsions with excellent water-resistant properties.
Non-Polymer Areas: Detergent/surfactant/emulsifier applications.

DPOS-45:
Polymer Areas: Emulsion polymerization. Effective in styrene-butadiene, poly(vinyl chloride), poly(vinyl acetate), acrylic, and styrene-acrylic latexes. Imparts excellent mechanical, thermal and electrolyte stability, low coagulum and small particle latexes.
Non-Polymer Areas: Exhibits high electrolyte tolerance in cleaning and agricultural formulations. Efficient as a dye-leveling agent. Possesses ability as a coupling agent and is effective as a lime soap dispersant. Extremely stable in both highly acidic and alkaline solutions and at elevated temperatures.

OS:
Polymer Areas: Dispersing pigments and dyes in paints and plastics. Surfactant for emulsion polymerization and additive to latexes.
Non-Polymer Areas: Agricultural wettable and dispersible powders. Metal cleaning, bottle washing, paint stripper, brick and tile cleaning, pickling, acid etching agents and hard surface cleaners. Excellent acid and base stability.

NS:
Polymer Areas: Viscosity suppressant for cold styrene-butadiene rubber processes. Useful in elimination of pre-coagulated polymers.
Non-Polymer Areas: Dispersant for use in paper, pulp, gypsum board, printing inks, rubber, minerals and textiles.

AMERICAN LECITHIN CO.: ALCOLEC De-Oiled Lecithin: ALCOLEC Granules/ALCOLEC F-100 Powder/ALCOLEC FF-100 Fine Powder:

American Lecithin Company's high grade, unmodified, de-oiled Lecithins come in three types of granulation. These granules/powders are slightly yellow-tan in color. They contain a high level of natural, functional Lecithin Phospholipids. These products conform to the Food Chemicals Codex.

ALCOLEC Granules:
Granules
Acetone Insolubles: 95% Minimum
Acid Value: 36 Maximum
Color: Light Tan/Yellow
Moisture: 1% Maximum
Oil Content: 2% Maximum
Hexane Insolubles: 0.02% Maximum
Polyunsaturate/Saturate Ratio: 3.0

ALCOLEC F-100:
Powder
Acetone Insolubles: 95% Minimum
Acid Value: 36 Maximum
Color: Light Tan/Yellow
Moisture: 1% Maximum
Oil Content: 2% Maximum
Hexane Insoluble: 0.02% Maximum
Polyunsaturate/Saturate Ratio: 3.0

ALCOLEC FF-100:
Fine Powder
Acetone Insolubles: 95% Minimum
Acid Value: 36 Maximum
Color: Light Tan/Yellow
Moisture: 1% Maximum
Oil Content: 2% Maximum
Hexane Insolubles: 0.02% Maximum
Polyunsaturate/Saturate Ratio: 3.0

ALCOLEC Granules and ALCOLEC F-100 are available with or without Tricalcium Phosphate added as an Anti-Caking Agent.

Characteristics/Uses:
ALCOLEC granular/powdered Soybean Lecithins are suitable for foods as well as industrial applications. These products are highly concentrated in the natural Phospholipid components of Soybean Lecithin. Thse products have a bland odor and taste.
Major Functionalities Are:
* Instantizing for milk powder, cocoa beverage powders, dessert powders, protein powders, gravy mixes, etc. Recommended usage levels range from 0.2%-0.9%.
* Emulsifying Agent
* Choline Source

AMERICAN LECITHIN CO.: ALCOLEC Fluid Lecithin: ALCOLEC S-Unbleached/ALCOLEC BS-Single Bleached:

ALCOLEC S:
Fluid
Acetone Insolubles: 62% Minimum
Hexane Insolubles: 0.1% Maximum
Moisture: 1% Maximum
Oil Content: 38% Maximum
Acid Value: 32 Maximum
Polyunsaturated/Saturated Ratio: 3.8
Color (Gardner Undiluted)

ALCOLEC BS:
Fluid
Acetone Insolubles: 62% Minimum
Hexane Insolubles: 0.1% Maximum
Moisture: 1% Maximum
Oil Content: 38% Maximum
Acid Value: 32 Maximum
Polyunsaturated/Saturated Ratio: 3.8
Color (Gardner Undiluted): 14

Characteristics/Uses: ALCOLEC S and ALCOLEC BS are natural Soybean Lecithin products suitable for use in foods as well as for industrial purposes. Both products have multi-functional properties:
Major Functionalities Are:
* Dispersing, Wetting, Emulsifying and Stabilizing Agent
* Release and Lubricating Agent
* Foam Suppressant
* Solubilizing Agent
* Emulsifier
* Choline Source

ALCOLEC PG Lecithin:
ALCOLEC PG is a virtually oil free Lecithin granule. It contains the highest percentage of naturally occurring Phospholipids (minimum 97% A.I.). Special processing techniques have also been incorporated to improve the purity by minimizing the residual impurities (Hexane Insolubles).

Granular
Acetone Insolubles: 97% Minimum
Hexane Insolubles: 0.01%
Moisture: 1% Maximum

ALCOLEC PG is a slightly yellow, waxy substance containing about 2% residual soybean oil. ALCOLEC PG is a food grade product.
Major Functionalities Are:
* Emulsifier/Moisturizer in Cosmetics and Soaps
* Wetting Agent in Magnetic Tape Media

AMERICAN LECITHIN CO.: ALCOLEC 439-C Lecithin:

ALCOLEC 439-C is a specially formulated fluid Lecithin. Regular commercial grades of fluid Soybean Lecithin are normally solvent and oil soluble. The addition of specially selected surfactants significantly increases its water dispersability.

Fluid
Acetone Insolubles: 50 Minimum
Acid Value: 30 Maximum
Moisture: 1% Maximum
Hexane Insolubles: 0.10% Maximum

Characteristics/Uses:
ALCOLEC 439-C is 100% active, developed primarily for paints, coatings and textile applications.
Major Functionalities Are:
* Paints/Coatings - ALCOLEC 439-C is compatible with other surfactants and emulsifiers.
* Textiles - ALCOLEC 439-C is a superior emulsifier in sizings when added at recommended usage levels of 0.3% to 0.5%.

ALCOLEC 440 WD:
ALCOLEC 440 WD is a soy based Lecithin, specially formulated with selected surfactants to improve its water dispersability in water based paints and coatings.

Fluid
Acetone Insolubles: 50% Minimum
Color (Gardner Undiluted): 14
Acid Value: 1.0 MG KOH/G
Viscosity (cP 25C): 10,000

Characteristics/Uses:
ALCOLEC 440 WD has been specifically formulated to function independently or synergistically with other surfactant combinations. Typical usage level is 1 to 3% of total pigment weight.

Major Functionalities:
* Facilitates pigment dispersion in water based paints and coatings
* Functions as an emulsifier, viscosity control agent, pigment grinding aid
* Promotes rapid redispersion after extended storage

BURLINGTON CHEMICAL CO., INC.: Surfactants:

BURCO Anionic APS:
Hypochlorite Stable Surfactant

Molecular weight: 600
% Solids: 35
Clear liquid
Viscosity: 270 cps @ 25C
pH: 6.5-7.5
Ross Miles Foam: Initial: 160 mm/5 min: 60 mm
Class: Ethoxylated sulfonate
Sp. Gr.: 1.06

Features:
* Excellent hard water tolerance
* Stable over entire pH range
* Complete biodegradability
* Oxidative stability in hypochlorite
* Good emulsifying
* Mild and non-toxic, moderate foamer
* USDA approved for dairy cleaners

BURCO DFE-45:
Defoaming Emulsifier

BURCO DFE-45 is a water dispersible polyol ester that is a versatile emulsifier and an effective organic defoamer.

Appearance @ 25C: Amber liquid
Specific Gravity: 0.94
pH (5% dispersion): 5

BURCO EHS:
Sodium 2-Ethylhexyl Sulfate

Cloud Point: 5C Max.
pH, 10% Soln: 7.0-10.0
Clear amber liquid
HLB: 42
Solids: 43-46% by wgt
Wgt/gal: 9.2

BURCO EHS has excellent solubility and outstanding wetting properties and recommended for use in high pH and high temperature conditions. It remains stable in high concentrations of caustic soda. It is FDA approved as an assist in the washing and peeling of fruits and vegetables. It effectively removes field soil, micro-organisms, insects and pesticide residues. Stable in acids also.

BURLINGTON CHEMICAL CO., INC.: Surfactants (Continued):

BURCO HCS-50NF:
Alkaline Stable Surfactant

BURCO HCS-50NF is a highly alkaline stable surfactant designed for use in formulating concentrated liquid alkaline detergents. It is freely soluble in 50% caustic soda and high levels of other alkaline builders.

Clear liquid
Specific Gravity: 1.15
pH (1% aqueous): 6.5
% Activity: 50

BURCO LAF-DW:
Low foam surfactant for formulating mechanical dishwash detergents. It provides:
* Excellent defoaming properties
* Excellent wetting and sheeting properties
* Excellent formula stability

Clear to slightly hazy liquid
Specific gravity: 1.01
pH (1%): 7
Cloud Point, C, 1% aqueous: 20
% Activity: Essentially 100%

BURCO LAF-6:
Primary Aliphatic Alcohol Alkoxylate

A nonionic, biodegradable, low foaming surfactant for use in rinse aid formulations. It exhibits excellent rinsability and good wetting. Also used in automatic dishwash formulations. Designed to produce low foam levels at low temperatures while still offering excellent detergency.

Clear liquid pale yellow
Activity: 100%
pH (5% soln): 6-8
Cloud Point: 37C
Flash Point: Over 300F
Sp. Gravity @ 25C: 0.99
Water (% Max.): 0.5

BURLINGTON CHEMICAL CO., INC.: Surfactants (Continued):

BURCO LAF-125:
Low Foam Surfactant/Nonionic

BURCO LAF-125 is a low cloud point linear alcohol alkoxylate used in formulations where low foaming detergents are required. It can be used to formulate rinse aids, high pressure spray cleaners, metal lubricants, textile jet scours and other low foaming products.

Specific Gravity at 25/25C: 1.04
pH (1% aqueous): 6
Draves Wetting (0.1% aqueous): 13 seconds
Color (Gardner): 1 Maximum
Acid Value: 1 Maximum
Cloud Point (1% aqueous) C: 10-16
% Water: 1 Maximum
Activity: 100%

BURCO NCS-80:
Detergent Intermediate

BURCO NCS-80 is a nonionic/cationic surfactant blend designed for use in formulating mildly alkaline cleaners for use as vehicle cleaners, floor cleaners or other cleaners where particulate soils or a mixture of particulate soils with oily soils are to be cleaned. BURCO NCS-80 is easy to use. It requires no hydrotropes and can be dissolved directly into built detergent formulations.

Amber liquid
pH (5% aqueous): 6
Specific Gravity: 1.04
Cloud Point (1% aqueous): >100C

BURCO NPS-225:
Nonionic Alkyl Polyglycoside Surfactant

Viscous brown liquid
Activity: 70% by weight
pH, 1% soln: 5-7
Density: 9.7 lb/gal
HLB: 13-14
Specific Gravity: 1.17 gms/ml
Pour Point: 20F
Flash Point: >200F
Solubility: Water soluble in all proportions
Viscosity: 4500 cps

BURLINGTON CHEMICAL CO., INC.: Surfactants (Continued):

BURCO TME:
Nonionic Thioether Surfactant

BURCO TME is a thioether surfactant used to formulate cleaners for use in aqueous cleaning systems. It can easily be formulated into neutral, mildly alkaline and highly alkaline formulations. With proper cosurfactants, BURCO TME can also be used to prepare microemulsions of water insoluble solvents.

When formulated into cleaner formulations BURCO TME provides:

* Excellent particulate and carbonaceous soil detergency.
* Highly efficient oil splitting.
* Excellent additive responses with other surfactants and builders.
* Moderate foam levels that can be either defoamed or stabilized with other additives.

Clear yellow liquid
Odor: Mild, grapefruit-like
Specific Gravity: 1.07
Flash Point, F (TCC): 127
Viscosity, cs @ 25C: 5.7
HLB: 13.5
pH (1% aqueous): 4
Cloud Point (1% aqueous) F: 160
Activity, %: 85

BURCOFAC 1060:
Organic Phosphate Ester

BURCOFAC 1060 is an alkaline stable phosphate ester that provides multiple functions in detergent formulations.

BURCOFAC 1060 gives:

* Excellent wetting, detergency and emulsification
* Hydrotroping for other surfactants, glycol ethers and other formulation components.

Clear Liquid
Specific Gravity: 1.07
pH (1% aqueous): 2.0
Acid Value (to pH 9.5): 205
Activity: 100%

BURLINGTON CHEMICAL CO., INC.: Surfactants (Continued):

BURCOFAC 6660K:
Hydrotoping Phosphate Ester Salt
BURCOFAC 6660K is a 50% active phosphate ester that can be used to hydrotrope surfactants into alkaline detergent formulations. BURCOFAC 6660K is effective with a wide range of surfactants and can couple some surfactants into alkali concentrations as high as 20% NaOH.

Clear Liquid
Specific Gravity: 1.11
pH (5% aqueous): 8
% Solids: 50

BURCOFAC 7580:
Aromatic Phosphate Ester

Viscous, clear-slightly hazy liquid
Specific Gravity @ 25/25C: 1.05
pH (1% dispersion): 2
Color (Gardner): 4 maximum
Acid value (to pH 9.5): 75-90
% Water: 1 maximum

BURCOFAC 7580 is a versatile emulsifier for a wide variety of solvents and oils. It can be used in combination with other emulsifiers to prepare stable emulsions in mineral oils, petroleum solvents, fatty esters and triglycerides.

BURCOFAC 9125:
Organic Phosphate Ester
BURCOFAC 9125 is a phosphate ester based on a linear alcohol ethoxylate. This product is a versatile anionic surfactant that multiple performs functions in detergent formulations. It provides:

* Excellent wetting, detergency and emulsification.
* Hydrotroping for other surfactants, glycol ethers and other formulation components.

Clear Liquid
Specific Gravity: 1.08
pH (1% aqueous): 2.0
Acid Value (to pH 9.5): 285
Activity, %: 100

BURLINGTON CHEMICAL CO., INC,: Surfactants (Continued):

BURCOFAC 9125K:
Potassium Salt of Organic Phosphate Ester

BURCOFAC 9125K is an anionic surfactant that exhibits properties similar to ether sulfates. It adds wetting, detergency and foaming to detergent formulations. BURCOFAC 9125K is somewhat lower foaming than ether sulfates but has greater electrolyte compatibility. It has excellent color, essentially water white, and a low degree of yellowing.

Clear Liquid
pH (1% aqueous): 8.0
Specific Gravity: 1.12
% Solids: 52
Solubilizer Content: 7% Ethanol

BURCOQUAT TS-20:
Cationic Surfactant

BUCOQUAT TS-20 is a cationic surfactant that offers performance properties not normally found with cationic surfactants. When added to cleaner formulations, BURCOQUAT TS-20 adds detergency, hydrotroping and antistatic properties.

Amber to Reddish Brown Liquid
Specific Gravity: 1.06
pH (5% aqueous): 6
Activity, %: >96

BURCOTERGE DG-40:
Detergent Concentrate
BURCOTERGE-40 is an anionic/nonionic detergent concentrate prepared from linear alcohol derivatives. BURCOTERGE DG-40 is a unique surfactant combination that provides:

* Good wetting of hard surfaces and fabrics
* Excellent detergency and emulsification, particularly for oily soils
* Excellent performance in cold or hot systems

Clear Liquid
Specific Gravity: 1.0
pH (1% aqueous): 7
% Solids: 40
Wetting Speed at 25C (Drave Skin Test):
0.5%: Instantaneous
0.25%: 7 Seconds

CENTRAL SOYA: CENTRAL SOYA Lecithins:

Lecithin is a naturally occurring group of phospholipids which is widely recoghnized as a versatile surfactant for use in industrial applications such as magnetic media, cosmetics, wire manufacture, paint, automotive, constructiomn, plastic molding and agricultural chemicals. The primary commercial source of lecithin comes from soybeans.

Special Grade Lecithins:

CENTROLEX R:
Yellow Granule
Acetone Insoluble Min.-Max. %: 95 min.
Hexane Insoluble: .1
Moisture % 1.0
Specific Gravity: 1.1

CENTROLEX F:
Yellow Powder
Acetone Insoluble Min.-Max. %: 95 min.
Hexane Insoluble: .1
Moisture %: 1.0
Specific Gravity: 1.1

CENTROLEX D:
Fine Yellow Powder
Acetone Insoluble Min.-Max. %: 95 min.
Hexane Insoluble: .1
Moisture %: 1.5
Specific Gravity: 1.1

CENTROLEX P:
Yellow Granule
Acetone Insoluble Min.-Max.%: 97 min.
Moisture %: 1.0
Specific Gfravity: 1.1

CENTROLENE A:
Heavy Bodied Fluid
Acetone Insoluble Min.-Max. %: 58-62
Color Gardner: 11
Hexane: .1
Moisture %: 1.5
Viscosity: thick fluid
Specific Gravity: 1.03
Acid Value: 30

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Special Grade Lecithins (Continued):

CENTROLENE S:
Heavy Bodied Fluid
Acetone Insoluble Min.-Max. %: 58-62
Color Gardner: 14
Hexane Insoluble: .1
Moisture %: 1.5
Viscosity: thick fluid
Specific Gravity: 1.03
Acid Value: 38

CENTROPHIL K:
Amber Plastic
Acetone Insoluble Min.-Max.%: 75-79
Color Gardner: 13
Hexane Insoluble: .1
Moisture %: 1.5
Viscosity: plastic
Acid Value: 23

CENTROPHIL W:
Amber Fluid
Acetone Insoluble Min.-Max. %: 35-38
Color Gardner: 13
Hexane Insoluble Min.-Max.%: .02
Moisture %: 1.5
Viscosity Brookfield @ 25C cP: 150
Specific Gravity: .98
Acid Value: 14

CENTROPHIL M:
Amber Fluid
Acetone Insoluble Min.-Max. %: 35-38
Color Gardner: 14
Hexane Insoluble: .02
Moisture %: 1.5
Viscosity Brookfield @ 25C cP: 150
Specific Gravity: .98
Acid Value: 14

CENTROPHASE C:
Amber Fluid
Acetone Insoluble Min.-Max. %: 50-53
Color Gardner: 13
Hexane Insoluble: .6
Moisture %: .8
Viscosity Brookfield @ 25C cP: 1,500
Specific Gravity: .99
Acid Value: 29

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Special Grade Lecithins (Continued):

CENTROPHASE HR:
Amber Fluid
Acetone Insoluble Min.-Max. %: 53-56
Color Gardner: 13
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 3,000
Specific Gravity: .99
Acid Value: 26

CENTROPHASE HR2U:
Amber Fluid
Acetone Insoluble Min.-Max.%: 60-62
Color Gardner: 17
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 8,000
Specific Gravity: 1.03
Acid Value: 26

CENTROPHASE HR2B:
Amber Fluid
Acetone Insoluble Min.-Max.%: 60-62
Color Gardner: 14
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 8,000
Specific Gravity: 1.03
Acid Value: 26

CENTROPHASE HR3U:
Amber Fluid
Acetone Insoluble Min.-Max.%: 52-54
Color Gardner: 17
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 2,500
Specific Gravity: .99
Acid Value: 26

CENTROPHASE HR3B:
Amber Fluid
Acetone Insoluble Min.-Max. %: 52-54
Color Gardner: 14
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 2,500
Specific Gravity: .99
Acid Value: 26

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Special Grade Lecithins (Continued):

CENTROPHASE HR4U:
Heavy Bodied Fluid
Acetone Insoluble Min.-Max. %: 60-62
Color Gardner: 17
Moisture %: 1.0
Viscosity: thick fluid
Specific Gravity: .99
Acid Value: 26

CENTROPHASE HR4B:
Heavy Bodied Fluid
Acetone Insoluble Min.-Max. %: 60-62
Color Gardner: 14
Moisture %: 1.0
Viscosity: thick fluid
Specific Gravity: .99
Acid Value: 26

CENTROPHASE NV:
Amber Fluid
Acetone Insoluble Min.-Max. %: 37-41
Color Gardner: 14
Hexane Insoluble: .01
Moisture %: .8
Viscosity Brookfield @ 25C cP: 300
Specific Gravity @ 25C cP: .99
Acid Value: 23

CENTROPHASE 31:
Clear Amber Fluid
Acetone Insoluble Min.-Max.%: 58-60
Color Gardner: 17
Hexane Insoluble: .01
Moisture %: .8
Viscosity Brookfield @ 25C cP: 8,500
Specific Gravity: 1.03
Acid Value: 36

CENTROPHASE 152:
Amber Fluid
Acetone Insoluble Min.-Max.%: 50-54
Color Gardner: 14
Hexane Insoluble: .01
Moisture %: .8
Viscosity Brookfield @ 25C cP: 1,500
Specific Gravity: .99
Acid Value: 25

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Special Grade Lecithins (Continued):

CENTROL CA:
Amber Fluid
Acetone Insoluble Min.-Max. %: 60-64
Color Gardner: 17
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 6,000
Specific Gravity: 1.03
Acid Value: 22

CENTROMIX E:
Amber Fluid
Acetone Insoluble Max.-Min. %: 48-52
Color Gardner: 14
Hexane Insoluble: .1
Moisture %: .8
Viscosity Brookfield @ 25C cP: 7,500
Specific Gravity: 1.01
Acid Value: 22

CENTROMIX LP250:
Amber Fluid
Acetone Insoluble Min.-Max. %: 48-50
Color Gardner: 14
Hexane Insoluble: .1
Moisture %: .8
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.01
Acid Value: 22

CENTROMIX LP200:
Amber Fluid
Acetone Insoluble Min.-Max. %: 50-52
Color Gardner: 14
Hexane Insoluble: .1
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.01
Acid Value: 22

BLENDMAX A:
Amber Fluid
Acetone Insoluble Min.-Max. %: 52-55
Color Gardner: 17
Hexane Insoluble: .3
Moisture %: 1.0
Viscosity Brookfield @ 25C cP: 3,000
Specific Gravity: 1.04
Acid Value: 36

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Standard Grade Lecithins:

CENTROCAP 162US:
Amber Fluid
Acetone Insoluble Min.-Max. %: 60-64
Color Gardner: 15
Moisture %: .8
Viscosity Brookfield @ 25C cP: 4,500
Specific Gravity: 1.03
Acid Value: 30

CENTROCAP 162SS:
Amber Fluid
Acetone Insoluble Min.-Max. %: 60-64
Color Gardner: 13
Moisture %: .8
Viscosity Brookfield @ 25C cP: 4,500
Specific Gravity: 1.03
Acid Value: 30

CENTROCAP 273US:
Amber Fluid
Acetone Insoluble Min.-Max. %: 50-54
Color Gardner: 15
Moisture %: .8
Viscosity Brookfield @ 25C cP: 2,000
Specific Gravity: 1.03
Acid Value: 30

CENTROCAP 273SS:
Amber Fluid
Acetone Insoluble Min.-Max. %: 50-54
Color Gardner: 13
Moisture %: .8
Viscosity Brookfield @ 25C cP: 2,000
Specific Gravity: 1.03
Acid Value: 30

CENTROL 2FUB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 62-64
Color Gardner: 17
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.03
Acid Value: 30

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

CENTROL 2FSB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 62-64
Color Gardner: 14
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.03
Acid Value: 30

CENTROL 3FUB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 62-64
Color Gardner: 17
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.03
Acid Value: 30

CENTROL 3FSB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 62-64
Color Gardner: 14
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 10,000
Specific Gravity: 1.03
Acid Value: 30

ACTIFLO 68UB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 66-68
Color Gardner: 17
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 13,000
Specific Gravity: 1.04
Acid Value: 23

ACTIFLO 68SB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 66-68
Color Gardner: 14
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 13,000
Specific Gravity: 1.04
Acid Value: 23

CENTRAL SOYA: CENTRAL SOYA Lecithins (Continued):

Standard Grade Lecithins (Continued):

ACTIFLO 70UB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 68-72
Color Gardner: 17
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 30,000
Specific Gravity: 1.04
Acid Value: 25

ACTIFLO 70SB:
Amber Fluid
Acetone Insoluble Min.-Max. %: 68-72
Color Gardner: 14
Hexane Insoluble: .2
Moisture %: .8
Viscosity Brookfield @ 25C cP: 30,000
Specific Gravity: 1.04
Acid Value: 25

CLIMAX PERFORMANCE MATERIALS CORP.: ACTRASOLS Anionic Surfactants:

A Series of Biodegradable Anionic Sulfated Oils

C50:
Base: Castor Oil
Appearance: Clear, Yellow
Density (lb./gal.): 8.6
pH (10%): 7.7
Moisture (%): 50
Total Alkalinity (mgKOH/gram): 21
Free Fatty Acid (%): 4
Combined SO3 (%): 3.5

C75:
Base: Castor Oil
Appearance: Clear, Yellow
Density (lb./gal.): 8.7
pH (10%): 7.3
Moisture (%): 30
Total Alkalinity (mgKOH/gram): 21
Free Fatty Acid (%): 12
Combined SO3 (%): 5.0

C85:
Base: Castor Oil
Appearance: Clear, Yellow
Density (lb./gal.): 8.7
pH (10%): 7.3
Moisture (%): 25
Total Alkalinity (mgKOH/gram): 25
Free Fatty Acid (%): 15
Combined SO3 (%): 5.0

ASR:
Base: Castor Oil
Appearance: Clear, Brown
Density (lb./gal.): 8.6
pH (10%): 6.7
Moisture (%): 25
Total Alkalinity (mgKOH/gram): 42
Free Fatty Acid (%): 38
Combined SO3 (%): 5.2

PSR:
Base: Castor Oil
Appearance: Clear, Orange
Density (lb./gal.): 8.7
pH (10%): 6.8
Moisture (%): 26
Total Alkalinity (mgKOH/gram): 38
Free Fatty Acid (%): 38
Combined SO3 (%): 5.2

CLIMAX PERFORMANCE MATERIALS CORP.: ACTRASOL Anionic Surfactants (Continued):

SR75:
Base: Oleic Acid
Appearance: Cloudy, Brown
Density (lbs./gal.): 8.4
pH (10%): 6.2
Moisture (%): 25
Total Alkalinity (mgKOH/gram): 25
Free Fatty Acid (%): 44
Combined SO3 (%): 6.2

SR606:
Base: Oleic Acid
Appearance: Clear, Brown
Density (lb./gal.): 8.8
pH (10%): 6.0
Moisture (%): 30
Total Alkalinity (mgKOH/gram): 22
Free Fatty Acid (%): 35
Combined SO3 (%): 7.7

EO:
Base: Glyceryl Trioleate
Appearance: Cloudy, Brown
Density (lb./gal.): 8.7
pH (10%): 6.1
Moisture (%): 25
Total Alkalinity (mgKOH/gram): 9
Free Fatty Acid (%): 19
Combined SO3 (%): 7.7

SP*:
Base: Tall Oil
Appearance: Clear, Brown
Density (lb./gal.): 9.7
pH (10%): 6.4
Moisture (%): 48
Total Alkalinity (mgKOH/gram): 85
Free Fatty Acid (%): 16
Combined SO3 (%): 5.0

CS75*:
Base: Soya
Appearance: Clear, Brown
Density (lb./gal.): 9.0
pH (10%): 7.0
Moisture (%): 35
Total Alkalinity (mgKOH/gram): 30
Free Fatty Acid (%): 10
Combined SO3 (%): 5.5

* Sulfonates

CLIMAX PERFORMANCE MATERIALS CORP.: ACTRASOL Anionic Surfactants (Continued):

MY75:
Base: Soya
Appearance: Cloudy, Brown
Density (lb./gal.): 8.7
pH (10%): 6.8
Moisture (%): 30
Total Alkalinity (mgKOH/gram): 7
Free Fatty Acid (%): 8
Combined SO3 (%): 4.5

OY75:
Base: Soya
Appearance: Cloudy, Brown
Density (lb./gal.): 8.7
pH (10%): 7.0
Moisture (%): 30
Total Alkalinity (mgKOH/gram): 14
Free Fatty Acid (%): 12
Combined SO3 (%): 5.0

175:
Base: Tallow
Appearance: Tan Wax
Density (lb./gal.): 8.4
pH (10%): 6.8
Moisture (%): 25
Total Alkalinity (mgKOH/gram): 10
Free Fatty Acid (%): 21
Combined SO3 (%): 3.0

SBO:
Butyl Oleate
Appearance: Clear Yellow
Density (lb./gal.): 8.7
pH (10%): 6.4
Moisture (%): 36
Total Alkalinity (mgKOH/gram): 6
Free Fatty Acid (%): 8
Combined SO3 (%): 6.5

CLIMAX PERFORMANCE MATERIALS CORP.: ACTRASOL Anionic Surfactants (Continued):

SRK-75:
Base: Oleic Acid, K
Moisture %: 30
Total Alkalinity % (mgKOH/gram): 18
Free Fatty Acid %: 46
Combined SO3 (%): 6.1

SP-175K:
Base: Tall Oil Fatty Acid, K
Moisture %: 28
Total Alkalinity % (mgKOH/gram): 16
Free Fatty Acid %: 46
Combined SO3 (%): 5.5

CS-75*:
Base: Soybean Oil, Na
Moisture %: 28
Total Alkalinity % (mgKOH/gram): 35
Free Fatty Acid %: 5
Combined SO3 (%): 7.0

EO:
Base: Glyceryl Trioleate, Na
Moisture %: 25
Total Alkalinity % (mgKOH/gram): 12
Free Fatty Acid %: 19
Combined SO3 (%): 6.3

KAP:
Base: Sperm Oil Substitute, Na
Moisture %: 25
Total Alkalinity % (mgKOH/gram): 5
Free Fatty Acid %: 14
Combined SO3 (%): 4.3

SBO:
Base: Butyl Oleate, Na
Moisture %: 36
Total Alkalinity % (mgKOH/gram): 7
Free Fatty Acid %: 10
Combined SO3 (%): 6.0

10-198:
Base: Sperm Oil Substitute, Na
Moisture %: 25
Total Alkalinity % (mgKOH/gram): 12
Free Fatty Acid %: 12
Combined SO3 (%): 4.5

* Sulfonate

COSTEC INC.: Industrial Surfactants: Alkanolamides: 1:1 Superamides-Diethanolamides:

AMIDEX CE:
Coco Diethanolamide
Yellow Liquid
Concentration, %: 100
All-purpose, economical detergent, foam stabilizer and thickener. Used in industrial cleaners, car shampoos, liquid dish detergents, dry-cleaning detergents, waterless cleaners and solvent cleaners. Used in personal care products such as hair shampoo.

AMIDEX LD:
Lauryl/Myristyl Diethanolamide
Waxy Solid
Concentration, %: 100
Detergent, thickener, foam builder and stabilizer. Produces dense foam. Used in liquid detergents as well as household, institutional and industrial cleaning compounds. Outstanding performance in personal care products such as hair shampoos.

AMIDEX L-9:
Modified Lauryl Diethanolamide
Yellow Liquid to White Paste
Concentration, %: 100
Liquid form of Lauramide DEA. Exhibits the same performance characteristics as AMIDEX LD, without the need for heating. Used in liquid detergents, household, institutional and industrial cleaning compounds.

COSTEC INC.: Industrial Surfactants: Alkanolamides: 2:1 Diethanolamides:

AMIDEX C:
Modified Coco Diethanolamide
Yellow Liquid
Concentration, %: 100
Improved detergency and thickening characteristics. Exhibits emulsification and wetting properties. Foam stabilizer and viscosity builder. Used in industrial and household cleaners.

AMIDEX CA:
Modified Coco Diethanolamide
Yellow Liquid
Concentration, %: 100
Superior detergent, wetting agent, emulsifier for household and industrial hard-surface cleaners, floor strippers, degreasers and specialty cleaning compounds. Foam stabilizer and viscosity builder. Exhibits compatibility with inorganic builders in aqueous systems.

AMIDEX CO-1:
Modified Coco Diethanolamide
Amber, Viscous Liquid
Concentration, %: 100
Imparts detergency, wetting power, emulsification and lubricity. Has good compatibility with inorganic builders in aqueous systems. Dispersant and foaming agent especially suited for industrial and specialty cleaning compounds as well as conveyor chain lubricants.

AMIDEX TD:
Tallow Diethanolamide
Amber, Viscous Liquid
Concentration, %: 100
Detergent for dry laundry compounds and specialty cleaners.

AMIDEX 1285:
Modified Coco Diethanolamide
Yellow, Viscous Liquid
Concentration, %: 100
Phosphate compatible detergent, wetting agent and emulsifier. Excellent compatibility with high concentrations of inorganics in aqueous systems without need for hydrotrope. Especially suited for high-alkaline industrial and specialty cleaning compounds, e.g., degreasers and floor strippers.

AMIDEX 1351:
Modified Coco Diethanolamide
Amber, Viscous Liquid
Concentration, %: 100
Superior detergent, wetting agent, emulsifier for industrial and specialty cleaning compounds, floor strippers, degreasers, household and industrial hard-surface cleaners. Foam stabilizer and viscosity builder. Exhibits compatibility with inorganic builders in aqueous systems.

COSTEC, INC.: Industrial Surfactants: Alkyl Sulfates:

SULFOCHEM ALS:
Ammonium Lauryl Sulfate
Water-White Liquid
Activity, %: 27-29
Detergent, foaming and suspending agent for liquid cleaners. Produces copious rich foam. Stable in products at pH range 4 to 7; buffering is recommended. Good viscosity response to the additions of salt and alkanolamides.

SULFOCHEM SLS:
Sodium Lauryl Sulfate
Water-White Liquid
Activity, %: 28-30
Detergent, foaming and suspending agent. Produces copious rich foam. Primary surfactant in liquid, hard-surface cleaners; carpet shampoos; upholstery shampoos and spot removers. Good viscosity response to the additions of salt and alkanolamides.

SULFOCHEM SLX:
Sodium Lauryl Sulfate
Water-White Liquid
Activity, %: 28-30
Detergent, foaming and suspending agent. Produces rich foam. Primary surfactant in rug shampoos, upholstery shampoos and spot removers. Good viscosity response to additions of salt and alkanolamides. Exhibits lower cloud point (lower solidification point) than SLS, permitting easier handling in colder weather.

SULFOCHEM SLN:
Sodium Lauryl Sulfate
White Needles
Activity, %: 88
Foamer, dispersant, wetting agent and detergent for use in dry blends as cleaning compounds and carpet shampoos.

SULFOCHEM SLP:
Sodium Lauryl Sulfate
White Powder
Activity, %: 90
For use in high-active, cleaning-compound concentrates. Foamer, dispersant, wetting agent and detergent.

SULFOCHEM SLP-95:
Sodium Lauryl Sulfate
White Powder
Activity, %: 95
For use in high-active, cleaning-compound concentrates. Foamer, detergent, dispersant and wetting agent.

SULFOCHEM TLS:
Triethanolamine Lauryl Sulfate
Water-White Liquid
Activity, %: 39-41
Milder than SLS or ALS. Produces dense, creamy foam with excellent wetting and cleansing action in liquid soaps and shampoos. Good viscosity response to additions of salt and alkanolamides. Exhibits good tolerance to hard water.

COSTEC INC.: Industrial Surfactants: Alkyl Ether Sulfates:

SULFOCHEM ES-2:
Sodium Lauryl Ether (2) Sulfate
Water-White Liquid
Activity, %: 25-27
Flash foamer and detergent for use in specialty cleaning products.

SULFOCHEM ES-70:
Sodium Lauryl Ether (2) Sulfate
Pale Yellow, Flowing Gel
Activity, %: 68
High-active surfactant for use in specialty compounds.

SULFOCHEM 25-3A:
Ammonium Alkyl Ether (3) Sulfate
Pale Yellow Liquid
Activity, %: 58-60
Flash foamer, detergent, wetting agent and emulsifier. Suitable for wide variety of industrial and household cleaning compounds such as liquid dishwashing products. Particularly suitable for formulations in the pH 6.0-7.0 range.

SULFOCHEM 25-3S:
Sodium Alkyl Ether (3) Sulfate
Pale Yellow Liquid
Activity, %: 58-60
Flash foamer, detergent, wetting agent and emulsifier. Used in light-duty dishwashing and laundry compounds as well as heavy-duty industrial cleaning compounds.

SULFOCHEM 436:
Ammonium Nonylphenol Ether (4) Sulfate
Pale Yellow Liquid
Activity, %: 58-60
High-foaming detergent for dishwashing, carwash and carpet-shampoo formulations.

COSTEC INC.: Industrial Surfactants: Amine Oxides:

CHEMOXIDE CAW:
Cocamidopropyl Amine Oxide
Water-White Liquid
Concentration, %: 30
Mild to the skin. Foam builder, thickener and emollient. Excellent foam stability in hard water, acidic and alkaline solutions. Compatible with nonionic, anionic and most cationic surfactants.

CHEMOXIDE LM-30:
Lauryl/Myristyl Dimethylamine Oxide
Water-White Liquid
Concentration, %: 30
Exhibits good tolerance to electrolytes, which permits improved performance in hard water. Effective over a wide pH range. Good viscosity response and foam enhancement for household and industrial cleaners. A nonionic surfactant, compatible with anionic and cationic systems.

CHEMOXIDE O1:
Oleyl Dimethyl Amine Oxide
Water-White Liquid
Concentration, %: 55
Performs as a nonionic. Generally good foamer and good thickener with tolerance to electrolytes. Addition of 1% in water produces a viscous liquid, 3-5% produces a gel. Exhibits excellent viscosity response to salt addition in anionic systems.

COSTEC INC.: Industrial Surfactants: Amphoterics:

CHEMBETAINE BW:
Coco Betaine
Water-White Liquid
Concentration, %: 45
Mild to the skin. Compatible with anionic, cationic and nonionic surfactants. Excellent viscosity builder and gelling agent. Hard-water tolerance permits equally good foaming in hard and soft water. Stable in high-electrolyte solutions and will help solubilize other surfactants into these systems. Stable in acidic and alkaline conditions, functioning as cationic in acid media and as anionic in alkaline. Lime soap dispersant.

CHEMBETAINE C:
Cocamidopropyl Betaine
Pale Yellow Liquid
Concentration, %: 35
Mild to the skin. Stable in strong acid and alkaline solutions. Good foaming in both soft- and hard-water systems. Viscosity builder. Lime-soap dispersant and wetting agent.

CHEMBETAINE CAS:
Cocamidopropyl Hydroxysultaine
Pale Yellow Liquid
Concentration, %: 50
Excellent detergent that exhibits pronounced mildness in combination with anionic surfactants and soaps. Does not precipitate from solution at an isoelectrolic pH value. Equally soluble in soft water, hard water, brine and concentrated electrolyte solutions. Clear solutions with excellent foaming and wetting characteristics are obtained. The copious and stable foam produced under a wide variety of conditions suggests its use in formulations of heavy-duty, industrial alkaline cleaners such as steam-cleaning compounds, wax removers and hard surface cleaners. Outstanding performance in high concentration of mineral acids suggests use as wetting agent in acid pickling of metals and as detergent in acid cleaners with scale-and-lime-soap dispersing properties. Provides synergistic effect of increased foam and stability in combination with alkyl sulfates, alkyl-ether sulfates, alkyl-benzene sulfonates and soaps. Viscosity builder when formulated with anionic surfactants for liquid soaps and shampoos.

COSTEC INC.: Industrial Surfactants: Imidazolines:

CHEMZOLINE T-11:
Aminoethyl Tall Oil Imidazoline
Dark Amber, Viscous Liquid
Concentration, %: 100
Intermediate for production of film-forming corrosion inhibitors. Reaction with acidic material yields salts with film-forming persistency. Chain length of acid and degree of neutralization determine desired degree of dispersibility in aqueous systems. Neutralization with glycolic or acetic acid produces film-forming salts usable as cationic bases for "spray wax" concentrates for addition to rinse cycle in automatic car washes. It is also used to disperse certain pigments in paint formulations.

CHEMZOLINE T-33:
Aminoethyl Tall Oil Imidazoline
Dark Amber, Viscous Liquid
Concentration, %: 100
Dispersible in water as well as soluble in mineral-oil and most organic solvents. May be used to produce self-emulsifiable mineral-oil compositions or as a dispersant for mineral spirits and aromatic solvents. Excellent film-forming corrosion inhibitor, either as the base or in salt form. Salts of low-molecular-weight carboxylic or dicarboxylic acids form clear water solutions; degree of water solubility can be controlled by chain length of acid. Acetic, glycolic or hydrochloric acid salts are used as promoters in froth flotation of acidic or negatively charged ores, e.g. silica. Compatibility, heat stability and water-dispersing properties promote usage as an anti-stripping agent for asphalt compounds and coal tar pitches. It is also used to disperse certain pigments in paint formulations.

CHEMZOLINE T-44:
Hydroxyethyl Tall Oil Imidazoline
Dark, Viscous Liquid
Concentration, %: 100
Soluble in mineral oil, vegetable and animal glycerides and most organic solvents. Forms hazy, stable dispersion in water which can be clarified by acidifying with mineral or organic acids. Excellent emulsifier for mineral, vegetable and animal oils. Formulations containing 1-4% T-44 exhibit excellent emulsion stability. Corrosion inhibitor in its basic form or as its salts.

CHEMZOLINE C-22:
Hydroxyethyl Coco Imidazoline
Light Tan Paste
Concentration, %: 100
Soluble in Isopropanol, kerosene, and aromatic solvents. Forms hazy dispersion in water, clarified by acidifying. Basic form and its salts are used as corrosion inhibitors as well as emulsifiers for oils.

COSTEC INC.: Industrial Surfactants: Phosphate Esters:

CHEMPHOS TC-227:
Aromatic
Clear, Viscous Liquid
Activity, %: 100
Detergent, wetting agent, emulsifier and coupling agent. Lowers surface tension. Water soluble, compatible and stable in concentrated electrolyte solutions. Improves detergency, foaming and increases viscosity of liquid cleaners. An exceptional detergent used in powdered and liquid, alkaline cleaners; heavy-duty, all-purpose cleaners for metal working; steam cleaning; dairy cleaners; bottle-washing compounds and floor strippers. Soluble in most oxygenated solvents, aromatic solvents, and chlorinated solvents.

CHEMPHOS TC-227S:
Aromatic, Sodium Salt
Clear, Viscous Liquid
Activity, %: 85
Detergent, emulsifier, dispersant and solubilizer for use with nonionic surfactants and concentrated electrolyte solutions.

CHEMPHOS TC-310:
Aromatic
Clear, Viscous Liquid
Activity, %: 100
Detergent, wetting agent, emulsifier and dispersant. Lowers surface tension. Soluble in water, alcohols, hydrocarbon solvents and chlorinated solvents. Exhibits rust-inhibition properties.

CHEMPHOS TC-310D:
Aromatic, Amine Salt
Clear, Viscous Liquid
Activity, %: 85
Dissolves readily in most organic solvents, producing clear solutions. Highly suitable for incorporation in water-rinsable, solvent-based cleaners.

CHEMPHOS TC-310S:
Aromatic, Sodium Salt
Clear, Viscous Liquid
Activity, %: 85
Soluble in water and many polar and nonpolar solvents. Compatible with high electrolyte solutions. Outstanding surface-tension-lowering properties. Resistant to heat and alkali. Detergent, emulsifier, and wetting agent in heavy-duty cleaners, all-purpose, hard-surface detergents and low-foaming rust-retarding, metal cleaners. Emulsifier for mineral oil, crude oil, and pesticice formulations. Prolongs the life of wax and resin floor finishes without damage to floor coverings.

COSTEC INC.: Industrial Surfactants: Phosphate Esters (Continued):

CHEMPHOS TC-444:
Aliphatic
Clear, Viscous Liquid
Activity, %: 100
Compatible with high concentrations of sodium hydroxide and silicate builders. Coupling agent for nonionic surfactants with liquid, alkali detergent systems.

CHEMPHOS TR-421:
Aliphatic
Clear, Viscous Liquid
Activity, %: 98
Water soluble. Exceptionally stable in alkali systems with outstanding compatibility in concentrated electrolyte solutions. Effective agent for coupling nonionic surfactants with liquid, alkali detergent systems. Excellent detergency in hard-surface and household cleaners. Moderate foamer.

CHEMPHOS TR-495:
Aliphatic
Clear to Hazy, Viscous Liquid
Activity, %: 100
Detergent, emulsifier, dispersant, wetting agent. Similar to CHEMPHOS TR-421 but better compatibility in strong electrolyte systems. Emulsifier in waterless hand cleaners, detergent in dry-cleaning formulations. Pesticide emulsifier with liquid fertilizer blends. Used in caustic boil and peroxide bleach for cotton processing.

CHEMPHOS TR-513:
Aliphatic
Clear, Viscous Liquid
Activity, %: 100
Detergent, emulsifier and wetting agent. Water soluble with excellent hydrotroping properties. Compatible in concentrated electrolyte systems. Used for hard-surface detergency in liquid industrial cleaners, soak-tank metal cleaning and steam-cleaning formulations.

CHEMPHOS TR-517:
Aliphatic
Clear, Viscous Liquid
Activity, %: 100
Very hydrophilic surfactant with excellent solubility and stability in caustic and alkali builders. Also for use in cotton processing, particularly in mercerizing.

COSTEC INC.: Industrial Surfactants: Phosphate Esters (Continued):

CHEMPHOS TX-625:
Aliphatic
Clear, Light Liquid
Activity, %: 100
Exhibits emulsifying, penetrating and anti-corrosion properties. Solutions of 10% form gels in soft and hard water, solutions of 0.1% are cloudy.

CHEMPHOS TX-625D:
Aliphatic, Amine Salt
Clear, Viscous Liquid
Activity, %: 100
Detergent, wetting agent, and emulsifier. Especially effective with oily, carbon-type soils. Couples exceptionally well with inorganic phosphates and can be used alone or with alkanolamides in medium- or heavy-duty detergent formulations. Has excellent wetting power. Particularly suited for hard-surface and steam-cleaning applications. Its solubility in chlorinated solvents and modified hydrocarbons makes it an excellent self-emulsifier with added advantages of detergency, rapid-wetting and anti-corrosion properties.

COSTEC INC.: Industrial Surfactants: Specialties:

AMEENEX C-18:
Fatty Amido Diamine
Light Amber Solid
Concentration, %: 100
Corrosion inhibitor. Easily formulated for desired dispersibility with good film-forming persistency. The acetic acid and hydroxyacetic salts are highly water soluble. Useful in non-metallic mineral flotation. Wetting, emulsifying and antistripping agent with asphalt compounds and coal-tar pitches.

AMEENEX C-20:
Complex Aliphatic Amine Blend
Dark Amber Liquid
Concentration, %: 100
Completely soluble in water and brine. Cationic behavior makes it useful for the formulation of corrosion inhibitors. Film-forming amine. Steam volatile for boiler-condensate corrosion control. Low combining weight makes it an efficient neutralizing amine.

AMIDEX OE:
Polyoxyalkylene Amide Ester
Amber, Viscous Liquid
Concentration, %: 100
Developed for emulsification of industrial pale oils, e.g., pale oil #100. Used to formulate soluble oils, cutting oils, drawing oils and water rinsable lubricants.

AMIDEX WD:
Fatty Amine Salt
Amber Liquid to Soft Paste
Concentration, %: 80
Shows excellent carbon removal properties when formulated with ortho-dichlorobenzene, kerosene, butyl cellosolve and water. Cold-dip degreasing formulation.

AMIDEX 1248:
Complex Fatty Amido Phosphate
Light Amber Liquid
Concentration, %: 100
Detergent, emulsifier, wetting agent for formulation of aqueous degreasers and all-purpose industrial and institutional cleaners.

COSTEC INC.: Personal Care Specialties: Alkanolamides: 1:1 Superamides-Diethanolamides:

AMIDEX CE:
Cocamide DEA
Yellow Liquid
Activity, %: 100
All-purpose, economical thickener and viscosity builder for cosmetic surfactant systems. Stabilizes foam in shampoos, cleansers and bubble baths.

AMIDEX KD:
Cocamide DEA
Pale Yellow Liquid
Activity, %: 100
Amide of choice in ethoxy sulfate systems. Yields high, stable viscosities at low concentrations. Excellent flash foaming and foam stability. Used extensively for gelled shampoos, bath gels, liquid soaps and facial cleansers.

AMIDEX KDO:
Cocamide DEA
Amber Liquid
Activity, %: 100
Cost-effctive version of AMIDEX KD. Builds high viscosities and exhibits good flash foaming and foam stability. Economical and effective in shampoos, bath and cleansing products.

AMIDEX S:
Soyamide DEA
Amber Liquid
Activity, %: 100
Soya derived amide exhibiting foam and skin feel properties analogous to soap. Good viscosity building and emulsification properties. Ideal choice for shower and facial cleansers, liquid soaps and bath gels.

AMIDEX L-9:
Lauramide DEA
Amber Liquid
Activity, %: 100
High-purity thickener, flash foamer and viscosity enhancer. Good foam stabilizer and builder. Recommended for use in bath and shower products, shampoos and skin cleansers.

AMIDEX LD:
Lauramide DEA
Solid
Activity, %: 100
Effective viscosity builder, foam booster and stabilizer. Exhibits good detergency and emulsification characteristics. Uses include shampoos, cleansers, bubble baths, creams and lotions.

COSTEC INC.: Personal Care Specialties: Alkanolamides: 1:1 Superamides-Diethanolamides (Continued):

AMIDEX LD-8:
Lauramide DEA
Pale Yellow Liquid
Activity, %: 80
Modified superamide for thick, rich foam and high viscosity. Product remains liquid at relatively low temperatures. Ideal for applications requiring ease of handling and quick response.

AMIDEX SE:
Stearamide DEA
Solid
Activity, %: 100
Outstanding thickener and emulsifier. A broad range of compatibility allows its use in cold wave neutralizers, vegetable oil emulsions, conditioning shampoos and conditioning mousses.

AMIDEX CP:
Capramide DEA
Pale Yellow Liquid
Activity, %: 100
Increased flash foam with good detergency. Its short-chain length makes it an excellent wetting agent suitable for use in pigmented systems.

AMIDEX LN:
Linoleamide DEA
Amber Liquid
Activity, %: 100
Especially substantive to hair. Good choice where thickening, foam building, emulsifying and conditioning are required. For use in bath- and skin-care products as well as shampoos and conditioners.

AMIDEX O:
Oleamide DEA
Amber Liquid
Activity, %: 100
Super-fatty thickener and emulsifier. Compatible with hair dye systems. Good choice for stabilizing lotion shampoos and mineral oil emulsions. Exhibits lubricating and conditioning properties.

COSTEC INC.: Personal Care Specialties: Alkanolamides: 1:1 Superamides-Diethanolamides (Continued):

AMIDEX RC:
Ricinoleamide DEA
Amber Liquid
Activity, %: 100
Low-foaming amide with good wetting and softening properties. Good emulsifier with lubricity. Suggested uses include hair conditioners, shampoos, skin creams and lotions.

AMIDEX PK:
Palmkernalamide DEA
Yellow Liquid
Activity, %: 100
Easy-to-handle, liquid amide. Effective as a viscosity builder and foamer. For use in conditioning shampoos, mousses and styling gels.

Alkanolamides: Monoisopropanolamides:

AMIDEX LIPA:
Lauramide MIPA
Waxy Flake
Activity, %: 100
Mild, low-melting, fully active foam booster and stabilizer. Minimum concentrations yield viscosity increases in anionic shampoo and detergent systems.

AMIDEX CIPA:
Cocamide MIPA
Waxy Flake
Activity, %: 100
Anti-defatting, high-active amide. Designed for applications requiring maximum foam and viscosity at minimum cost. For use in shampoos, shampoo concentrates, skin cleansers and bubble baths.

COSTEC INC.: Personal Care Specialties: Alkanolamides: Monoethanolamides:

AMIDEX CME:
Cocamide MEA
Waxy Flake
Activity, %: 100
Rapid viscosity builder and foam enhancer. Effective in soap systems, synthetic powder detergents and liquid dish formulations.

AMIDEX KME:
Cocamide MEA
Waxy Flake
Activity, %: 100
Dense foam builder and viscosity booster. Rapid response in synthetic powder and liquid-detergent systems. Good stabilizer in soap systems.

AMIDEX SME:
Stearamide MEA
Waxy Flake
Activity, %: 100
Excellent thickener and emulsifier in both mineral-oil and vegetable-oil systems. Good wax emulsifier and skin protectant in toilet bars, creams and lotions.

AMIDEX AME:
Acetamide MEA
Water-White Liquid
Activity, %: 70
Unique antistatic and humectant properties. Conditioner of choice for both skin and hair products.

AMIDEX LMMEA:
Lauramide MEA
Waxy Flake
Activity, %: 100
Especially good viscosity builder for shampoos, bath products and skin cleansers. Boosts foam and adds stability to tight, dense foam.

COSTEC INC.: Personal Care Specialties: Alkyl Sulfates:

SULFOCHEM ALS:
Ammonium Lauryl Sulfate
Water-White Liquid
Activity, %: 28-30
Designed for use in low-pH systems. Yields high foam; gives excellent viscosity response, good detergency and mildness. Synergism with Betaines offers many formulating possibilities.

SULFOCHEM DLS:
Diethanolamine Lauryl Sulfate
Pale Yellow Liquid
Activity, %: 36-38
SULFOCHEM MLS:
Monoethanolamine Lauryl Sulfate
Pale Yellow Liquid
Activity, %: 32-34
SULFOCHEM TLS:
Triethanolamine Lauryl Sulfate
Water-White Liquid
Activity, %: 39-41
Amine lauryl sulfates are high-active, cost-effective surfactant foamers helpful in formulating shampoos and bubble baths. Their stable lather and soap-like characteristics are ideal for use in skin cleansers, shower gels and syndet bars.

SULFOCHEM SLS:
Sodium Lauryl Sulfate
Water-White Liquid
Activity, %: 28-30
Surfactant foamer developed for applications requiring formulating flexibility.

SULFOCHEM SLC:
Sodium Lauryl Sulfate
Water-White Liquid
Activity, %: 28-30
Low levels of salt and free alcohol give maximum formulating flexibility. Low cloud point lends itself to sparkling clear shampoos, bath products and cleansers.

SULFOCHEM SAC:
Sodium Lauryl Sulfate
White Pearlescent Paste
Activity, %: 28-30
Efficient foamer for lotion and paste shampoos. Cost-effective detergent base for pearlescent shampoos, bubble baths, shower gels and cleansers.

COSTEC INC.: Personal Care Specialties: Alkyl Sulfates (Continued):

SULFOCHEM SLN:
Sodium Lauryl Sulfate
White Needles
Activity, %: 88
Concentrated surfactant developed for systems requiring high activity. Uses include shampoo concentrates, liquid or powder bubble baths and cosmetic cleansers. Exceptional foamer, dispersant and wetting agent.

SULFOCHEM SLP:
Sodium Lauryl Sulfate
White Powder
Activity, %: 90
High purity for use in dentifrices, powdered bath products and cleansers.

SULFOCHEM SLP-95:
Sodium Lauryl Sulfate
White Powder
Activity, %: 95
For dentifrices and other applications requiring extremely high purity.

Alkyl Ether Sulfates:

SULFOCHEM EA-1:
Ammonium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
SULFOCHEM EA-2:
Ammonium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
SULFOCHEM EA-3:
Ammonium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
Excellent choice for low-pH shampoo systems where mildness is important. High flash foam, low cloud point, and good viscosity response. Very effective in acid balanced shampoo systems, cleansers, bath products and gels.

COSTEC INC.: Personal Care Specialties: Alkyl Ether Sulfates (Continued):

SULFOCHEM ES-1:
Sodium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
SULFOCHEM ES-2:
Sodium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
SULFOCHEM ES-3:
Sodium Laureth Sulfate
Water-White Liquid
Activity, %: 25-28
Versatile, cost-effective surfactant for use in personal cleansing products. Superior flash foam and lather characteristics. Good skin compatibility. Uses include liquid, lotion and pearl shampoos, shower and bath gels; bubble baths and facial cleansers.

SULFOCHEM EA-70:
Ammonium Laureth Sulfate (2 mole)
Pale Yellow, Flowing Gel
Activity, %: 65-70
SULFOCHEM ES-70:
Sodium Laureth Sulfate (2 mole)
Pale Yellow, Flowing Gel
Activity, %: 65-70
Highly concentrated surfactant for use in toiletries and cosmetics. A versatile formulating tool for shampoo concentrates, bath gels, liquid soaps and syndet beauty bars.

SULFOCHEM EA-60:
Ammonium Laureth Sulfate (3 mole)
Water-White to Pale Yellow Liquid
Activity, %: 58-60
SULFOCHEM ES-60:
Sodium Laureth Sulfate (3 mole)
Water-White to Pale Yellow Liquid
Activity, %: 58-60
High-active, cost-effective surfactant for use in shampoo systems designed for professional use. Also widely used for bubble baths and cleansers.

COSTEC INC.: Personal Care Specialties: Amido-Amines:

Products in the CHEMIDEX series solubilize readily in acidic media to form cationic emulsifiers. These produce stable emulsions in systems containing suitable emollients and nonionics.

CHEMIDEX B:
Behenamidopropyl Dimethylamine
Flakes
Activity, %: 100

CHEMIDEX C:
Cocamidopropyl Dimethylamine
Soft, Waxy Solid
Activity, %: 100

CHEMIDEX L:
Lauramidopropyl Dimethylamine
Waxy Solid
Activity, %: 100

CHEMIDEX M:
Myristamidopropyl Dimethylamine
Waxy Solid
Activity, %: 100

CHEMIDEX O:
Oleamidopropyl Dimethylamine
Liquid
Activity, %: 100

CHEMIDEX P:
Palmitamidopropyl Dimethylamine
Waxy Solid
Activity, %: 100

CHEMIDEX R:
Ricinoleamidopropyl Dimethylamine
Liquid
Activity, %: 100

CHEMIDEX S:
Stearamidopropyl Dimethylamine
Flakes
Activity, %: 100

COSTEC INC.: Personal Care Specialties: Amido-Amines (Continued):

CHEMIDEX SE:
Stearamidoethyl Dimethylamine
Solid
Activity, %: 100

CHEMIDEX SI:
Isostearamidopropyl Dimethylamine
Liquid
Activity, %: 100

CHEMIDEX SO:
Soyamidopropyl Dimethylamine
Liquid
Activity, %: 100

CHEMIDEX T:
Tallowamidopropyl Dimethylamine
Paste
Activity, %: 100

CHEMIDEX WC:
Cocamidopropyl Dimethylamine
Liquid to Soft Paste
Activity, %: 100

COSTEC INC.: Personal Care Specialties: Amine Oxides:

CHEMOXIDE CAW:
Cocamidopropylamine Oxide
Pale Yellow Liquid
Activity, %: 30
Excellent choice for mild, low-irritation applications, such as shampoos, facial cleansers and bath products. Builds viscosity and boosts foam over a broad pH range.

CHEMOXIDE LM-30:
Lauramine Oxide
Water-White Liquid
Activity, %: 30
Effective over a wide pH range. Good viscosity response and foam enhancement. Tolerance to electrolytes improves hard water performance.

CHEMOXIDE O:
Oleamine Oxide
Water-White Liquid
Activity, %: 30
Good thickener and viscosity builder. Effective wetting agent for pigments and dyes. Suitable for use in hair colorants, gels and permanent waves.

CHEMOXIDE SAO:
Stearamidopropylamine Oxide
White Paste
Activity, %: 25
Good wetting and foaming agent. Rapidly builds viscosity and improves foam. Conditions and softens hair while reducing fly-away. Use in shampoos, conditioners and mousses or, as an emulsifier in creams and lotions.

CHEMOXIDE ST:
Stearamine Oxide
White Paste
Activity, %: 25
Conditions, softens, builds viscosity and foam. Use in conditioning shampoos or rinses improves comb-out and manageability.

CHEMOXIDE T:
Dihydroxyethyl Tallowamine Oxide
Clear Liquid
Activity, %: 50
Good detergency and wetting properties. Effective in low-pH shampoos and conditioning systems, as well as alkaline media. For use in gels, liquids or emulsions.

COSTEC INC.: Personal Care Specialties: Amine Oxides (Continued):

CHEMOXIDE TAO:
Tallowamidopropylamine Oxide
Yellow Liquid
Activity, %: 50
Increases viscosity and foam volume. Improves manageability and imparts luster to hair. For use in conditioners, sprays and mousses.

CHEMOXIDE WC:
Cocamine Oxide
Water-White Liquid
Activity, %: 30
High-foaming surfactant which tends to increase viscosity, as well as the quality and quantity of foam. Also contributes emolliency to shampoos, cleansers and bath products.

COSTEC INC.: Personal Care Specialties: Amphoterics:

CHEMBETAINE OL:
Oleyl Betaine
Pale Yellow Gel
Concentration, %: 50
Mild, emollient conditioning surfactant. Substantive to skin and hair. Its viscosity-building and foam-enhancing qualities make it ideal for use in shampoos, conditioners, liquid soaps and bath products.

CHEMBETAINE OL-30:
Oleyl Betaine
Pale Yellow Gel
Concentration, %: 30
Lower concentration provides easier handling. Gentle, substantive viscosity builder. Excellent foamer in acid or alkaline media. Very effective in conditioners and mousses. Contributes mildness and body to shampoos and shower gels.

CHEMBETAINE CB:
Coco Betaine
Pale Yellow Liquid
Concentration, %: 45
Excellent foaming in both hard and soft water. Mild to hair and skin. Compatible in alkaline or acid-balanced surfactant systems. Great for soap applications, shampoos and conditioners.

CHEMBETAINE CAS:
Cocamidopropyl Hydroxysultaine
Pale Yellow Liquid
Concentration, %: 50
Helps to reduce the irritation potential of other surfactants. Particularly suited to baby shampoos and baby bath products. Its good foaming and viscosity building improve most surfactant systems.

CHEMBETAINE TG:
Dihydroxyethyl Tallow Glycinate
Pale Yellow Liquid
Concentration, %: 50
Special conditioning qualities. A non-oily feel and resistance to build-up suggest uses in cream rinses, shampoos, conditioning mousses and comb-out sprays.

COSTEC INC.: Personal Care Specialties: Amphoterics (Continued):

CHEMBETAINE C:
Cocamidopropyl Betaine
Pale Yellow Liquid
Concentration, %: 35
High-foaming, mild surfactant. Stable over a wide pH range. Excellent foam and viscosity building with anionics suggest uses in shampoos, bubble baths, liquid soaps, conditioners and skin cleansers.

CHEMBETAINE CGF:
Cocamidopropyl Betaine
Water-White Liquid
Concentration, %: 35
High-purity, low-color surfactant exhibiting exceptional foam and viscosity building characteristics. Its mildness suggests uses in medicated shampoos and conditioners, facial cleansers, bubble baths and bath gels.

CHEMBETAINE S:
Soyamidopropyl Betaine
Pale Yellow Liquid
Concentration, %: 35
An amphoteric surfactant with special conditioning, foaming and viscosity-building properties. Especially effective with AOS and compatible with all anionics. Uses include shampoos, conditioners and bath products.

CHEMBETAINE L:
Lauramidopropyl Betaine
Water-White Liquid
Concentration, %: 35
Foam boosting and viscosity enhancement characteristics coupled with inherent mildness make it suitable for shower gels, liquid soaps, skin cleansers and shampoos.

COSTEC INC.: Personal Care Specialties: Phosphate Esters:

Phosphate esters are excellent emulsifiers and solubilizers over a broad pH range. They tend to yield more stable emulsions at lower concentrations than conventional emulsifiers. They are effective in hair care products due to their ability to substantively coat the hair and prevent damage from wet combing and blow drying. Phosphate esters provide excellent grooming characteristics and antistatic properties. They are also useful in perms, straighteners and depilitories due to their resistance to hydrolysis.

CHEMPHOS TC-231S:
Sodium Nonoxynol-9 Phosphate
Clear, Viscous Liquid
Activity, %: 85

CHEMPHOS TC-337:
Nonoxynol-20 Phosphate
Clear, Viscous Liquid
Activity, %: 75

CHEMPHOS TC-341:
Nonyl Nonoxynol-10 Phosphate
Hazy, Viscous Liquid
Activity, %: 100

CHEMPHOS TC-349:
Nonyl Nonoxynol-15 Phosphate
Clear, Viscous Liquid
Activity, %: 90

CHEMPHOS TR-505:
Oleth-10 Phosphate
Viscous Liquid
Activity, %: 100

CHEMPHOS TR-505D:
DEA-Oleth-10 Phosphate
Viscous Liquid
Activity, %: 100

CHEMPHOS TR-510:
Laureth-4 Phosphate
Clear, Viscous Liquid
Activity, %: 98

CHEMPHOS TR-510S:
Sodium Laureth-4 Phosphate
Clear, Viscous Liquid
Activity, %: 95

CHEMPHOS TR-515:
Oleth-3 Phosphate
Viscous Liquid
Activity, %: 100

CHEMPHOS TR-515D:
DEA-Oleth-3 Phosphate
Viscous Liquid
Activity, %: 100

CHEMPHOS TR-541:
Oleth-4 Phosphate
Viscous Liquid
Activity, %: 100

COSTEC INC.: Personal Care Specialties: Quaternary Ammonium Compounds:

QUATREX STC-25:
Stearalkonium Chloride
White Paste
Activity, %: 18
This product's stable, emulsified form facilitates handling and minimizes compounding problems. An ideal choice for after-shampoo cream rinses.

QUATREX STC-85:
Stearalkonium Chloride
Waxy Flakes
Activity, %: 85
An effective hair conditioner and softener. Its high concentration and free-flowing form assure a homogeneous and reproducible end product. Well suited for conditioners, protein packs and mousses.

QUATREX S:
Soyamidopropyl Dimethyl Benzyl Ammonium Chloride
Amber Liquid
Activity, %: 25
A unique, liquid cationic exhibiting excellent substantivity and conditioning properties. Its anionic compatibility is ideal in formulating true conditioning shampoos. Its solubility properties create new possibilities for sprays, mousses, setting gels and conditioners.

QUATREX CTAC:
Cetrimonium Chloride
Liquid
Activity, %: 29
Versatile, cold water dispersible quaternary surfactant. Forms transparent dispersions. Effective conditioning agent in all types of hair treatment applications.

QUATREX CRC:
Cetearyl Alcohol, PEG-40 Castor Oil (and) Stearalkonium Chloride
Waxy Flakes
A concentrated, blended flake designed to produce easily compounded and economical cream rinses. Fully compatible with esters, fatty alcohols and proteins.

QUATREX CT-100:
Stearyl Alcohol (and) Cetrimonium Bromide
White Flakes
Premium creme rinse concentrate. Provides superb compatibility and unique conditioning properties. Used extensively in top-of-the-line salon and professional products.

DANIEL PRODUCTS CO.: DISPERSE-AYD Multi-Functional Pigment Dispersing Agents:

DISPERSE-AYDS are blends of several surface active materials working synergistically to wet and deflocculate pigments and to stabilize the finished dispersions.

Each DISPERSE-AYD, properly used, will do much more than any single surfactant. DISPERSE-AYDS provide:

1. Rapid pigment wetting
2. Good flow at high pigment loading
3. Increased mill output
4. Maximum tinting strength development
5. Full chroma development
6. Minimum floating, flooding and rub-up
7. Compatibility in a broad range of coatings
8. Long term viscosity stability
9. Optimum initial gloss with stability on aging
10. Freedom from hard settling

DISPERSE-AYD W-22 and W-28:
For Water-Thinned Coatings

Both DISPERSE-AYD W-22 and W-28 are effective with a wide range of pigments.

Composition: Blends of anionic and non-ionic surface active materials.

DISPERSE-AYD W-22:
Active Ingredients: 35.0%
Viscosity (Gardner-Holdt): R to V
Color (Gardner): 3 to 7
Wt./Gal. (Sp. Gr.): 8.8 Lbs. (1.06)
pH of 10% Aqueous Solution: 8.5-9.5
Surface Tension of 0.1% Solution: 43.3 dynes/cm.
Surface Tension of 1.0% Solution: 36.4 dynes/cm.
Flash Point: 225F/107C

DISPERSE-AYD W-28:
Active Ingredients: 55.0%
Viscosity (Gardner-Holdt): G to J
Color (Gardner): 5 to 9
Wt./Gal. (Sp. Gr.): 8.7 Lbs (1.04)
pH of 10% Aqueous Solution: 10.5-11.5
Surface Tension of 0.1% Solution: 39.6 dynes/cm.
Surface Tension of 1.0% Solution: 35.0 dynes/cm.
Flash Point: 225F/107C

DANIEL PRODUCTS CO.: DISPERSE-AYD Multi-Functional Pigment Dispersing Agents (Continued):

DISPERSE-AYD 15:

For high performance solvent-thinned coatings

DISPERSE-AYD 15 is a pigment dispersing vehicle that can be used without modification to prepare concentrated dispersions of most pigments for use in a wide range of high performance, solvent-thinned coatings.

Composition: Modified thermoplastic acrylic in propylene glycol monomethyl ether acetate (PM Acetate).

Suggested Use: DISPERSE-AYD 15 should be used to make highly concentrated pigment dispersions which can either be let down directly into finished coatings or converted into stable, non-flaking tinting pastes for both in-plant and machine tinting.

Specifications:

Solids: 65.0%
Solvent: PM Acetate
Flash Point: 108F/43C
Wt./Gal. (Sp. Gr.): 8.7 Lbs (1.04)
Viscosity (Gardner-Holdt): V-Z
Color (Gardner): 8 Max.

DISPERSE-AYD 9100 Powdered Dispersing Resin:

For high performance non-aqueous coatings

DISPERSE-AYD 9100 is a solvent-free pigment dispersing resin in powder form. It is soluble in a wide variety of solvents, monomers and reactive diluents and compatible with most solvent-thinned and many solvent-free coating vehicles. It can be used as the sole dispersing resin to prepare highly concentrated dispersions of both organic and inorganic pigments. It also will function as an additive to improve the dispersing characteristics of many vehicles with poor pigment wetting properties.

Composition: Modified thermoplastic acrylic.

Use as a Dispersing Additive:

DISPERSE-AYD 9100 can significantly improve the pigment dispersing properties of formulas based on nitrocellulose, high solids polyester, vinyls, epoxies and other poor wetting vehicles.

Use as a Dispersing Resin:

DISPERSE-AYD 9100 should first be put into solution at approximately 60% solids. The solution should then be used to make highly concentrated pigment dispersions which can either be let down directly into finished coatings or converted into stable, non-flaking tinting pastes for both in-plant and machine tinting.

Specifications:

Solids: 100%
Form: Powder
Color: White to Pale Yellow
Wt./Gal. (Sp.Gr.): 8.85 lbs (1.06)
Acid Number: <2

DANIEL PRODUCTS CO.: DISPERSE-AYD Multi-Functional Pigment Dispersing Agents (Continued):

DISPERSE-AYD 1 Broad Spectrum Dispersing Agent:
For solvent-thinned coatings
DISPERSE-AYD 1 is a versatile wetting, dispersing and stabilizing aid for solvent thinned coatings. It efficiently wets and deflocculates most organic and inorganic pigments and then stabilizes the finished dispersion to prevent both hard setting and reagglomeration.
Composition:
A proprietary reaction product of high molecular weight surface active materials with a long oil alkyd. The alkyd portion acts as an auxiliary film former to minimize or prevent the detrimental side effects often associated with surfactants.
Suggested Use:
Effective at all usage levels. Pigment dispersions in many of the vehicles listed above can be substantially improved by replacing vehicle solids with 5% to 10% DISPERSE-AYD 1.
Specifications:
Solids: 75.0%
Solvent: Mineral Spirits (<8% Aromatic)
Flash Point: 104F/40C
Wt./Gal. (Sp.Gr.): 8.1 Lbs. (0.97)
Viscosity (Gardner-Holdt): Q to T
Color (Gardner): 12 Max.

DISPERSE-AYD XL-1/80:
For "Universal" tinting colors
DISPERSE-AYD XL-1/80 is a dispersing vehicle designed for use in manufacturing glycol-free colorants for in-plant and machine tinting.
Composition:
A blend of surface active materials with the right lipophilic-hydrophilic balance for compatibility with water- and solvent-thinned systems.
Suggested Use:
For best results DISPERSE-AYD XL-1/80 should be diluted in the ratio of 10:6 with odorless mineral spirits or other suitable organic solvent. The maximum pigment concentration obtainable with the diluted DISPERSE-AYD XL-1/80 vehicle is approximately 20% for organic pigments and 65% for inorganic pigments.
Specifications:
Solids: 75.0%
Active Ingredients: 80.0%
Solvent: Odorless Mineral Spirits
Flash Point: 128F/53C
Wt./Gal. (Sp. Gr.): 8.0 Lbs (0.95)
Color (Gardner): 8-10
Viscosity (Gardner-Holdt): S-V

DANIEL PRODUCTS CO.: DISPERSE-AYD Multi-Functional Pigment Dispersing Agents (Continued):

DISPERSE-AYD 6 & 8 Dispersing Agents:
For carbon black in solvent-thinned coatings

DISPERSE-AYD 6 and 8 are combination wetting, dispersing, and deflocculating agents for use with carbon black pigments in solvent-thinned coatings. The dispersion of carbon black in solvent-thinned coatings is sufficiently complex that it is often not possible for a single material to function satisfactorily as both dispersion additive and complex dispersing vehicle.

Dispersing Additive, DISPERSE-AYD 6:
Composition: A synergistic blend of wetting and dispersing agents.
Suggested Use: 2% to 3% added to the mill base to improve dispersion charactaristics of most solvent-thinned vehicles. Potential benefits include: lower viscosity, higher pigment loading, improved fineness of grind, reduced grinding time, maximum jetness of masstone blacks and reduced floating and flooding with tinting blacks.

Grinding Vehicle, DISPERSE-AYD 8:
Composition: A blend of a modified alkyd combined with the same surfactant groups used in DISPERSE-AYD 6.
Suggested Use: Sole grinding vehicle in highly concentrated mill bases to provide maximum dispersion efficiency, stability and compatibility. These mill bases can either be let down directly into finished paints or converted to stable, non-flaking tinting pastes adding vehicle solids.

DISPERSE-AYD 6:
Solids: 82.0%
Solvent: Xylene
Flash Point: 81F/27C
Wt./Gal. (Sp.Gr.): 8.4 Lbs (1.01)
Viscosity (Gardner Holdt): Q to S
Color (Gardner): 15 Max.

DISPERSE-AYD 8:
Solids: 65.0%
Solvent: Mineral Spirits (<8% Aromatic)
Flash Point: 104F/40C
Wt./Gal. (Sp.Gr.): 8.0 Lbs (0.96)
Viscosity (Gardner Holdt): C to F
Color (Gardner): 15 Max.

DEXTER CHEMICAL CORP.: STRODEX Surfactants:

STRODEX PK-90:
Chemical Class: Phosphated Coester of Alcohol and Aliphatic Ethoxylate
Viscous Liquid
Active Ingredient %: 90+-2
Gardner Color: 2 Max
Brookfield Viscosity cps at 25C: 7000+-2000
Flash Point (F) TCC: 262 Boiling Pt
Specific Gravity at 25C: 1.15
pH of Product: 10.5
pH 1% Solution: 7.5

STRODEX PK-80A:
Chemical Class: Phosphated Coester of Alcohol and Aliphatic Ethoxylate
Clear Liquid
Active Ingredient %: 67+-2
Gardner Color: 4 Max
Brookfield Viscosity cps at 25C: 110+-40
Flash Point (F) TCC: 120
Specific Gravity at 25C: 1.07
pH of Product: 12
pH 1% Solution: 10

STRODEX PK-95G:
Chemical Class: Phosphated Coester of Alcohol and Aliphatic Ethoxylate
Clear Liquid
Active Ingredient %: 81+-2
Gardner Color: 2 Max
Brookfield Viscosity cps at 25C: 1700+-300
Flash Point (F) TCC: 262 Boiling Pt
Specific Gravity at 25C: 1.15
pH of Product: 10.5
pH 1% Solution: 7.3

STRODEX PSK-28:
Chemical Class: Phosphated Coester of Alcohol and Aliphatic Ethoxylate
Clear Liquid
Active Ingredient %: 57+-2
Gardner Color: 2 Max
Brookfield Viscosity cps at 25C: 90+-20
Flash Point (F) TCC: 125
Specific Gravity at 25C: 1.03
pH of Product: 8.5
pH 1% Solution: 7.4

DEXTER CHEMICAL CORP.: STRODEX Surfactants (Continued):

STRODEX MOK-70:
Chemical Class: Phosphated Alcohol
Gel
Active Ingredient %: 70+-1
Gardner Color: 3 Max
Brookfield Viscosity cps at 25C: Paste-Like
Flash Point (F) TCC: 120
Specific Gravity at 25C: 1.14
pH of Product: 8.6
pH 1% Solution: 7.2

STRODEX SEK-50:
Chemical Class: Phosphated Aliphatic Ethoxylate
Clear Liquid
Active Ingredient %: 50+-1
Gardner Color: 2 Max
Brookfield Viscosity cps at 25C: 80+-10
Flash Point (F) TCC: 120
Specific Gravity at 25C: 1.00
pH of Product: 7.0
pH 1% Solution: 6.8

STRODEX MRK-98:
Chemical Class: Phosphated Aromatic Ethoxylate
Hazy Viscous Liquid
Active Ingredient %: 96+-1
Gardner Color: 4 Max
Brookfield Viscosity cps at 25C: 4500+-1000
Flash Point (F) TCC: 286 Boiling Pt
Specific Gravity at 25C: 1.08
pH of Product: 8.2
pH 1% Solution: 7.0

DEXTER CHEMICAL CORP.: STRODEX Surfactants (Continued):

Although the STRODEXES have common multi-functions, following are some specific advantages:

STRODEX PK-90, PK-80A*, PK-95G:**

Very efficient dispersing/wetting agents
- * extremely effective for iron oxide color pigments.
- * effective auxiliary for titanium dioxide pigments.
- * promotes color acceptance.

Eliminates or minimizes hazing in gloss or semi-gloss paints

Wets out difficult-to-wet surfaces

Helps prevent crawling, cratering and pinholeing

Anti-rusting properties
- * helps to minimize nailhead and flash rusting.

Effective with polymeric paint thickeners

Sometimes helps reduce blocking

STRODEX PSK-28:

General purpose dispersant/wetting agent
- * disperses iron oxide and other pigments, promotes high color acceptance.

STRODEX SEK-50:

Auxiliary pigment dispersant
- * promotes high color acceptance

STRODEX MOK-70:

Stabilizer for zinc oxide in latex paints
- * improves package stability of exterior latex coatings containing zinc oxide or other similarly reactive pigments

Rust inhibitor
- * protects against flash rusting over steel surfaces

More hydrophobic than other neutralized STRODEX surfactants
- * good surface wetting
- * effective wetting of organic pigments in aqueous media
- * complements oil or alkyd modified latex formulations

STRODEX MRK-98:
- * most oil soluble of neutralized STRODEX products.
- * effective in heavy duty maintenance finishes.
- * aids stability and color development.

* Essentially STRODEX PK-90 in isopropyl alcohol with pH adjusted to 12.

** STRODEX PK-90 with diethylene glycol added.

DOW CHEMICAL CO.: DOWFAX Anionic Surfactants:

DOWFAX 2A1 Surfactant:
Appearance: Clear, Amber Liquid
Hydrophobe Source: Tetrapropylene
Molecular Weight: 575
Active Ingredient, min: 45%
Density, g/cc @ 25C: 1.16
Viscosity, cps @ 25C: 145

DOWFAX 3B2 Surfactant:
Appearance: Clear, Amber Liquid
Hydrophobe Source: C10 Alpha-olefin
Molecular Weight: 542
Active Ingredient, min: 45%
Density, g/cc @ 25C: 1.16
Viscosity, cps @ 25C: 120

DOWFAX 8390 Surfactant:
Appearance: Clear, Amber Liquid
Hydrophobe Source: C16 Alpha-olefin
Molecular Weight: 642
Active Ingredient, min: 35%
Density, g/cc @ 25C: 1.11
Viscosity, cps @ 25C: 10

DOWFAX 2EP Surfactant:
Appearance: Pale Brown Liquid
Hydrophobe Source: Tetrapropylene
Molecular Weight: 575
Active Ingredient, min: 45%
Density, g/cc @ 25C: 1.16
Viscosity, cps @ 25C: 145

DOWFAX 8174 Surfactant:
Appearance: Clear, Amber Liquid
Hydrophobe Source: C12 Alpha-olefin
Molecular Weight: 575
Active Ingredient, min: 45%
Viscosity, cps @ 25C: 131

XDS 8292.00 Surfactant:
Appearance: Clear, Amber Liquid
Hydrophobe Source: C6 Alpha-olefin
Molecular Weight: 474
Active Ingredient, min: 45%
Density, g/cc @ 25C: 1.1954
Viscosity, cps @ 25C: 50.4

DUPONT CO.: DUPONT Sulfonates:

DUPONT offers eight sulfonate products for use in such diverse applications as textile and paper manufacture, metal working, petroleum, and agricultural chemicals. There are five alkyl sulfonates--PETROWET R; ALKANOL 189-S; and AVITONE A, F, and T--and three alkylaryl sulfonates--ALKANOL XC, WXN, and ND--all of which offer a combination of surface-active properties and good stability, making them valuable in a wide variety of industrial applications. PETROWET R and ALKANOL 189-S, XC, and WXN are surfactants; ALKANOL ND and F are dyeing assistants; and AVITONE F and T are softeners.

PETROWET R:
Sodium alkyl sulfonate
Active Ingredient %: 22
Yellow to amber clear liquid
Odor: Alcoholic
pH of Aqueous Solution: 4-6 (1%)/8-10 (100%)
Density 25C (77F): 1.08
Pounds Per Gallon: 9.0
Viscosity cp: 15
Flash Point C/F: 26/79
Cloud Point C/F: <0/<32
Water Soluble: Soluble

ALKANOL 189-S:
Sodium alkyl sulfonate
Active Ingredient %: 31.5
Reddish-brown liquid
Odor: Alcoholic
pH of Aqueous Solution: 7.5-9 (1%)/8-10 (100%)
Density 25C (77F): 1.06
Pounds Per Gallon: 8.8
Viscosity cP: 30
Flash Point C/F: 21/70
Cloud Point C/F: <0/<32
Water Soluble: Soluble

ALKANOL XC:
Sodium alkyl-naphthalene sulfonate
Active Ingredient %: 90
Light buff powder
Odor: Naphthenic
pH of Aqueous Solution: 9.5-10 (1%)
Density 25C (77F): 0.41
Pounds Per Gallon: 3.4
Water Soluble: Soluble

DUPONT: DUPONT Sulfonates (Continued):

ALKANOL WXN:
Sodium alkyl-benzene sulfonate
Active Ingredient %: 30
Light yellow liquid
Odor: Alcoholic
Density 25C (77F): 1.03
Viscosity cP: 18
Flash Point: C/F: 28/83
Cloud Point: C/F: 0/32
Water Soluble: Soluble

ALKANOL ND:
Sodium alkyl diaryl sulfonate
Active Ingredient %: 45
Clear yellow liquid
Odor: Slightly medicinal
Density 25C (77F): 1.15
Pounds Per Gallon: 9.6
Viscosity cP: 118
Flash Point C/F: Extinguishes flame
Cloud Point: C/F: <0/<32
Water Soluble: Soluble

AVITONE A:
Sodium alkyl sulfonate
Active Ingredient %: 75
Light tan paste
Odor: Bland
pH of Aqueous Solution: 7.5-9.0 (10%)
Density 25C (77F): 1.02
Pounds Per Gallon: 8.4
Flash Point: C/F: None/None
Cloud Point: C/F: None/None
Water Soluble: Dispersible

AVITONE F:
Sodium alkyl sulfonate
Active Ingredient %: 40
Viscous reddish liquid
Odor: Bland
pH of Aqueous Solution: 7-9 (10%)
Density 25C (77F): 1.05
Pounds Per Gallon: 8.8
Flash Point: C/F: >104/>220
Cloud Point: C/F: <0/<32
Water Soluble: Dispersible

AVITONE T:
Sodium alkyl sulfonate
Active Ingredient %: 76
Tan viscous paste
Odor: Bland
pH of Aqueous Solution: 1.04
Pounds Per Gallon: 8.7
Flash Point: C/F: None/None
Water Soluble: Dispersible

DUPONT CO.: ZONYL Fluorosurfactants:

FSA:
- Ionic Type: Anionic
- Liquid
- Percent Solids: 25
- Diluent: Water/Isopropyl Alcohol, 37.5:37.5
- Density 25C (77F):
  - g/mL: 1.03
  - lb/gal: 8.6
- Flash Point: C/F: 21/69
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 22
  - 0.10% Solids: 18

FSP:
- Ionic Type: Anionic
- Liquid
- Percent Solids: 35
- Diluent: Water/Isopropyl Alcohol, 45:20
- Density 25C (77F):
  - g/mL: 1.15
  - lb/gal: 9.6
- Flash Point: C/F: 24/75
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 24
  - 0.10% Solids: 21

FSE:
- Ionic Type: Anionic
- Liquid
- Percent Solids: 14
- Diluent: Water/Ethylene Glycol, 62:24
- Density 25C (77F):
  - g/mL: 1.12
  - lb/gal: 9.3
- Flash Point: C/F: >93/>200
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 27
  - 0.10% Solids: 20

UR:
- Ionic Type: Anionic
- Paste (M.P. 50C, 122F)
- Percent Solids: 100
- Diluent: None
- Density 25C (77F):
  - g/mL: 1.84
  - lb/gal: 15.3
- Flash Point: C/F: >93/>200
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 40
  - 0.10% Solids: 28

DUPONT CO.: ZONYL Fluorosurfactants (Continued):

FSJ:
- Ionic Type: Anionic
- Liquid
- Percent Solids: 40
- Diluent: Water/Isopropyl Alcohol, 45:15
- Density 25C (77F):
  - g/mL: 1.12
  - lb/gal: 9.3
- Flash Point, C/F: 28/82
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 26
  - 0.10% Solids: 21

FSN:
- Ionic Type: Nonionic
- Liquid
- Percent Solids: 40
- Diluent: Water/Isopropyl Alcohol, 30:30
- Density 25C (77F):
  - g/mL: 1.06
  - lb/gal: 8.8
- Flash Point, C/F: 22/72
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 24
  - 0.10% Solids: 23

FSN-100:
- Ionic Type: Nonionic
- Thin Paste
- Percent Solids: 100
- Diluent: None
- Density 25C (77F):
  - g/mL: 1.35
  - lb/gal: 11.2
- Flash Point, C/F: >93/>200
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 24
  - 0.10% Solids: 23

FSO:
- Ionic Type: Nonionic
- Turbid Liquid
- Percent Solids: 50
- Diluent: Water/Ethylene Glycol, 25:25
- Density 25C (77F):
  - g/mL: 1.35
  - lb/gal: 11.2
- Flash Point, C/F: >93/>200
- Aqueous Surface Tensions dynes/cm:
  - 0.01% Solids: 19
  - 0.10% Solids: 19

DUPONT CO.: ZONYL Fluorosurfactants (Continued):

FSO-100:
Ionic Type: Nonionic
Turbid Liquid
Percent Solids: 100
Diluent: None
Density 25C (77F):
g/mL: 1.35
lb/gal: 11.2
Flash Point, C/F: >93/>200
Aqueous Surface Tensions dynes/cm:
0.01% Solids: 19
0.10% Solids: 18

FSC:
Ionic Type: Cationic
Liquid
Percent Solids: 50
Diluent: Water/Isopropyl Alcohol, 25:25
Density 25C (77F):
g/mL: 1.16
lb/gal: 9.7
Flash Point, C/F: 21/70
Aqueous Surface Tensions dynes/cm:
0.01% Solids: 21
0.10% Solids: 19

FSK:
Ionic Type: Amphoteric
Liquid
Percent Solids: 47
Diluent: Acetic Acid
Density 25C (77F):
g/mL: 1.25
lb/gal: 10.4
Flash Point, C/F: 40/104
Aqueous Surface Tensions dynes/cm:
0.01% Solids: 21
0.10% Solids: 19

TBS:
Ionic Type: Anionic
Slurry
Percent Solids: 33
Diluent: Water/Acetic Acid, 64:3
Density 25C (77F):
g/mL: 1.20
lb/gal: 10.0
Flash Point, C/F: >93/>200
Aqueous Surface Tensions dynes/cm:
0.01% Solids: 38
0.10% Solids: 24

EMULSION SYSTEMS INC.: ESI-TERGE Detergents:

ESI-DET 21-M:
Detergent Type: Nonionic
Percent Solids: 99 min.
pH (1% Solution): 8.0-9.0
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.35
Color: Amber
Detergent base for household and industrial cleaners. Viscosity builder.

ESI-DET CDA:
Detergent Type: Nonionic
Percent Solids: 99 min.
pH (1% Solution): 9.0-11.0
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.16
Color: Straw
Foam stabilizer and viscosity builder for household, cosmetic and industrial products. Use in dish detergents.

ESI-DET DCW:
Detergent Type: Nonionic/Anionic
Percent Solids: 59-61
pH (1% Solution): 6.5-7.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.75
Color: Straw
One step surfactant for producing viscous foaming dish detergents, hand soaps, car washes and all purpose cleaners.

ESI-DET EP-20:
Detergent Type: Anionic
Percent Solids: 99 min.
pH (1% Solution): 1.5-2.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 9.70
Color: Lt. Amber
Detergent for high alkali cleaners such as degreasers and steam cleaning compounds.

ESI-TERGE 320:
Detergent Type: Anionic
Percent Solids: 99 min.
pH (1% Solution): 1.5-2.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 9.70
Color: Straw
Detergent for high alkali cleaners such as degreasers and steam cleaning compounds.

EMULSION SYSTEMS INC.: ESI-TERGE Detergents (Continued):

ESI-TERGE 330:
Detergent Type: Anionic
Percent Solids: 99 min.
pH (1% Solution): 1.5-2.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 9.18
Color: Straw
Coupling agent for high caustic cleaners. Use in oven cleaners and low foaming machine dishwashes.

ESI-TERGE LHS 40% Coconut Oil Soap:
Detergent Type: Soap
Percent Solids: 40
pH (1% Solution): 9.5-10.0
Viscosity (1% Soln): Water Thin
Pounds/Gallon: 8.33
Color: Straw
Use as hand soap or FDA approved chain lubricant.

ESI-TERGE B-15:
Detergent Type: Nonionic
Percent Solids: 99 min.
pH (1% Solution): 9.8-10.8
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.40
Color: Amber
Detergent base for household and industrial cleaners. Maximum viscosity builder when modified with fatty acids.

ESI-TERGE HA-20:
Detergent Type: Nonionic/Anionic
Percent Solids: 99 min.
pH (1% Solution): 7.5-8.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.64
Color: Amber
Versatile surfactant for making viscous all purpose cleaners, degreasers and wax strippers. Alkali stable.

ESI-TERGE L-75:
Detergent Type: Nonionic/Anionic
Percent Solids: 65
pH (1% Solution): 8.0-9.0
Viscosity (1% Soln): Medium
Pounds/Gallon: 9.07
Color: Amber
One step surfactant for producing viscous foaming dish detergents, hand soaps, car washes and all purpose cleaners.

EMULSION SYSTEMS INC.: ESI-TERGE Detergents (Continued):

ESI-TERGE L-80:
Detergent Type: Nonionic/Anionic
Percent Solids: 60
pH (1% Solution): 6.5-7.5
Viscosity (1% Soln): Medium
Pounds/Gallon: 8.75
Color: Amber
One step surfactant for producing viscous foaming dish detergents, hand soaps, car washes and all purpose cleaners.

ESI-TERGE RT-61:
Detergent Type: Nonionic/Anionic
Percent Solids: 84
pH (1% Solution): 6.5-7.5
Viscosity (1% Soln): Thin
Pounds/Gallon: 8.00
Color: Water Clear
Detergent base for oil and grease emulsifiers. Use in degreasers contianing no glycol ethers. Use in carpet extraction cleaners.

ESI-TERGE S-10:
Detergent Type: Nonionic
Percent Solids: 99 min.
pH (1% Solution): 9.0-11.0
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.16
Color: Straw
Foam stabilizer and viscosity builder for household, cosmetic and industrial products. Use in dish detergents.

ESI-TERGE T-5:
Detergent Type: Nonionic
Percent Solids: 99 min.
pH (1% Solution): 8.5-9.5
Viscosity (1% Soln): Heavy
Pounds/Gallon: 8.08
Color: Amber
Detergent base for household and industrial cleaners. Viscosity builder.

ESI-TERGE T-60:
Detergent Type: Anionic
Percent Solids: 60
pH (1% Solution): 6.5-7.5
Viscosity (1% Soln): Medium
Pounds/Gallon: 9.10
Color: Amber
Gentle base for use in hand dishwash detergents, synthetic hand soaps and car washes. High foamer.

ETHYL CORP.: EPAL Fatty Alcohols:

EPAL fatty alcohols are even-numbered straight-chain primary alcohols of high purity. EPAL fatty alcohols are available as pure cuts or as blends, some of which are described in this table. Other blends can also be made available on request.

Primary Applications are for use as intermediates in surfactants, plasticizers, lubricant additives, thioesters and other specialty chemicals. Typical surfactant derivatives include alcohol ethoxylates, alcohol sulfates and alcohol ether sulfates. EPAL fatty alcohols are also used as aluminum rolling lubricants, emollients and for other specialty applications.

6:
99.6 hexanol
Hydroxyl Value mg. KOH/g.: 548
Distill. Range, C: 151-160
Freeze Point C: -49
Flash Point C: 61

8:
99.5 octanol
Hydroxyl Value mg. KOH/g.: 431
Distill. Range, C: 184-195
Freeze Point C: -14
Flash Point C: 88

10:
99.1 decanol
Hydroxyl Value mg. KOH/g.: 354
Distill. Range, C: 226-230
Freeze Point C: 8
Flash Point C: 113

12:
99.6 dodecanol
(laurel alcohol)
Hydroxyl Value mg. KOH/g.: 301
Distill. Range, C: 258-264
Freeze Point C: 24
Flash Point C: 132

14:
99.4 tetradeconal
(myristyl alcohol)
Hydroxyl Value mg. KOH/g.: 261
Freeze Point C: 35
Flash Point C: 149

ETHYL CORP.: EPAL Fatty Alcohols (Continued):

16NF:
97.9 hexadecanol
(cetyl alcohol)
Meets all requirements of USP National Formulary
Hydroxyl Value mg. KOH/g.: 232
Freeze Point C: 44
Flash Point C: 175

18NF:
99.2 octadecanol
(stearyl alcohol)
Meets all requirements of USP National Formulary
Hydroxyl Value mg. KOH/g.: 207
Freeze Point C: 54
Flash Point C: 191

108:
55 octanol/41 decanol/4 hexanol
Hydroxy Value mg. KOH/g.: 404
Distill. Range, C: 197-237
Freeze Point C: -20
Flash Point C: 88

610:
42 octanol/54 decanol/4 hexanol
Hydroxyl Value mg. KOH/g.: 393
Distill. Range, C: 183-242
Freeze Point C: -17
Flash Point C: 79

810:
45 octanol/54 decanol
Hydroxyl Value mg. KOH/g.: 386
Distill. Range, C.: 178-240
Freeze Point C: -10
Flash Point C: 90

1012:
75 decanol/23 dodecanol
Hydroxyl Value mg. KOH/g.: 344
Distill. Range, C.: 230-265
Freeze Point C: -5
Flash Point C: 113

12/85:
86 dodecanol/14 tetradecanol
Hydroxyl Value mg. KOH/g.: 297
Freeze Point C: 20
Flash Point C: 138

ETHYL CORP.: EPAL Fatty Alcohols (Continued):

12/70:
70 dodecanol/29 tetradecanol
Hydroxyl Value mg. KOH/g.: 288
Freeze Point C: 18
Flash Point C: 135

1214:
66 dodecanol/27 tetradecanol/6 hexadecanol
Hydroxyl Value mg. KOH/g.: 284
Distill. range, C: 233-299
Freeze Point C: 22
Flash Point C: 138

1218:
48 dodecanol/20 tetradecanol/14 octadecanol/17 hexadecanol
Hydroxyl Value mg. KOH/g.: 266
Freeze Point C: 25
Flash Point C: 125

1412:
58 tetradecanol/40 dodecanol
Hydroxyl Value mg. KOH/g.: 275
Distill. range, C: 2
Freeze Point C: 26
Flash Point C: 137

1416:
64 tetradecanol/40 hexadecanol
Hydroxyl Value mg. KOH/g.: 250
Freeze Point C: 36
Flash Point C: 143

RR1418:
35 tetradecanol/49 hexadecanol/23 octadecanol
Hydroxyl Value mg. KOH/g.: 235
Distill. range, C: 300-315
Freeze Point C: 42

1618RT:
66 hexadecanol/32 octadecanol/1 eicosanol
Hydroxyl Value mg. KOH/g.: 223
Flash Point C: >149

1618:
47 hexadecanol/50 octadecanol
Hydroxyl Value mg. KOH/g.: 219
Freeze Point C: 46
Flash Point C: 202

1618T:
32 hexadecanol/65 octadecanol
Hydroxyl Value mg. KOH/g.: 216
Freeze Point C: 41
Flash Point C: 177

20+:
66 linear and branched alcohols, C18 through C32
34 hydrocarbons, C24 through C40
Hydroxyl Value mg. KOH/g.: 105
Freeze Point C: 41
Flash Point C: 177

EXXON CHEMICAL CO.: Surfactants:

Acid Foamer:

Acid Foamer is a cationic surfactant designed to provide dense, stable foam in strong acids such as hydrochloric, hydrofluoric, and sulfuric acids. For milder acids such as phosphoric, citric, and and acetic Tomah recommends their line of amphoterics.

Free amine + amine hydrochloride: 5% max.
Color, Gardner: 13 max.
pH, 5% solution: 6-9
% active: 95 typical
Dark amber liquid
Density @ 23C: 8.8 lb/gal

Performance Properties:

* Provides 99% inhibition of HCl or H2SO4 on SS
* Excellent stability in highly concentrated acids
* Produces dense, long lasting foam capable of clinging on vertical surfaces
* Allows substitution of sulfuric acid for commonly used phosphoric acid, resulting in better performance at lower cost.
* Replaces nonionics, offering better stability and foam.

Acid Thickener:

Acid Thickener is a cationic surfactant that was originally designed to thicken hydrochloric acid, which it does very effectively on its own; however, when used in combination with sodium chloride (salt), it will thicken a variety of acid systems including phosphoric, sulfuric, hydrofluoric, citric, oxalic, etc. By varying the ratio between Acid Thickener and salt, you can adjust the viscosity to a given specification. Acid Thickener is a multi-functional material that provides thickening, wetting, corrosion inhibition, and perfume solubilization.

Amber paste
Weight/gallon, 25C: 7.6 lbs.
Specific Gravity, 25C: 0.91
Pour Point: 80F
Flash Point: >200F

Performance Properties:

* Long term viscosity stability
* Ability to thicken both inorganic and organic acids
* Can replace nonionics used for wetting and perfume solubilization
* 90% corrosion inhibition in HCl acid.
* Easy to solubilize

EXXON CHEMICAL CO.: Surfactants (Continued):

Alkali Surfactant NM:

Alkali Surfactant NM is a unique 35% active amphoteric. Alkali Surfactant is used extensively in alkaline cleaning formulations due to its superior coupling and wetting capabilities.

Solids (%): 35% Min.
Color, Gardner: 7 Max.
pH, 5% solution: 6-9
Specific Gravity, 25C: 1.04
Light amber liquid

Performance Properties:

* Tremendous coupling agent for nonionics
* Moderate foam
* Excellent wetting
* Compatible with anionics, cationics, and nonionics
* Excellent stability in alkali, acids, and highly concentrated electrolytes
* Exceptionally P.U.R.E. - far fewer by-products than imidazoline amphoterics
* Increased substantivity within the Zwitterionic range (typically pH 2-4)

Amphoteric L:

Amphoteric L is a mild surfactant typically used as a foam stabilizer, booster and viscosifier in systems which require copious foam and mildness. As an amphoteric, it offers compatibility in a wide range of systems; anionic, nonionic, and cationic.

Amphoteric L offers good detergency and superior wetting. When added to anionic or nonionic detergents, Amphoteric L will enhance foam stability. Amphoteric L is stable in both mildly alkaline and mildly acidic media. If stability is desired in highly acidic or alkaline media, one of the EXXON iminodipropionate amphoterics should be selected.

Coco amphoteric
Solids, %: 37 min.
Color, Gardner: 6 max.
pH, 5% solution: 5-8
Specific gravity @ 25C: 1.04
Pour point: 35F

Performance Properties:

* High foam
* Excellent wetting agent
* Improves detergency
* Compatible with anionic, nonionic, and cationic systems

EXXON CHEMICAL CO.: Surfactants (Continued):

Amphoteric N:

TOMAH Amphoteric N is a unique amphoteric surfactant with exceptionally high foaming properties in the presence of many other surfactants and components typically used in shampoos and personal care products. Amphoteric N is a modified dipropionate amphoteric supplied as a 35% aqueous solution of the partial sodium salt. Amphoteric N is CTFA listed as Sodium C12-15 Alkoxypropyl Iminodipropionate.

Solids: 33% Min.
Color, Gardner: 6 Max.
pH, 5% solution: 6-9
Specific Gravity, 25C: 1.04
Light amber liquid

Performance Properties:

* High foam wetting agent
* Excellent coupling properties
* Good detergent
* Exceptionally P.U.R.E. - far fewer by-products than imidazoline amphoterics
* Compatible with anionics, cationics, and nonionics
* Salt free

Amphoteric SC:

Amphoteric SC is a unique 35% active amphoteric designed for use in alkaline and acid cleaners. It offers excellent coupling, stability, foaming and wetting and is compatible in a wide range of systems: anionic, nonionic, and cationic. Amphoteric SC has been specifically designed to compete with certain imidazoline amphoterics. Although chemically different, Amphoteric SC provides similar coupling and foaming, yet has better wetting.

Solids, %: 35-38%
Color, Gardner: 2-7
pH: 5-9
Clear, light amber liquid
Pour Point: 30F
Surface Tension, 0.1% solution: 30 dynes
Specific Gravity @ 25C: 1.06

Performance Properties:

* Moderate foam
* Excellent wetting agent
* Improves detergency
* Compatible with anionic, nonionic, and cationic systems
* Alkaline/Acid stable

EXXON CHEMICAL CO.: Surfactants (Continued):

Amphoteric 400:

Amphoteric 400 is an extremely low foam amphoteric designed for use in hard surface alkaline or acid cleaning formulations where no foam is desired, such as in continuous metal cleaning with pressure spray. It also has application in machine dishwashing compounds, again where no foam is desired. Amphoteric 400 is an iminodipropionate amphoteric supplied as a 50% solution of the partial sodium salt.

Solids, %: 50% min.
Color, Gardner: 5 max.
pH 5% solution: 6-9
Specific gravity @ 25C: 1.09

Performance Properties:

* Very low foam
* Excellent stability in acids, alkali, and concentrated electrolytes
* Compatible in nonionic, cationic, and anionic systems
* Good coupling properties
* Brine stable

AO-14-2:

TOMAH AO-14-2 is an ether amine oxide derived from a branched chain C10 alcohol. TOMAH amine oxides are widely used in detergents to provide grease emulsification and soil suspension. Another use for amine oxides is in combination with quaternaries and nonionics to form a synergistic surfactant base for use in "built" household, institutional and industrial cleaning compounds. This system is considered a more environmentally safe alternative to solvent containing systems. In particular, it can replace the use of glycol ethers in cleaning compounds. This surfactant base provides the formulator with the ability to change the builder system to suit applications without having to change surfactants.

Activity, %: 50 min.
Color, Gardner: 3 max.
Total amine value: 83-89
Hydrogen peroxide, %: 0.35 max.
Pour point: <20F
Specific Gravity @ 59F: 0.956

Performance Properties:

* Moderate foam
* Excellent grease emulsification
* Excellent soil suspension characteristics
* Compatibility in nonionic, cationic, and anionic systems
* Viscosity building via pH change or salt addition

EXXON CHEMICAL CO.: Surfactants (Continued):

AO-728 Special:

TOMAH AO-728 Special is a high foaming 50% active amine oxide. It is a very effective foam booster/stabilizer in liquid detergent formulations. It is an economical replacement for lauryl dimethyl amine oxide and many alkanolamides. TOMAH AO-728 Special is manufactured from an ethoxylated tertiary amine. These amine oxides are generally considered to be milder to skin and eyes than amine oxides manufactured from methyl tertiary amines.

Activity, %: 50 min.
Color, Gardner: 3 max.
Total amine value: 72-79
Hydrogen peroxide, %: 0.35 max.
Pour point: <20F
Specific gravity, 59F: 0.958

Performance Properties:

* High foam
* Excellent detergency
* Foam boosting and stabilization
* Compatible in anionic, cationic, and nonionic systems
* Viscosity building via pH change or salt addition

Emulsifier Four:

Emulsifier Four is a dialkyl quaternary designed for emulsification of non-polar hydrophobes such as mineral seal oil, waxes and silicones. The major commercial use is in production of auto spraywax and carnauba spraywax. It has always been a problem to produce stable and effective spraywax because of normal variations in emulsification properties of cationic surfactants and mineral seal oils from one lot to another. These variations have caused separation, gelling, poor dilution, cloudiness, poor performance, and other problems for the spraywax producer. Emulsifier Four is closely quality controlled to minimize these problems.

% active: 75.0
Inert ingredients: H2O and IPA
Amber liquid
Density @ 25C: 8.0 lb/gal.

EXXON CHEMICAL CO.: Surfactants (Continued):

TEKSTIM 8741:

TEXSTIM 8741 is a unique nonionic surfactant which performs as a "splittable" emulisifier. That is, used cleaning solutions can be treated to split out the emulsified oil by adjusting the pH. The oil phase can be skimmed off for recovery or disposal and not be sent to the sewage treatment plant.

Hazy liquid
% Active: 100
SpG 20C: 0.99

TOMAH BExM-1:

Modifier for clay stabilized coal tar and asphalt emulsions

BExM-1 is a specially formulated (patent pending) cost-effective liquid cationic modifier for use in colloidal (clay stabilized) bituminous emulsions. This modifier exhibits exceptional performance in coal tar and asphalt emulsions. It is readily added to either type of emulsion, and does not require predispersion, solubilization or additional chemical treatment.

Advantages:

* Cured films appear a richer, darker black.
* Low dosage levels of BExM-1 are required.
* Emulsions of high viscosity grades are thixotropic and thin out under shear during mixing and application.
* Viscosities are consistent.
* Modified emulsions provide improved application properties and coverages.

BExM-1:

* can be post-added directly to the finished emulsion, no special injection systems, premixing, de-encapsulation or chemical adjustments are necessary.
* improves the emulsion's drying/curing time.
* promotes uniform distribution of filler and reinforcing materials.
* improves the emulsion's stability, reduces phase separation.
* is an excellent thickening/suspending agent for particulate materials.
* does not affect the pH of the emulsion, promotes stability.
* does not affect a coal tar's kerosene and water resistance.
* is cost effective.
* improves the finished emulsion's performance properties: pliability, sag, heat resistance, impact resistance.
* provides viscosity modification without increasing water retention.
* produces no dust or bag disposal problems.

EXXON CHEMICAL CO.: Surfactants (Continued):

TOMAH BExM-3:
Modifier for clay stabilized coal tar emulsions

BExM-3 is a specially formulated (patent pending) cost-effective cationic modifier for use in colloidal (clay stabilized) coal tar emulsions. BExM-3 offers significant performance and cost advantages versus latex and other additives used for thickening.

Performance Properties:
* Can be post added directly to the finished emulsion
* Increases adhesion to substrate
* Completely eliminates the need for latex additives for viscosifying emulsions
* Excellent for producing "Easy Stir" emulsions
* Does not affect coal tar's kerosene and water resistance
* Does not affect pH or emulsion stability
* Increases viscosity and promotes particulate suspension
* Does not promote bacterial growth
* Cost effective
* Improves cure times

GAF CHEMICALS CORP.: ALIPAL Ether Sulfates:

ALIPAL anionic surfactants are Ether Sulfates which find application in a variety of industries, notably agricultural, personal care and emulsion polymerization.

CD-128:
Ammonium salt of sulfated linear alcohol ethoxylate
Form: liquid
% Active: 58
High-foaming anionic surfactant especially effective in aqueous systems containing high concentrations of electrolytes.

CO-433:
Sodium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 28
High-foaming detergent with good wetting and dispersing properties. Good lime-soap dispersant.

CO-436:
Ammonium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 58
Used as detergent base for high-foaming dishwashing formulations, scrub soaps, car washes, rug and hair shampoos.

EP-100:
Ammonium salt of sulfated ethoxylate
Form: liquid
% Active: 30
Emulsifier for emulsion polymerization surfactant for mild light-duty liquids.

EP-110:
Ammonium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 30
Exceptionally versatile primary emulsifier and stabilizing agent for the preparation of vinyl acetate, vinyl acetate/acrylic, all acrylic, styrene/acrylic, and styrene/butadiene emulsion copolymers.

EP-115:
Ammonium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 30
More hydrophilic version of EP-110. Uses similar to EP-110.

GAF CHEMICALS CORP.: ALIPAL Ether Sulfates (Continued):

EP-120:
Ammonium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 30
More hydrophilic version of EP-110 and EP-115. Uses similar to EP-110 and EP-115.

EP-227:
Sodium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 30
Uses similar to those of EP-115 and EP-120, but more hydrophilic.

HF-433:
Ammonium salt of sulfated nonyl-phenol ethoxylate
Form: liquid
% Active: 27
High foaming anionic surfactant. Excellent base for shampoos or bubble baths due to considerable mildness to the skin.

GAFOAM AD:
Ammonium salt of sulfated linear alcohol ethoxylate
Form: liquid
% Active: 56
Excellent foaming agent especially effective in salt conditions of 12% or greater. Primarily used as an air drilling surfactant for oil and gas wells. Also used in well cleanout and as a mobility control agent for CO2. Reported use in ag chem foam field markers.

GAF CHEMICALS CORP.: ALKAMIDE Fatty Alkanolamides:

The ALKAMIDE alkanolamides are reaction products of monoethanolamine, diethanolamine or monoisopropanolamine with a fatty alkyl group.

Super (1:1) Amides:

CDO:
Cocamide DEA
amber liquid
CDM:
Cocamide DEA
amber liquid
CDE:
Cocamide DEA
yellow liquid
Coconut superamides for foam stabilizing and thickening of liquid detergent and toiletry preparations. Performance and odor improve with increased amide content.

CL63:
Cocamide DEA
Amber liquid
Enriched coconut diethanolamide foam stabilizer and thickener.

L9DE:
Lauramide DEA
White, waxy solid
Melting Point C: 51
Foam stabilizers, superfatting and thickening agents for liquid detergent, shampoo and bubble bath preparations.

L7DE:
Lauric/myristic DEA
White paste
Melting Point C: 34

L7DE-BT:
Lauramide DEA
Straw liquid
Liquified form of ALKAMIDE L7DE for ease of handling when formulating cosmetic preparations.

SDO:
Soyamide DEA
Amber liquid
Superfatting agent. A particularly effective thickener for low active shampoo and bubble bath preparations.

GAF CHEMICALS CORP.: ALKAMIDE Fatty Alkanolamides (Continued):

Super (1:1) Amides (Continued):

CME:
Cocamide MEA
White, waxy solid
Melting Point C: 56

L7ME:
Lauramide MEA
White, waxy solid
Melting Point C: 60

LIPA:
Lauramide MIPA
Light yellow solid
Melting Point C: 63-68
Foam stabilizers, their solid form is conducive to non tacky spray dried powdered detergent formulations. Excellent foam boosters at elevated temperatures.

HTME:
Stearamide MEA
Cream solid
Melting Point C: 85-90
Opacifier, thickener for shampoo, bubble bath, cream rinse and other water based systems.

HTDE:
Stearamide DEA
Cream solid
Melting Point C: 50-55
Thickener, emulsifier for vegetable oil, mineral oil and microcrystalline wax.

L7DE-PG:
Lauramide DEA
Amber liquid
Similar to L7DE but easier to handle.

1182:
Lauramide DEA
Amber liquid
Modified amide for shampoos and bubble baths.

1188:
Lauramide DEA
Clear liquid
Similar to 1182 but with better thickening properties. Skin conditioner in liquid soaps and bubble baths.

GAF CHEMICALS CORP.: ALKAMIDE Fatty Alkanolamides (Continued):

Super (1:1) Amides (Continued):

372:
Lauramide DEA
Clear yellow liquid
Foam and viscosity modifier for personal care applications.

1195:
Lauramide DEA
Clear liquid
Superfatting agent and thickener in toiletry formulations.

OIP:
Oleamide MIPA
Clear liquid to white paste
Melting Point C: 28
Foam modifier for high temperature cleaners.

Kritchevsky (2:1) Amides:

2104:
Cocamide DEA
Amber liquid
% Free DEA: 20-24
Detergent base for the manufacture of floor cleaners and all purpose cleaners.

2106:
Cocamide DEA
Amber liquid
% Free DEA: 17-20
Detergent base developed to solubilize high alkaline salt content floor cleaners and liquid hard surface cleaners.

2110:
Cocamide DEA
Amber liquid
% Free DEA: 29-33
Detergent base to solubilize high silicate concentrations in products such as liquid steam cleaners and wax strippers.

2112:
Formulated Base DEA
Amber liquid
% Free DEA: 30 min.
Detergent base for applications similar to ALKAMIDE 2110 but will produce lower foam levels.

GAF CHEMICALS CORP.: ALKAMIDE Fatty Alkanolamides (Continued):

Kritchevsky (2:1) Amides:

2124:
Chemical Type: Lauramide DEA
Appearance: straw solid
% Free DEA: 20-24
Combined with alkanolamine alcohol sulfates to produce low odor, viscous shampoo concentrates for the beauty trade.

2204:
Chemical Type: Cocamide DEA
Appearance: amber liquid
% Free DEA: 27-31
Detergent bases designed for all purpose cleaners and industrial and household floor cleaners and wax strippers where high viscosity is required.

1002:
Chemical Type: Cocamide DEA
Appearance: amber liquid
% Free DEA: 23-27
Thickener and foam stabilizer for HI&I applications.

W-197A:
Chemical Type: Cocamide DEA
Appearance: liquid

491:
Chemical Type: Amide blend
Appearance: amber liquid
Detergents for floor care and hard surface cleaners.

GAF CHEMICALS CORP.: ALKAMINOX Amine Ethoxylates:

The ALKAMINOX amine ethoxylates exhibit a strong affinity for negatively charged surfaces such as glass, metal and plastic.

T-12, 90%:
Alkyl Group: tallow
Appearance: amber liquid
HLB: 12.5
T-30, 90%:
Alkyl Group: tallow
Appearance: amber liquid
HLB: 16.6
T-50:
Alkyl Group: tallow
Appearance: yellow solid
HLB: 17.5
Excellent leveling agents for the dyeing of nylon with anionic dyes.

ALKAMOX Amine Oxides:
The ALKAMOX amine oxides are oxidized alkyl amines which function as foam modifiers, antistats and lime soap dispersants.

L20:
Alkyl Group: lauryl
Appearance: clear liquid
% Amine Oxide: 29-31
LO:
Alkyl Group: lauryl
Appearance: clear liquid
% Amine Oxide: 29-31
Excellent foamers, wetters and foam stabilizers for rug shampoos, fine laundry detergents, dishwashing detergents, shampoos, bubble baths, cleaner formulations and antistatic textile softeners.

CAPO:
Alkyl Group: cocamidopropyl
Appearance: clear liquid
% Amine Oxide: 29-31
Exhibits stronger foam stabilization characteristics than ALKAMOX LO, consequently it is particularly suited to hair shampoo formulations.

GAF CHEMICALS CORP.: ALKAMULS AG Agricultural Surfactants:

The ALKAMULS AG surfactants are proprietary blends developed for use in agricultural applications. The ALKAMULS AG series is appropriate for use in herbicide, pesticide and fungicide formulations, and is suitable for the development of both concentrates and wettable powders. Residues of these surfactants are exempt from tolerance requirements under EPA Regulation 40 CFR:180:1001(d) when used in accordance with good agricultural practice as inert ingredients in formulations developed for growing crops.

AG-821:
Ethoxylated ester nonionic blends
Appearance: clear amber liquid
% Active: 91
Premium emulsifier and adjuvant for 83/17 crop oil/surfactant concentrates.

AG-900:
Nonionic ethoxylate blend
Appearance: clear liquid
% Active: 92
Spreading and wetting agent for aqueous pesticide systems.

GAF CHEMICALS CORP.: ALKAMULS PEG Esters and Glyceryl Esters:

400-MO:
Chemical Type: Oleic
Appearance: yellow liquid
HLB: 11.0
This moderately water soluble surfactant is used in the textile industry as a dyeing assistant and in the leather industry as an emulsifier for neats-foot oil fat liquors.

EGMS:
Chemical Type: Stearic
Appearance: white solid
HLB: 2.9
Opacifying and pearlescing agent for liquid cosmetic and detergent compounds.

400-DO:
Chemical Type: Oleic
Appearance: amber liquid
HLB: 7.2
600-DO:
Chemical Type: Oleic
Appearance: amber liquid
HLB: 10.0
400-DL:
Chemical Type: Lauric
Appearance: yellow liquid
HLB: 10.0
These lipophilic members are used as emulsifiers and solubilizers for mineral oils, fats and solvents, as emulsifiers for kerosene and agricultural chemical sprays; as emulsifiers in metal working fluids, industrial lubricants and textile lubricants; and as viscosity control additives in amphoteric toiletry preparations.

6000-DS:
Chemical Type: Stearic
Appearance: cream solid
HLB: 18.4
Hydrophilic emulsifier and thickener used in textiles, printing, pigment manufacturing and personal care.

GMO-45LG:
Chemical Type: Monooleate
Appearance: amber liquid to paste
HLB: 3.0
Frequently used in mold release agents as a rust prevention additive for compounded oils and as a lubricant component in synthetic fiber spin finishes. Also used as a lubricant-antistat aid in processing PVC film.

GAF CHEMICALS CORP.: ALKAMULS Sorbitan Esters/Sorbitan Ester Ethoxylates:

ALKAMULS sorbitan esters and sorbitan ester ethoxylates are used in the personal care, household, industrial and textile industries as emulsifiers, solubilizers and lubricants.

Sorbitan Esters:

SML:
Chemical Type: monolaurate
Appearance: amber liquid
HLB: 8.6
Sorbitan monolaurate is a water dispersible emulsifier for oils and fats in cosmetic and industrial oil products.

SMO:
Chemical Type: monooleate
Appearance: amber liquid
HLB: 4.3
Sorbitan monooleate is a versatile oil soluble emulsifier and coupling agent for medicants and for petroleum oils, fats and waxes in the industrial, cosmetic and textile industries.

SMS:
Chemical Type: monostearate
Appearance: cream flake
HLB: 4.7
Sorbitan monostearate is used to prepare silicone defoamer emulsions for various industrial applications, paraffin wax emulsions for processing paper coatings and industrial oil emulsions.

STO:
Chemical Type: trioleate
Appearance: amber liquid
HLB: 1.8
Sorbitan trioleate is used to compound textile and leather softener finishes.

GAF CHEMICALS CORP.: ALKAMULS Sorbitan Esters/Sorbitan Ester Ethoxylates (Continued):

Sorbitan Ester Ethoxylates:

PSML-20:
Chemical Type: monolaurate
Appearance: yellow liquid
HLB: 16.7
This multipurpose o/w emulsifier is used extensively to solubilize vitamin oils, essential oils, balsam and tar preparations in cosmetics and pharmaceuticals and to solubilize fragrances in cosmetics.

PSMO-5:
Chemical Type: monooleate
Appearance: yellow liquid to paste
HLB: 10.0
In the textile industry, top quality fiber lubricants and softeners are prepared from ALKAMULS PSMO-5 emulsified oils.

PSMO-20:
Chemical Type: monooleate
Appearance: yellow liquid
HLB: 15.0
Functions as an emulsifier for aliphatic alcohols in tobacco sucker control concentrates.

PSMS-20:
Chemical Type: monostearate
Appearance: yellow liquid to paste
HLB: 15.0
Used as an o/w emulsifier for mineral oils, fats and waxes.

PSTS-20:
Chemical type: tristearate
Appearance: cream solid
HLB: 10.5
The pronounced lubricating and softening properties of ALKAMULS PSTS-20 make it useful in textile processing and in compounding textile finishes.

GAF CHEMICALS CORP.: ALKAQUAT Quaternary Compounds:

The ALKAQUAT quaternary compounds are cationic surfactants derived from long chain alkyl amines.

T:
Alkyl Group: Imidazoline
Appearance: yellow liquid
% Active: 74-76
ALKAQUAT T is a popular chemical compound used to produce liquid fabric softener preparations for the consumer market.

DMB-ST, 25%:
Alkyl Group: Stearyl
Appearance: white paste
% Active: 24-26
Strongly cationic and imparts antistatic properties to wool, cotton and other cellulosic fibers.

DAET-90:
Alkyl Group: Dialkyl
Appearance: yellow paste
% Active: 89-91
This complex ditallow quaternary exhibits a wide dispersion stability range along with good softening and antistat properties.

ALKAZINE Imidazolines:
The ALKAZINE imidazolines are specialty surfactants, which, when neutralized to a pH of 8.5 or lower, function as cationic emulsifiers for oil-in-water systems.

C:
Hydrophobe: coconut
Appearance: brown paste
% Solids: 85% min.
ALKAZINE C increases the lubricity of water soluble cutting oils and synthetic coolants.

O:
Hydrophobe: oleic
Appearance: amber liquid
% Solids: 85% min.
ALKAZINE O is the most popular member of the series and functions as an emulsifier for both carnauba wax and light mineral oil in car wax emulsions.

TO:
Hydrophobe: tall oil
Appearance: amber liquid
% Solids: 80% min.
ALKAZINE TO is used as an emulsifier for the production of cationic bitumen emulsions.

GAF CHEMICALS CORP.: ALKASIL Silicone Surfactants:

ALKASIL silicone surfactants are nonionic silicone polyalkoxylate block copolymers.

ALKASIL NE 58-50:
Appearance: colorless-light amber liquid
Type: nonhydrolyzable
Percent Active: 100
Wide applications in production of rigid polyurethane foams.

ALKASIL NEP 73-70:
Appearance: colorless-light amber liquid
Type: nonhydrolyzable
Percent Active: 100
Applications similar to 58-50, but of lower viscosity and freezing point for handling and storage convenience.

ALKASURF Ethoxylated Fatty Acids:
The ALKASURF ethoxylated fatty acids are nonionic surfactants used as detergents and emulsifiers.

075-7:
Alkyl Type: oleic
HLB: 10.0

O-9:
Alkyl Type: oleic
HLB: 11.0

075-9:
Alkyl Type: oleic
HLB: 11.0

PEL-9:
Alkyl Type: pelargonic
HLB: 12.6
These moderately water soluble emulsifiers are used primarily in textile products as dyeing assists.

O-14:
Alkyl Type: oleic
HLB: 13.0
Used as a co-emulsifier with O-7 and O-9 in various industrial applications.

S65-8:
Alkyl Type: stearic
HLB: 11.2
Self-emulsifying lubricant and softener in textile compositions designed for synthetic dyes.

L-9:
Alkyl Type: lauric
HLB: 12.8

L-14:
Alkyl Type: lauric
HLB: 14.6
Emulsifiers and co-emulsifiers for various cosmetic and toiletry preparation.

S65-40:
Alkyl Type: stearic
HLB: 17.0
Water soluble emulsifier for textile lubricants/softeners.

GAF CHEMICALS CORP.: ALKASURF Alkyl Benzene Sulfonates:

The ALKASURF alkyl benzene sulfonates are used as primary surfactants.

IPAM:
Isopropylamine DBS
Appearance: yellow liquid
% Active: 90-93
The isopropylamine derivative is an oil soluble emulsifier frequently used to formulate solvent degreasers, emulsion cleaners and dry cleaning charge soaps.

T:
Triethanolamine DBS
Appearance: Yellow liquid
% Active: 56-58
The triethanolamine derivative is a highly sudsing, completely water soluble intermediate suited to bubble bath and concentrated shampoo compositions.

CA:
Calcium DBS
Appearance: amber liquid
% Active: 59-61
The calcium derivative is completely biodegradable and is used extensively as an emulsifier in combination with ethoxylated nonionics in self-dispersing liquids.

ALKASURF Sulfosuccinates:

The ALKASURF sulfosuccinates are anionic surfactants used as both primary and secondary surfactants in personal care formulations.

SS-LA-3:
Alkyl Group: Ethoxylated lauryl alcohol
Appearance: Clear yellow liquid
% Active: 39-41
SS-L7DE:
Alkyl Group: Lauric diethanolamide
Appearance: Clear yellow liquid
% Active: 39-41
Mild water soluble detergents that possess both anionic and nonionic characteristics and will tolerate small amounts of cationic surfactants without interference.

SS-L9ME:
Alkyl Group: Lauric monoethanolamide
Appearance: White paste
% Active: 40 min.
SS-L9ME is used in high foaming rug shampoos because of its detergency, copious lather and formation of an extra dry residue.

GAF CHEMICALS CORP.: ALKASPERSE Polymeric Dispersants:

The ALKASPERSE polymeric dispersants are comprised of polyacrylates and proprietary copolymers developed as functional additives in a variety of applications.

A-2:
Chemical Type: polyacrylate, sodium salt
% Solids: 40
Molecular Weight: 2,000-3,000

A-5:
Chemical Type: polyacrylate, sodium salt
% Solids: 40
Molecular Weight: 4,000-7,000

A-20:
Chemical Type: polyacrylate, sodium salt
% Solids: 25
Molecular Weight: 20,000-30,000

A-2H:
Chemical Type: polyacrylic acid, partial sodium salt
% Solids: 50
Molecular Weight: 2,000-3,000

A-5H:
Chemical Type: polyacrylic acid, partial sodium salt
% Solids: 50
Molecular Weight: 4,000-7,000

A-20H:
Chemical Type: polyacrylic acid, partial sodium salt
% Solids: 25
Molecular Weight: 20,000-30,000

A-2P:
Chemical Type: polyacrylic, sodium salt
% Solids: 35
Molecular Weight: 2,000-3,000

A-5P:
Chemical Type: polyacrylate, sodium salt
% Solids: 35
Molecular Weight: 4,000-7,000
Antiscalants for water treatment applications, antiredeposition and sequestering agents for household and industrial detergents.

DM-5:
Chemical Type: anionic copolymer, sodium salt
% Solids: 25
Stabilizer and dispersant for latex paints and similar systems.

GAF CHEMICALS CORP.: ALKASPERSE Polymeric Dispersants (Continued):

M-5:
Chemical Type: anionic copolymer sodium salt
% Solids: 30
Dispersants for clay slurries and drilling muds.

M-10:
Chemical Type: anionic copolymer sodium salt
% Solids: 30
ALKASPERSE M-5 and M-10 will function as conductivity aids for Electrofax paper.

PRO-32:
Chemical Type: proprietary
% Solids: 15
PRO-300:
Chemical Type: proprietary
% Solids: 30
PRO-32 and PRO-300 are specialty water treatment chemicals. They are especially effective in the prevention of calcium carbonate and calcium sulfate scales.

GAF CHEMICAL CORP.: ALKATERIC Amphoteric Surfactants:

The ALKATERIC amphoteric surfactant line is comprised of betaines, propionates and acetate derivatives.

Betaines:

CB:
Alkyl Group: coco
Appearance: clear liquid
% Solids: 34-36

PB:
Alkyl Group: cetyl
Appearance: clear, yellow liquid
% Solids: 20-25
Extremely mild additives which are substantive to skin and hair.

CAB-A:
Alkyl Group: cocamido
Appearance: clear liquid
% Solids: 34-36

CAB-O:
Alkyl Group: cocamido propyl
Appearance: clear liquid
% Solids: 30-32

LAB:
Alkyl Group: lauramido propyl
Appearance: clear liquid
% Solids: 33-37
Applications are similar to ALKATERIC OB and CB.

Acetates:

2CIB:
Alkyl Group: coco
Appearance: clear amber liquid
% Solids: 49.5-50.5
ALKATERIC 2CIB exhibits excellent foam characteristics in both hard and soft water and is completely compatible with anionic, nonionic and cationic surfactants.

Propionates:

A2P-TS:
Alkyl Group: tallow
Appearance: yellow liquid
% Solids: 29-31

A2P-LPS:
Alkyl Group: lauryl
Appearance: pale yellow liquid
% Solids: 29-31
This group of amphoterics, N-substituted amino acid derivatives, is stable in extreme pH conditions and is tolerant of high levels of inorganic salts.

AP-C:
Alkyl Group: coco
% Solids: 42-44
They are high foamers.

A2P-OS:
Alkyl Group: octyl
% Solids: 49-51
pH stable, low foam

GAF CHEMICALS CORP.:: ANTARA Phosphate Esters:

ANTARA anionics are complex phosphate esters specifically developed for use as extreme pressure additives for metal working fluids.

HR-719:
Type: Acid ester, aliphatic base
Form: liquid
% Active: 90
Water-soluble, slightly viscous, clear, biodegradable lubricant designed for use in synthetic, semi-synthetic or aqueous systems.

LB-400:
Type: Acid ester, aliphatic base
Form: liquid
% Active: 98
Oil and water soluble lubricity additive, rust inhibitor, and emulsifier.

LE-500:
Type: Acid ester, aromatic base
Form: liquid
% Active: 100
Oil and water soluble lubricant and emulsifier.

LE-600:
Type: Acid ester, aromatic base
Form: liquid
% Active: 100
Uses similar to LE-500, only more hydrophilic.

LE-700:
Type: acid ester, aromatic base
Form: liquid
% Active: 100
Highly water-soluble lubricant.

LF-200:
Type: acid ester, aromatic base
Form: liquid
% Active: 100
Oil and water soluble lubricant and emulsifier.

LK-500:
Type: acid ester, aliphatic base
Form: liquid
% Active: 100
Linear alcohol-based low foaming lubricant.

GAF CHEMICALS CORP.:: ANTARA Phosphate Esters (Continued):

LM-400:
Type: Acid ester, aromatic base
Form: liquid
% Active: 100
Oil-soluble, water dispersible lubricant.

LM-600:
Type: Acid ester, aromatic base
Form: liquid
% Active: 100
Oil and water soluble lubricant and emulsifier.

LP-700:
Type: Acid ester, aromatic base
Form: liquid
% Active: 100
Nonfoaming lubricant. Uses the same as LE-700.

LS-500:
Type: Acid ester, aliphatic base
Form: liquid
% Active: 100
Uses the same as LE-500.

BLANCOL Dispersants Naphthalene Condensates:

BLANCOL naphthalene condensates are excellent dispersants suitable for such applications as leather treatment, heavy metal cleaners and pigment dispersion.

BLANCOL N:
Type: sodium salt of sulfonated naphthalene-formaldehyde condensate
Form: powder
% Active: >86
In papermaking, disperses pigments, clays and other solids; prevents pitch coagulation, reduces two-sidedness, improves sizing. Bleaching, dispersing, leveling, and neutralizing agent for leather.

BLANCOL:
Type: sodium salt of sulfonated naphthalene-formaldehyde condensate
Form: liquid
% Active: 46
Liquid version of BLANCOL N.

GAF CHEMICALS CORP.: ANTAROX Low-Foaming Nonionics:

The ANTAROX surfactants line consists of modified alkyl or alkylaryl ethoxylates suitable for many applications in which minimal foam is desirable.

BL-214:
Modified linear aliphatic polyether
Form: liquid
% Active: 100
A good low-foaming surfactant with excellent rewetting properties at temperatures as low as 25C.

BL-225:
Modified linear aliphatic polyether
Form: liquid
% Active: 100
Produces low foam levels at temperatures as low as 32C.

BL-236:
Modified linear aliphatic polyether
Form: liquid
% Active: 100
Low foaming surfactant particularly suited for high temperature spray-metal cleaning.

BL-240:
Modified linear aliphatic polyether
Form: liquid
% Active: 100
More water-soluble analog of BL-225.

BL-330:
Modified linear aliphatic polyether
Form: liquid
% Active: >95
Readily formulated into a rinse-aid concentrate.

BL-344:
Modified linear aliphatic polyether
Form: liquid
% Active: 90
Possesses increased high-temperature compatibility. Uses similar to BL-330.

LF-222:
Modified aromatic polyether
Form: liquid
% Active: 100
Ambient temperature spray-metal cleaning with excellent wetting and rewetting properties.

GAF CHEMICALS CORP.: ANTAROX Low-Foaming Nonionics (Continued):

LF-224:
Modified aliphatic polyether
Form: liquid
% Active: 99

LF-330:
Modified aliphatic polyether
Form: liquid
% Active: 95
Low-foaming detergent and wetting agent readily formulated into a rinse-aid concentrate.

LF-344:
Modified aliphatic polyether
Form: liquid
% Active: 90
Low-foaming detergent and wetting agent with increased high-temperature compatibility. Uses similar to LF-330.

BL-600:
Modified aliphatic polyether
Form: liquid
A unique blend of biodegradable, modified alkyl ethoxylates.

GAF CHEMICALS CORP.: EMULPHOGENE Alkyl Ethoxylates:

EMULPHOGENE surfactants are primarily ethoxylated synthetic alcohols, with the exception of LM-710 and TB-970.

BC-420:
Polyoxyethylated (3) tridecyl alcohol
Form: liquid
% Active: 100
HLB: 8.0
Intermediate in the manufacture of high-foaming anionic surfactants.

BC-610:
Polyoxyethylated (6) tridecyl alcohol
Form: liquid
% Active: 100
HLB: 11.4
More hydrophilic than BC-420. Low-foaming detergent and wetting agent for mechanical-dishwashing formulations and spray-type alkaline cleaners.

BC-720:
Polyoxyethylated (9.75) tridecyl alcohol
Form: liquid
% Active: 100
HLB: 13.8
More hydrophilic than BC-610. Foam builder and detergent; solubilizer for alkylaryl sulfonates; component of light- and heavy-duty high-foaming detergent formulations.

BC-840:
Polyoxyethylated (15) tridecyl alcohol
Form: paste
% Active: 100
HLB: 15.4
More hydrophilic than BC-720. Foam builder and detergent; solubilizer for alkylaryl sulfonates; component of light- and heavy-duty high-foaming detergent formulations.

DA-530:
Polyoxyethylated (4) decyl alcohol
Form: liquid
% Active: 100
HLB: 10.5

DA-630:
Polyoxyethylated (6) decyl alcohol
Form: Liquid
% Active: 100
HLB: 12.5

DA-639:
Polyoxyethylated (6) decyl alcohol
Form: liquid
% Active: 90
Rapid wetters at levels of 0.1% or less.

GAF CORP.: EMULPHOGENE Alkyl Ethoxylates (Continued):

LM-710:
Polyoxyethylated (9) alkyl thioether
Form: liquid
% Active: 100
HLB: 13.4
Emulsifier of all types of grease and soils.

TB-970:
Linear aliphatic ethoxylate
Form: flake or solid
% Active: 100
HLB: 18.0
Uniquely high-melting biodegradable nonionic surfactant with excellent surface-active properties.

EMULPHOR Fatty Ethoxylates:
The EMULPHORS are esters of naturally derived fatty acids, fatty alcohols or triglycerides and ethylene oxide. They are excellent lubricants, emulsifiers, solubilizers and dispersants, in a wide variety of applications.

EL-620:
Polyoxyethylated (30) castor oil
Form: liquid
% Active: 100
HLB: 12.0
Water-soluble emulsifier for animal and vegetable fats and oils, fatty acids and waxes, and organic solvents.

EL-620L:
Polyoxyethylated (30) castor oil
Form: liquid
% Active: 10
HLB: 12.0
Low dioxane version of EL-620.

EL-719:
Polyoxyethylated (40) castor oil
Form: liquid
% Active: >96
HLB: 13.6
Same uses as EL-620.

EL-719L:
Polyoxyethylated (40) castor oil
Form: liquid
% Active: >96
HLB: 13.6
Low dioxane version of EL-719.

GAF CHEMICALS CORP.: EMULPHOR Fatty Ethoxylates (Continued):

EL-980:
Polyoxyethylated (200) castor oil
Form: solid
% Active: 100
HLB: 18.5
Effective emulsifier for mineral oil, triglycerides (such as coconut and peanut oils), and alkyl esters including butyl stearate, hexadecyl stearate, and methyl ester types.

EL-985:
Polyoxyethylated (200) castor oil
Form: liquid
% Active: 50
Same uses as EL-980 when an easy-to-handle liquid as required.

LA-630:
Polyoxyethylated (9) coconut fatty acid
Form: liquid
% Active: 100
HLB: 13.2
Excellent emulsifier and wetting agent with use as lubricant and softener.

ON-870:
Polyoxyethylated (20) oleyl alcohol
Form: wax
% Active: 100
HLB: 15.4
Emulsifier for mineral oils, fatty acids, and waxes; for liquid wax polish formulations; for cosmetic creams and lotions; for aqueous dispersions of polyethylene.

ON-877:
Polyoxyethylated (20) oleyl alcohol
Form: liquid
% Active: 70
70% activity. A 70% active solution of ON-870 offering ease of handling.

VN-430:
Polyoxyethylated (5) oleyl acid
Form: liquid
% Active: 100
HLB: 7.7
Oil soluble surfactant used in cutting oils, degreasing solvents and metal cleaners.

VT-650:
Polyoxyethylated (9) stearic acid
Form: liquid
% Active: 100 HLB: 11.8
Self-emulsifying lubricant for textile scouring agents.

GAF CHEMICALS CORP.: GAFAC Phosphate Esters:

GAFAC anionics are complex phosphate esters applicable for cosmetics, textile wet processing and finishing, detergent concentrations, ag chem formulations and drycleaning. They function as effective lubricants, hydrotropes, emulsifiers and detergents.

BG-510:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Water-soluble phosphate ester with excellent hydrotroping properties.

BH-650:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Very hydrophobic surfactant with excellent caustic solubility and stability.

BI-729:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 89
Very hydrophobic surfactant with excellent caustic solubility and stability.

BI-750:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
100% active form of BI-729. Same applications as BI-729.

BP-769:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 90
Low foaming hydrotrope. Foam level similar to GAFAC RP-710, but foam breaks faster.

GB-520:
Type: partial sodium salt, aliphatic hydrophobic base
Form: liquid
% Active: 98
Surfactant dispersible in the emulsification of mineral oils.

GAF CHEMICALS CORP.: GAFAC Phosphate Esters (Continued):

LO-529:
Type: partial sodium salt, aromatic hydrophobic base
Form: liquid
% Active: 88
Viscous surfactant soluble in water and many polar and nonpolar solvents.

MC-470:
Type: partial sodium salt, aliphatic hydrophobic base
Form: liquid
% Active: 95
Emulsifier for mineral oils. Soluble in mineral oils and aromatic solvents.

PE-510:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Light-colored, water-dispersible wetting agent with good electrolyte tolerance.

RA-600:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 99
Based on linear alcohol. Exceptional stability in alkali.

RB-400:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 98
Based on fatty alcohol. Excellent emulsifier.

RD-510:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 98
Oil- and water-dispersible emulsifier for creams, lotions, and clear cosmetic gels.

RE-410:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Most oil-soluble member of RE-series but also water soluble when neutralized.

RE-610:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Similar to PE-510, but has better compatibility in strong electrolyte systems. Useful in heavy-duty, all-purpose liquid formulations.

GAF CHEMICALS CORP.: GAFAC Phosphate Esters (Continued):

RE-877:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 75
Emulsifier and stabilizing agent in the preparation of polyvinyl acetate and of vinyl acetate/acrylic copolymers.

RE-960:
Type: acid ester, aromatic hydrophobic base
Form: paste
% Active: 90
Light-colored, water-soluble dispersant and dyeing assistant.

RK-500:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Low-foaming, non-phenolic hydrotrope.

RL-210:
Type: acid ester, aliphatic hydrophobic base
Form: waxy solid
% Active: 100
Used as a mold release agent.

RM-410:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Most oil-soluble member of RM-series.

RM-510:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Soluble in aromatic solvent and kerosene. Dispersible in water.

RM-710:
Type: acid ester, aromatic hydrophobic base
Form: liquid
% Active: 100
Similar to RM-510, but also water-soluble.

RP-710:
Type: acid ester, aromatic hydrophobic base
Form: liquid
Active: 100
Low-foaming hydrotrope for nonionic surfactants used in liquid or powder alkaline cleaners.

RS-410:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Most oil-soluble member of RS-series. Extremely effective paraffinic oil emulsifier as triethanolamine salt.

GAF CHEMICALS CORP.: GAFAC Phosphate Esters (Continued):

RS-610:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Similar to RE-610 but has higher electrolyte tolerance.

RS-710:
Type: acid ester, aliphatic hydrophobic base
Form: liquid
% Active: 100
Alkali-stable detergent, emulsifier, wetting agent, and dispersant.

BX-660:
Type: acid ester, aromatic base
Form: liquid
% Active: 80
Excellent hydrotrope for use in alkaline cleaning solutions. Good stability to bleach under alkaline conditions.

BX-760:
Type: acid ester
Form: liquid
% Active: 90
Properties similar to those of BX-660.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates:

IGEPAL nonionic surfactants are reaction products of phenol or an alkylphenol and ethylene oxide.

CA-210:
Form: liquid
% Active: 100
N: 1.5
HLB: 4.8

CA-420:
Form: liquid
% Active: 100
N: 3
HLB: 8.0

CA-520:
Form: liquid
% Active: 100
N: 5
HLB: 10.0
Effective emulsifiers for nonpolar hydrocarbon solvents and oils, e.g. heptane and mineral oil, in solvent emulsion cleaners and drycleaning detergents.

CA-620:
Form: liquid
% Active: 100
N: 7
HLB: 12.0

CA-630:
Form: liquid
% Active: 100
N: 9
HLB: 13.0
Reported use in all phases of detergent compounding and aqueous processing in the textile and paper industries, in industrial metal cleaners, acid cleaners, floor cleaners, detergent-sanitizers and waterless hand cleaners.

CA-720:
Form: liquid
% Active: 100
N: 12.5
HLB: 14.6
Hard-surface detergent with aqueous solubility at high temperatures.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

CA-880:
Form: solid
% Active: 100
N: 30
HLB: 17.4
Primary emulsifier for vinyl acrylate polymerizations and post-stabilizer for synthetic latices; also, a dyeing assistant and an emulsifier for fats and waxes.

CA-887:
Form: aqueous solution
% Active: 70
N: 30
HLB: 17.4
70% active solution of CA-880.

CA-890:
Form: wax
% Active: 100
N: 40
HLB: 18.0
Primary emulsifier for vinyl acetate and acrylate polymerizations and post-stabilizer for synthetic latices.

CA-897:
Form: aqueous solution
% Active: 70
N: 40
HLB: 18.0
70% active solution of CA-890.

CO-210:
Form: liquid
% Active: 100
N: 1.5
HLB: 4.6
Oil-soluble surfactant and intermediate.

CO-430:
Form: liquid
% Active: 100
N: 4
HLB: 8.8
Oil-soluble surfactant used as a coemulsifier with water-soluble CO-850 and CO-880.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

CO-520:
Form: liquid
% Active: 100
N: 5
HLB: 10.0
Has a hydrophilic-lipophilic balance on the borderline between oil solubility and water solubility.

CO-530:
Form: liquid
% Active: 100
N: 6
HLB: 10.8
Similar to CO-520; also used as emulsifier for silicones, agricultural compounds, and mineral oils.

CO-610:
Form: liquid
% Active: 100
N: 7-8
HLB: 12.2
Water-soluble surfactant widely used for detergency, wetting, and emulsification; applicable where low foaming is particularly important.

CO-610:
Form: liquid
% Active: 100
N: 8.5
HLB: 12.6
Water-soluble detergent, wetting agent and emulsifier.

CO-630:
Form: liquid
% Active: 100
N: 9
HLB: 13.0
In metal processing, wetting agent for use with mineral acids and corrosion inhibitors; emulsifier in emulsion cleaning.

CO-660:
Form: liquid
% Active: 100
N: 10
HLB: 13.2
Similar to CO-630, but more soluble. Widely used in paper de-inking.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

CO-710:
Form: liquid
% Active: 100
N: 10-11
HLB: 13.6

CO-720:
Form: liquid
% Active: 100
N: 12
HLB: 14.2
Similar to CO-630, but more soluble at slightly elevated temperatures.

CO-730:
Form: liquid
% Active: 100
N: 15
HLB: 15.0
Similar to CO-630. Effective at elevated temperatures and in high concentrations of electrolytes.

CO-850:
Form: wax
% Active: 100
N: 20
HLB: 16.0
Water-soluble detergent, wetting agent.

CO-880:
Form: wax
% Active: 100
N: 30
HLB: 17.2
Similar to CO-850.

CO-887:
Form: aqueous solution
% Active: 70
N: 30
HLB: 17.2
Solution of CO-880.

CO-890:
Form: wax
% Active: 100
N: 40
HLB: 17.8
Highly water-soluble emulsifier, stabilizer. Effective at high temperatures.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

CO-897:
Form: aqueous solution
% Active: 70
N: 40
HLB: 17.8
Solution of CO-890.

CO-970:
Form: wax
% Active: 100
N: 50
HLB: 18.2
Very highly water-soluble surfactant effective at high temperatures and in concentrated electrolyte solutions.

CO-977:
Form: aqueous solution
% Active: 70
N: 50
HLB: 18.2
Solution of CO-970.

CO-980:
Form: wax
% Active: 100
N: 70
HLB: 18.6
Uses same as CO-970.

CO-987:
Form: aqueous solution
% Active: 70
N: 70
HLB: 18.6
Solution of CO-980.

CO-990:
Form: wax
% Active: 100
N: 100
HLB: 19.0
Uses same as CO-970.

CO-997:
Form: aqueous solution
% Active: 70
N: 100
HLB: 19.0
Solution of CO-990.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

CTA-639W:
Form: liquid
% Active: 94
Water-soluble surfactant with exceptional wetting and emulsifying properties.

DM-430:
Form: liquid
% Active: 100
N: 7
HLB: 9.4
Oil-soluble emulsifier that forms stable water-in-oil emulsions.

DM-530:
Form: liquid
% Active: 100
N: 9
HLB: 10.6
Emulsifier that is soluble in polar and nonpolar solvents and "solubilizes" in aliphatic solvents.

DM-710:
Form: liquid
% Active: 100
N: 15
HLB: 13.0
Water-soluble surfactant for detergency and emulsification, especially where low foaming is desired.

DM-730:
Form: paste
% Active: 100
N: 24
HLB: 15.0
Highly water-soluble surfactant.

DM-880:
Form: wax
% Active: 100
N: 49
HLB: 17.2
More hydrophilic version of DM-730, same uses.

GAF CHEMICALS CORP.: IGEPAL Alkylphenol Ethoxylates (Continued):

DM-970:
Form: flake or solid
% Active: 100
N: 150
HLB: 19.0
Unique high-melting flake or solid nonionic surfactant with excellent surface-active properties.

OD-410:
Form: liquid
% Active: 100
N: 1.0
Solvent for various resins (vinyl, phenolic, polyester, alkyd, nitrocellulose, cellulose acetate, etc.); ingredient of metal cleaners, paint strippers, and other cleaning compounds where solvents and solvent boosters are required; as an ink vehicle.

RC-520:
Form: liquid
% Active: 100
N: 6
HLB: 10.0
A low-foaming rewetting agent for paper towels, tissues, amd semichemical corrugating media.

RC-620:
Form: liquid
% Active: 100
N: 10
HLB: 12.6
All-purpose detergent and wetting agent with good emulsifying and dispersing properties.

RC-630:
Form: liquid
% Active: 100
N: 12
More water-soluble version of RC-620.

GMP, USP Products:

CO-630SP:
Form: liquid
% Active: 100
N: 9
HLB: 13.0
GMP grade of IGEPAL CO-630.

CA-630G:
Form: liquid
N: 9
HLB: 13.0
GMP grade of IGEPAL CA-630

GAF CHEMICALS CORP.: IGEPON Fatty Sulfonates:

The IGEPON anionics are alkyl sulfoamides or esters used extensively in the personal care, ag chem and textile industries. Their functional characteristics include superior foaming, dispersing, wetting and lathering.

AC-78:
Type: coconut acid ester of sodium isethionate
Form: powder
% Active: >83
Surfactant with low salt content, having good foaming, lathering, and dispersing properties.

T-33:
Type: sodium N-methyl-B-oleoyltaurate
Form: clear liquid
% Active: >32
Versatile surfactant for washing piece goods, raw stock, and yarns at all temperatures and under all pH conditions.

T-43:
Type: sodium N-methyl-N-oleoyltaurate
Form: slurry
% Active: >33
For compounding detergent products.

T-51:
Type: sodium N-methyl-N-oleoyltaurate
Form: gel
% Active: >14
Readily soluble gel, used extensively in textile processing, and as a latex emulsion stabilizer.

T-77:
Type: sodium N-methyl-N-oleoyltaurate
Form: flake
% Active: >67
Soft, nondusting flakes suitable for dry blending.

TC-42:
Type: sodium N-coconut acid-N-methyltaurate
Form: paste
% Active: >24
Chemically stable surfactant with good foaming, lathering, and dispersing properties.

TK-32:
Type: sodium N-methyl-N-tall oil acid taurate
Form: liquid
% Active: >20
Surfactant with good dispersing and suspending properties.

GAF CHEMICALS CORP.: KATAPOL Amine Ethoxylates:

KATAPOL surfactants are amine ethoxylates which function primarily as antistats, lubricants, dyeing assistants and emulsifiers in textile systems.

OA-910:
Polyoxyethylated (30) oleyl amine
Form: liquid
% Active: 100
HLB: 16.4
Hydrophilic emulsifier and tectile dyeing assistant.

PN-430:
Polyoxyethylated (5) tallow amine
Form: liquid
% Active: 100
HLB: 10.0
Water-soluble emulsifier for mineral oils and agricultural chemicals.

PN-730:
Polyoxyethylated (15) tallow amine
Form: liquid
% Active: 10.0
HLB: 14.0
Antistat for synthetic fiber processing.

PN-810:
Polyoxyethylated (20) tallow amine
Form: liquid
% Active: 100
HLB: 15.4
Antistat and lubricant for wool and synthetic fiber processing.

VP-532 SPB:
Polyoxyethylated alkyl-amine (cationic)
Form: liquid
% Active: 20
Excellent dispersant for fiberglass strands in the manufacture of fiberglass mats.

GAF CHEMICALS CORP.: NEKAL Sodium Alkylnaphthalene Sulfonates:

These anionic surfactants function mainly as wetting agents, dispersants and penetrants in the ag chem, paper and textile industries. Activity as indicated.

BA-77:
Type: sodium alkylnapththalene sulfonate
Form: powder
% Active: 75
Dispersing agent in latex, and printing ink formulations; in plastic and synthetic latices. Stabilizer in latex formulations; prevents coagulation in SBR and other synthetic rubbers.

BX-78:
Type: sodium alkylnaphthalene sulfonate
Form: powder
% Active: 70
Wetting agent in cotton and rayon processing, penetrant in reduced vat pad and dye liquors; pasting agent for direct, sulfur, and vat dyestuffs.
Wetting and dispersing agent for staining dry leather, applying aqueous finishes, rewetting hides or crushed leather.
In the agricultural chemical industry, wetting agent in wettable powder insecticide formulations.

WS-25-I:
WS-25:
Type: sodium dinonyl sulfosuccinate
Form: liquid
% Active: 48
Wetting agent and penetrant in padding and long-liquor dyeing, sizing and desizing, bleach liquors, raw stock processing, package and beam dyeing. Rewetting agent for application to yarn and piece goods prior to further processing; treated materials rewet quickly even after storage.

WT-27:
Type: sodium dinonyl sulfosuccinate
Form: aqueous solution
% Active: 70
Excellent wetting, rewetting, and penetrating agent in drycleaning detergents, emulsion polymerization, glass cleaners, wallpaper removers, battery separators.
Wetting agent in padding and long-liquor dyeing, sizing and desizing, raw stock processing, package and beam dyeing.
Rewetting agent for paper towels and tissue; dried kraft pulp, paper-mill felts. An excellent pigment wetting agent.

GAF CHEMICALS CORP.: PEGOL Block Copolymers:

PEGOL block copolymers are nonionic surfactants derived from ethylene (E.O.) and propylene oxide (P.O.) which will also function as reactive chemical intermediates.

L10:
HLB: 14.0
Melting/Pour Point C: -5
L31:
HLB: 4.5
Melting/Pour Point C: -32
Cutting and grinding fluids, emulsifiable concentrates, asphalt emulsions.

L35:
HLB: 18.5
Melting/Pour Point C: 7
L42:
HLB: 8.0
Melting/Pour Point C: -26
Rinse aids, automatic dishwashing, metal treatment.

L43:
HLB: 12.0
Melting/Pour Point C: -1
Rinse aids, automatic dishwashing, metal treatment, skin care products, emulsifiable concentrates.

L44:
HLB: 16.0
Melting/Pour Point C: 16
Hard surface cleaning, laundry, skin care, emulsifiable concentrates.

L61:
HLB: 3.0
Melting/Pour Point C: -29
Rinse aids, automatic dishwashing, metal treatment, water treatment, cutting fluids, asphalt.

L62:
HLB: 7.0
Melting/Pour Point C: -4
L62D:
HLB: 7.0
Melting/Pour Point C: -1
L62LF:
HLB: 7.0
Melting/Pour Point C: -10
L64:
HLB: 15.0
Melting/Pour Point C: 16
Hard surface cleaning, laundry, skin care, emulsion polymerization.

GAF CHEMICALS CORP.: PEGOL Block Copolymers (Continued):

P65:
HLB: 17.0
Melting/Pour Point C: 27
Hard surface cleaning, laundry, shampoos, light duty liquids, electrolytic cleaners.

F68:
HLB: 29.0
Melting/Pour Point C: 52
F68LF:
HLB: 26.0
Melting/Pour Point C: 50
Hard surface cleaning, laundry, shampoos, toilet tank blocks, light duty liquids, syndet bars.

L72:
HLB: 6.5
Melting/Pour Point C: -7
Skin care, emulsion polymerization, cutting fluids, pharmaceutical products.

P75:
HLB: 16.8
Melting/Pour Point C: 27
Hard surface cleaning, laundry, shampoos, light duty liquids, electrolytic cleaners.

L81:
HLB: 2.0
Melting/Pour Point C: -37
P84:
HLB: 14.0
Melting/Pour Point C: 34
Rinse aids, automatic dishwashing, metal treatment, water treatment, asphalt systems, w/o emulsions.

P85:
HLB: 16.0
Melting/Pour Point C: 34
Hard surface cleaning, laundry, shampoos, skin care.

F87:
HLB: 24.0
Melting/Pour Point C: 87
Hard surface cleaning, laundry, shampoos, electrolytic cleaning.
F88:
HLB: 28.0
Melting/Pour Point C: 54
L92:
HLB: 5.5
Melting/Pour Point C: 7
Light duty liquids, syndet bars, toilet tank blocks.

GAF CHEMICALS CORP.: PEGOL Block Copolymers (Continued):

L101:
HLB: 1.0
Melting/Pour Point C: -23
Rinse aids, automatic dishwashing, metal treatment, water treatment, w/o emulsions.
F108:
HLB: 27.0
Melting/Pour Point C: 57
Toilet tank blocks, syndet bars.
L121:
HLB: 0.5
Melting/Pour Point C: 5
Rinse aids, automatic dishwashing, metal treatment, water treatment, asphalt w/o emulsions.
F127:
HLB: 22.0
Melting/Pour Point C: 56
Toilet tank blocks, syndet bars.

PEGOL R:

10R8:
HLB: 18-23
Melting/Pour Point C: 46
17R1:
HLB: 1-7
Melting/Pour Point C: -27
17R2:
HLB: 1-7
Melting/Pour Point C: -25
Fermentation, paper processing, rinse aids, automatic dishwashing, metal cleaning.
17R4:
HLB: 7-12
Melting/Pour Point C: -18
17R8:
HLB: 12-18
Melting/Pour Point C: 53
Laundry, hard surface cleaning.
25R1:
HLB: 1-7
Melting/Pour Point C: -27
25R2:
HLB: 1-7
Melting/Pour Point C: -5
25R8:
HLB: 12-18
Melting/Pour Point C: 54
31R1:
HLB: 2-7
Melting/Pour Point C: 25
Rinse aids, automatic dishwashing, paper processing, metal cleaning, fermentation.

GAF CHEMICALS CORP.: PEGOL Polyethylene Glycols/Polypropylene Glycols:

PEGOL E and PEGOL P are polyethylene glycols and polypropylene glycols respectively.

P-400:
Form: liquid
Melting Pour Point C: below -25
P-700:
Form: liquid
Melting Pour Point C: below -25
Components in hydraulic fluids, solvents and cosolvents for cosmetics; pharmaceutical and industrial appplications; chemical intermediates.

P-1000:
Form: liquid
Melting Pour Point C: below -25
P-2000:
Form: liquid
Melting Pour Point C: below -25
Antifoam agents for industrial applications, additives for tire lubricants.

E-200:
Form: liquid
E-300:
Form: liquid
Melting Pour Point C: -10
Binders and lubricants in compressed tablets.

E-400:
Form: liquid
Melting Pour Point C: +6
Similar to E-200 but also used as a coupling agent in skin care lotions.

E-600:
Form: liquid
Melting Pour Point C: +22
Color stabilizer for fuel oils.

E-1000:
Form: wax
Melting Pour Point C: 37
E-1500:
Form: wax
Melting Pour Point C: 45
Tablet binders and lubricants.

E-4000:
Form: wax
Melting Pour Point C: 56
Mold release agent for rubber products.

GAF CHEMICALS CORP.: SURFADONE LP Surfactants: Alkyl Pyrrolidones:

SURFADONE LP surfactants are unique, multifunctional non-ionic surfactants. Both of these surfactants combine the ability to complex many polar materials with excellent wetting, surface tension reduction and solvency. Applications include personal care, specialty cleaner and agricultural formulations.

LP-100:
R Group: octyl
Appearance: clear to slightly hazy, colorless to light yellow liquid
HLB: 3
These products are characterized by superior wetting (especially LP-100), surface tension reduction and solvency. The intrinsic multifunctionality often enables the SURFADONE nonionics to replace several additive surfactants. The ability of the pyrrolidone ring to complex polar materials allows SURFADONE LP surfactants to be used to alter the solubility, vapor pressure or irritation potential of various classes of materials such as phenolics.

LP-300:
R Group: dodecyl
Appearance: clear to slightly hazy, colorless to light yellow liquid
HLB: 6
SURFADONE LP surfactants are mildly substantive to skin and hair. Superior body and manageability may be achieved when used in shampoos and conditioners. In permanent waves and depilatories SURFADONE LP surfactants reduce thioglycolate odor and irritation, and condition hair (perms).
The combination of surfactant and solvent properties make SURFADONE LP surfactants excellent in the formulation of high performance cleaners. Emulsifiable concentrates and flowables may be formulated with agrichemical actives that are otherwise difficult to formulate. Other SURFADONE LP surfactants can be used as viscosity modifiers, micro-emulsifying aids and as foam boosters and stabilizers. They are nonfoaming alone.

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants:

TEGOPREN 5380:
Polyether-polydimethyl-siloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 45/55
Viscosity at 25C (centistokes): 1,850+-650
Specific Gravity at 25C: 1.01+-0.01
Cloud point in 4% water solution (C): <25
Active substance: 100%
Appearance/color: liquid, slightly yellow
Flash point C (closed cup): >65

TEGOPREN 5840:
Polyether-Polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 60/40
Viscosity at 25C (centistokes): approx. 55
Specific gravity at 25C: 1.02
Cloud point in 1% water solution (C): 30
Active substance: 100%
Appearance/color: liquid, slightly yellow
Flash point C (closed cup): >100
Surface tension at 25C:
(dynes/cm) 0.1% in H2O: 22.3+-1

TEGOPREN 5842:
Polyether-Polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 100/0
Viscosity at 25C (centistokes): 600+-100
Specific gravity at 25C (g/cm 3): 1.07+-0.01
Cloud point in 1% water solution (C): 80+-2
Active substance: 100%
Appearance/color: liquid, slightly yellow
Refractive index 20C: 1.448+-0.001
Flash point C (closed cup): >65
Surface tension at 25C:
(dynes/cm) 1.0% in H20: 30+-1.5

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants (Continued):

TEGOPREN 5843:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 100/0
Viscosity at 25C (centistokes): 350+-150
Specific gravity at 25C: 1.070+-0.01
Cloud point in 1% water solution (C): 90
Active substance: 100%
Liquid, slightly yellow
Refractive index 20C: 1.455+-0.005
Flash point C (closed cup): >65
Surface tension at 25C:
(dynes/cm): 1.0% in H2O: 28

TEGOPREN 5847:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 80/20
Viscosity at 25C (centistokes): 100+-40
Specific gravity at 25C: 1.04+-0.01
Cloud point in 1% water solution (C): 59
Active substance: 100
Liquid, pale yellow to light amber
Flash point C (closed cup): >65
Surface tension at 25C:
(dynes/cm): 1.0% in H2O: 23.0+-1

TEGOPREN 5851:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 75/25
Viscosity at 25C (centistokes): 450+-120
Specific gravity at 25C: 1.05+-0.01
Cloud point in 1% water solution (C): 64
Active substance: 100%
Liquid, colorless
Refractive index 20C: 1.450+-0.005
Flash point C (closed cup): >65
Surface tension at 25C:
(dynes/cm) 1.0% in H20: approx. 30

TEGOPREN 5852:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 20/80
Viscosity at 25C (centistokes): 300+-80
Specific gravity at 25C: 1.01+-0.01
Cloud point in 1% water solution (C): <25
Active substance: 100%
Liquid, slightly yellow
Refractive index 20C: 1.444+-0.005

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants (Continued):

TEGOPREN 5857:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 90/10
Viscosity at 25C (centistokes): 730+-150
Specific gravity at 25C: 1.075+-.005
Cloud point in 1% water solution (C): 84+-3
Active substance: 100%
Liquid, colorless
Refractive index 20C: 1.449+-0.005
Flash point C (closed cup): >65
Surface tension at 25C (dynes/cm) 1.0% in H2O: 28+-1

TEGOPREN 5863:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 40/60
Viscosity at 25C (centistokes): 2,700+-700
Specific gravity at 25C: 1.04+-0.01
Cloud point in 1% water solution (C): 42+-2
Active substance: 100%
Liquid, pale yellow
Refractive index 20C: 1.450+-0.005
Flash point C (closed cup): >65
Surface tension at 25C: (dynes/cm) 1.0% in H2O: 30.5+-1

TEGOPREN 5873:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 35/65
Viscosity at 25C (centistokes): 450+-100
Specific gravity at 25C: 1.03+-0.01
Cloud point in 1% water solution (C): 30
Active substance: 100%
Liquid, colorless
Refractive index 20C: 1.449+-0.005
Flash point C (closed cup): >65
Surface tension at 25C: (dynes/cm) 1.0% in H2O: 27+-1

TEGOPREN 5878:
Polyether-polymethylsiloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 100/0
Viscosity at 25C (centistokes): approx. 25
Specific gravity at 20C: 1.01+-0.01
Cloud point in 1% water solution (C): <25
Active substance: 100%
Liquid, clear yellow
Refractive index 20C: 1.443+-0.001
Flash point C (closed cup): >100
Surface tension at 25C: (dynes/cm) 1.00% in H2O: 20

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants (Continued):

TEGOPREN 5884:
Polysiloxane-polyether-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 77/23
Viscosity at 25C (centistokes): 10,000+-2,000
Specific gravity at 25C: 1.04+-0.01
Cloud point in 1% water solution (C): 71+-3
Active substance: 100%
Liquid, light yellow
Refractive index (25C): 1.440+-0.005
Flash point C (closed cup): >65

TEGOPREN 5884-35:
Polysiloxane-polyether-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 77/23
Viscosity at 25C (centistokes): 95+-15
Specific gravity at 25C: 1.024+-0.01
Cloud point in 1% water solution (C): 71+-3
Active substance: 35%
Liquid, light yellow
Refractive index 20C: 1.375+-0.005
Flash point C (closed cup): Not applicable

TEGOPREN 6800:
Alkyl-polymethylsiloxane copolymer
Type: Organophilic
Chemical and Physical Properties:
Viscosity at 35C (centistokes): 20-30
Specific gravity at 20C: 0.85+-0.01
Active substance: 100%
Waxy liquid, colorless
Refractive index 20C: 1.442
Flash point C (closed cup): >52

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants (Continued):

TEGOPREN 6801:
Alkyl-polymethylsiloxane copolymer
Type: Organophilic
Chemical and Physical Properties:
Viscosity at 25C (centistokes): 15-25
Specific gravity at 20C: 0.86+-0.01
Active substance: 100%
Liquid, colorless
Refractive index 20C: 1.439
Flash point C (closed cup): >45
Pour point (C): 8-12
Surface tension at 25C: (dynes/cm) 1% in paraffin oil: 31

TEGOPREN 6814:
Alkyl-polymethylsiloxane copolymer
Type: Organophilic
Chemical and Physical Properties:
Viscosity at 25C (centstokes): 350+-100
Density at 25C (g/ml): 0.90+-0.02
Active substance: 100%
Clear liquid/slightly yellow
Pourpoint (C): <7
Flashpoint C (closed cup): >100

TEGOPREN 6815:
Acetoxypropyl-polymethyl-siloxane-copolymer
Type: Organophilic
Chemical and Physical Properties:
Viscosity at 25C (centistokes): 100+-30
Specific gravity at 25C: 1.01
Active Substance: 100%
Liquid, colorless to slightly yellow, clear
Refractive index 25C: 1.4165+-0.005
Flash point C (closed cup): >65
Surface tension at 25C: (dynes/cm) 1% in DOP: 24

TEGOPREN 6846:
Alkyl-polymethylsiloxane copolymer
Type: Organophilic
Chemical and Physical Properties:
Viscosity at 70C (centistokes): approx. 250
Density at 70C (g/ml): approx. 0.84
Active content: 100%
Waxy, white
Flash point C (closed cup): >200
Melting point C (closed cup): approx. 60

GOLDSCHMIDT CHEMICAL CORP.: TEGOPREN Silicone Surfactants (Continued):

TEGOPREN 6920:
Diquaternary Polydimethylsiloxanes
Type: Cationic
Chemical and Physical Properties:
Viscosity at 25C (centistokes): 350+-100
Surface tension at 25C (dynes/cm): 31.5+-2
Specific gravity at 25C: 1.01+-0.01
Active matter: 50%
Liquid, amber
Flash point C (closed cup): >65
pH-value at 25C (30% in H2O): 7.2+-1
Refractive index (25C): 1.443+-0.005
Solvent: Propylene glycol
Weight % quat. Nitrogen: 0.8

TEGOPREN 6922:
Diquaternary Polydimethylsiloxanes
Type: Cationic
Chemical and Physical Properties:
Viscosity at 25C (centistokes): 750+-200
Surface tension at 25C (dynes/cm): 44+-2
Specific gravity at 25C: 1.00+-0.01
Active matter: 50%
Liquid, amber
Flash point C (closed cup): >65
pH-value at 25C (30% in H2O): 7.2+-1
Refractive index (25C): 1.429+-0.005
Solvent: Propylene glycol
Weight % quat. Nitrogen: 0.4

TEGOPREN 6950:
Organobetain-polymethyl-siloxane-copolymer
Ionic Nature: Amphoteric
Chemical and Physical Properties:
Viscosity at 25C (centistokes): 45-100
Specific gravity at 20C: 1.08+-0.01
Active substance: 30%
Liquid, clear yellow
NaCl content (%): 3.3-3.8
pH-value (30% in water at 25C): 5-7
Flash point C (closed cup): >100
Surface tension at 25C: (dynes/cm): 1.00% in H2O: 25
Solvent: Propylene glycol/water (ratio 60:40)

TEGOPREN 7006:
Polyether-alkyl-polymethyl-siloxane-copolymer
Ionic Nature: Non-ionic
Chemical and Physical Properties:
Weight % EO/PO in polyether: 60/40
Viscosity at 25C (centistokes): 900+-200
Specific gravity at 20C: 0.93+-0.01
Active substance: 100%
Liquid, colorless to pale yellow
Refractive index 20C: 1.438+-0.002
Flash point C (closed cup): >100

W.R. GRACE & CO.-CONN.: HAMPSHIRE HAMPOSYL Surfactants:
HAMPOSYL Acids:

HAMPOSYL L:
Lauroyl Sarcosine
Active Ingredient: 94% min.
Free Fatty Acid: 6% max.
Color, Gardner: 2 max.
Appearance @ 25C: White waxy solid
Specific Gravity @ 25C: .97-.99
Softening Point: 34-37C
Molecular Weight of Active Ingredient: 270

HAMPOSYL C:
Cocoyl Sarcosine
Active Ingredient: 94% min.
Free Fatty Acid: 6% max.
Color, Gardner: 3 max.
Appearance @ 25C: Pale yellow liquid
Specific Gravity @ 25C: .97-.99
Softening Point: 18-22C
Molecular Weight of Active Ingredient: 280

HAMPOSYL M:
Myristoyl Sarcosine
Active Ingredient: 94% min.
Free Fatty Acid: 6% max.
Color, Gardner: 2 max.
Appearance @ 25C: White waxy solid
Specific Gravity @ 25C: .97-.99
Softening Point: 48-53C
Molecular Wt. of Active Ingredient: 298

HAMPOSYL O:
Oleoyl Sarcosine
Active Ingredient: 94% min.
Free Fatty Acid: 6% max.
Color, Gardner: 4 max.
Appearance @ 25C: Yellow liquid
Specific Gravity @ 25C: .95-.97
Molecular Wt. of Active Ingredient: 349

HAMPOSYL S:
Stearoyl Sarcosine
Active Ingredient: 94% min.
Free Fatty Acid: 6% max.
Color, Gardner: 4 max.
Appearance @ 25C: White waxy solid
Specific Gravity @ 25C: .96-.98
Softening Point: 53-58C
Molecular Wt. of Active Ingredient: 338

W.R. GRACE & CO.-CONN.: HAMPSHIRE HAMPOSYL Surfactants:
HAMPOSYL Salts:

HAMPOSYL L-30:
Sodium Lauroyl Sarcosinate Solution

Active Ingredient: 30%+-1%
pH, 10% solution: 7.5-8.5
Sodium Soap: 2% max.
Color, APHA, as is: 60 max.
Appearance: colorless liquid
Specific Gravity @ 25C: 1.02-1.03
Freezing Point: -1C
Molecular Wt. of Active Ingredient: 292

HAMPOSYL L-95:
Sodium Lauroyl Sarcosinate Powder

Active Ingredient: 94% min.
pH, 10% solution: 7.5-8.5
Sodium Soap: 4% max.
Color, APHA, as is: 80 max.
Appearance: Dry white powder
Specific Gravity @ 25C: 25 lbs./cu.ft.
Molecular Wt. of Active Ingredient: 292

HAMPOSYL C-30:
Sodium Cocoyl Sarcosinate Solution

Active Ingredient: 30%+-1%
pH, 10% solution: 7.5-8.5
Sodium Soap: 2% max.
Color, APHA, as is: 100 max. (30% sol.)
Appearance: Colorless to very pale yellow liquid
Specific Gravity @ 25C: 1.02-1.03
Freezing Point: -1C
Molecular Wt. of Active Ingredient: 301

HAMPOSYL M-30:
Sodium Myristoyl Sarcosinate Solution

Active Ingredient: 30%+-1%
pH, 10% solution: 7.5-8.5
Sodium Soap: 2% max
Color, APHA, as is: 100 max.
Appearance: Colorless liquid
Specific Gravity @ 25C: 1.02-1.03
Freezing Point: -1C
Molecular Wt. of Active Ingredient: 320

HARCROS ORGANICS: T-DET Surfactants:

Hydrophobic Base:

Nonyl Phenol:
T-DET N-1.5:
Average Moles E.O.: 1.5
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Pale Yellow Liquid
HLB: 4.6
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 0.99
Weight per Gallon (68F): 8.2
pH (1% Aqueous): 5-7
Typical Applications: Petroleum oils, Stabilizer, coemulsifier.
Federal Regulation Compiance: 175.105

T-DET N-4:
Average Moles E.O.: 4
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 8.9
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.02
Weight per Gallon (68F): 8.5
pH (1% Aqueous): 5-7
Typical Applications: Agricultural, drycleaning, leather & metal processing, paint degreasing, emulsion cleaners.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-6:
Average Moles E.O.: 6
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 10.9
Cloud Point (1% Solution): Insoluble
Pour Point: 0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.04
Weight per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Agricultural, drycleaning, leather & metal processing, paint degreasing, emulsion cleaners
Federal Regulation Compliance: 175.105, 178.3400, 180.1001c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Nonyl Phenol (Continued):

T-DET N-8:
Average Moles E.O.: 8
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 12.4
Cloud Point (1% Solution): 75F
Pour Point: 30F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.05
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Agricultural, detergents, leather & textile processing, paint. Dispersant, wetting agent.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-9.5:
Average Moles E.O.: 9.5
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 13.1
Cloud Point (1% Solution): 137F
Pour Point: 41F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.06
Weight Per Gallon (68F): 8.8
pH (1% Aqueous): 5-7
Typical Applications: Detergents, agricultural, leather, paints, petroleum.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-10.5:
Average Moles E.O.: 10.5
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 13.4
Cloud Point (1% Solution): 160F
Pour Point: 49F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.06
Weight Per Gallon (68F): 8.8
pH (1% Aqueous): 5-7
Typical Applications: Detergents, textiles, paints.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Nonyl Phenol (Continued):

T-DET N-12:
Average Moles E.O.: 12
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Opaque Liquid
HLB: 14.1
Cloud Point (1% Solution): 180F
Pour Point: 57F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 5-7
Typical Applications: Detergents, metal cleaners, sanitizers, paints.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-14:
Average Moles E.O.: 14
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Opaque Semi-Solid
HLB: 14.7
Cloud Point (1% Solution): 203F
Pour Point: 67F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 5-7
Typical Applications: Emulsifiers, high temperature detergents, corrosion inhibitors, petroleum processing.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-20:
Average Moles E.O.: 20
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Opaque Solid
HLB: 16.0
Cloud Point (1% Solution): >212F
Pour Point: 90F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.08
Weight Per Gallon (68F): 9.0
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, emulsion polymerization, emulsifiers, petroleum processing
Federal Regulation Complaince: 175.105

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Nonyl Phenol (Continued):

T-DET N-30:
Average Moles E.O.: 30
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 17.0
Cloud Point (1% Solution): >212F
Pour Point: 110F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, emulsifiers, high electrolyte solutions. Stabilizer.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-40:
Average Moles E.O.: 40
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 17.7
Cloud Point (1% Solution): >212F
Pour Point: 120F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, emulsifiers, high electrolyte solutions, emulsion polymerization, agricultural.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET N-407:
Average Moles E.O.: 40
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Clear Liquid
HLB: 17.7
Cloud Point (1% Solution): >212F
Pour Point: 30F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.08
Weight Per Gallon (68F): 9.0
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, emulsifiers, high electrolyte solutions, emulsion polymerization, agricultural.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Nonyl Phenol (Continued)

T-DET N-50:
Average Moles E.O.: 50
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 18.0
Cloud Point (1% Solution): >212F
Pour Point: 120F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, asphalt emulsifiers, high electrolyte solutions, emulsion polymerization, agricultural.
Federal Regulation Complaince: 173.3400, 180.1001 c,d,e

T-DET N-507:
Average Moles E.O.: 50
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Opaque Liquid
HLB: 18.0
Cloud Point (1% Solution): >212F
Pour Point: 40F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.09
Weight Per Gallon (68F): 9.1
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, asphalt emulsifiers, high electrolyte solutions, emulsion polymerization, agricultural.
Federal Regulation Compliance: 173.3400, 180.1001 c,d,e

T-DET N-70:
Average Moles E.O.: 70
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 18.7
Cloud Point (1% Solution): >212F
Pour Point: 125F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.08
Weight Per Gallon (68F): 9.0
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, emulsifiers, latex emulsions, emulsion polymerization, asphalt.
Federal Regulatiion Compliance: 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Nonyl Phenol (Continued):

T-DET N-707:
Average Mole E.O.: 70
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Opaque Liquid
HLB: 18.7
Cloud Point (1% Solution): >212F
Pour Point: 50F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.10
Weight Per Gallon (68F): 9.2
pH (1% Aqueous): 5-7
Typical Applications: High temperature detergents, textiles, emulsifiers, latex emulsions, emulsion polymerization, asphalt.
Federal Regulation Compliance: 18.1001 c,d,e

T-DET N-100:
Average Moles E.O.: 100
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 19.0
Cloud Point (1% Solution): >212F
Pour Point: 127F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.08
Weight Per Gallon (68F): 9.0
pH (1% Aqueous): 5-7
Typical Applications: Asphalt, high electrolyte solutions, high temperature detergents, textiles, toilet block products, emulsion polymerization.
Federal Regulation Compliance: 180.1001 c,d

T-DET N-1007:
Average Moles E.O.: 100
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Opaque Liquid
HLB: 19.0
Cloud Point (1% Solution): >212F
Pour Point: 62F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.10
Weight Per Gallon (68F): 9.2
pH (1% Aqueous): 5-7
Typical Applications: Asphalt, high electrolyte solutions, high temperature detergents, textiles, toilet block products, emulsion polymerization.
Federal Regulation Compliance: 180.1001 c,d

HARCROS ORGANICS: T-DET Surfactants (Continued):

Hydrophobic Base (Continued):
Octyl Phenol (Continued):

T-DET O-4:
Average Moles E.O.: 4
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 8.5
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.03
Weight Per Gallon (68F): 8.6
pH (1% Aqueous): 5-7
Typical Applications: Agricultural, leather & metal processing, paint, drycleaning detergents, degreasing.
Federal Regulation Compliance: 175.105, 178.3400

T-DET O-6:
Average Moles E.O.: 6
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 11.6
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.05
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Detergents, textiles & leather processing, agricultural formulations. Dispersants.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET O-8:
Average Moles E.O.: 8
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 12.4
Cloud Point (1% Solution): 72F
Pour Point: 15F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.04
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Detergents, agricultural formulations, oil well drilling, leather processing, paints.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Octyl Phenol (Continued):

T-DET O-9:
Average Moles E.O.: 9
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 13.5
Cloud Point (1% Solution): 150F
Pour Point: 45F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.06
Weight Per Gallon (68F): 8.8
pH (1% Aqueous): 5-7
Typical Applications: General purpose, detergents, solvent emulsifier. Controlled foaming.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET O-12:
Average Moles E.O.: 12
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Opaque Liquid
HLB: 14.2
Cloud Point (1% Solution): 190F
Pour Point: 60F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.08
Weight Per Gallon (68F): 9.0
pH (1% Aqueous): 5-7
Typical Applications: General purpose, detergents, solvent emulsifier. Controlled foaming.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

T-DET O-307:
Average Moles E.O.: 30
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Viscous Liquid
HLB: 17.3
Cloud Point (1% Solution): >212F
Pour Point: 30F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.09
Weight Per Gallon (68F): 9.1
pH (1% Aqueous): 5-7
Typical Applications: Agricultural formulations, high temperature detergents, textiles, polymerization. General purpose emulsifier, stabilizer.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Octyl Phenol (Continued):
T-DET O-40:
Average Moles E.O.: 40
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 17.9
Cloud Point (1% Solution): >212F
Pour Point: 120F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.06
Weight per Gallon (68F): 8.8
pH (1% Aqueous): 5-7
Typical Applications: Agricultural formulations, high temperature detergents, textiles, polymerization. General purpose emulsifier, stabilizer.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e
T-DET O-407:
Average Moles E.O.: 40
Ionogenic Class: Nonionic
% Active (Minimum): 70.0
Clear Liquid
HLB: 17.9
Cloud Point (1% Solution): >212F
Pour Point: 30F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.10
Weight Per Gallon (68F): 9.2
pH (1% Aqueous): 5-7
Typical Applications: Agricultural formulations, high temperature detergents, textiles, polymerization. General purpose emulsifier, stabilizer.
Federal Regulation Compliance: 175.105, 178.3400, 180.1001 c,d,e

Dodecyl Phenol:
T-DET DD-5:
Average Moles E.O.: 5
Ionogenic Class: Nonionic
% Active (Minnimum): 99.5
Pure Yellow Liquid
HLB: 9.6
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.01
Weight Per Gallon (68F): 8.4
pH (1% Aqueous): 5-7
Typical Applications: Solvent cleaners, dry cleaning, agricultural, oil emulsifier, degreaser.
Federal Regulation Compliance: 178.3400, 180.1001 c,d,e

HARCROS CHEMICALS: T-DET Surfactants (Continued):

Dodecyl Phenol (Continued):

T-DET DD-7:
Average Moles E.O.: 7
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Pale Yellow Liquid
HLB: 11.1
Cloud Point (1% Solution): Insoluble
Pour Point: <0F
Flash Point (PMCC): >212F
Specific Gravity (68F): 1.04
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Solvent cleaners, dry cleaning, agricultural, oil emulsifier, degreaser.
Federal Regulation Compliance: 178.3400, 180.1001 c,d,e

T-DET DD-9:
Average Moles E.O.: 9
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Pale Yellow Liquid
HLB: 12.0
Cloud Point (1% Solution): Water dispersible
Pour Point: 42F
Flash Point (PMCC): >300F
Specific Gravity (68F): 1.05
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: General purpose, degreasing, emulsifiers. Low foaming.
Federal Regulation Compliance: 178.3400, 180.1001 c,d,e

T-DET DD-10:
Average Moles E.O.: 10
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Pale Yellow Liquid
HLB: 13.1
Cloud Point (1% Solution): 112F
Pour Point: 48F
Flash Point (PMCC): >300F
Specific Gravity (68F): 1.05
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: General purpose, degreasing, emulsifiers. Low foaming.
Federal Regulation Compliance: 178.3400, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

C12-C15 Alcohol (3EO) Ethoxysulfate:

T-DET 25-3S:
Ionogenic Class: Anionic
% Active (Minimum): 59.0
Pale Yellow Liquid
Pour Point: 30F
Flash Point (PMCC): 73F
Specific Gravity (68F): 1.05
Weight per Gallon (68F): 8.7
pH (1% Aqueous): 7-8
Typical Applications: High foaming liquid hand dishwashing detergent, liquid laundry products, car wash.

T-DET 25-3A:
Ionogenic Class: Anionic
% Active (Minimum): 59.0
Pale Yellow Liquid
Pour Point: 28F
Flash Point (PMCC): 74F
Specific Gravity (68F): 1.02
Weight Per Gallon (68F): 8.5
pH (1% Aqueous): 7-8
Typical Applications: High foaming liquid hand dishwashing detergent, liquid laundry products, car wash.

Castor Oil:

T-DET C-40:
Average Moles E.O.: 40
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Amber Liquid
HLB: 14.2
Pour Point: 60F
Flash Point (PMCC): >200F
Specific Gravity (68F): 1.05
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 5-7
Typical Applications: Leather, metal, textile processing, paints, paper, ink, rubber, polishes, agricultural, emulsifiers.
Federal Regulation Compliance: 175.105, 180.1001 c,d.e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Block Copolymers:

T-DET BP-1:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
White Solid
HLB: 15.7
Cloud Point (1% Solution): 154F
Pour Point: 85F
Flash Point (PMCC): >400F
Specific Gravity (68F): 1.04
Weight Per Gallon 8.7
Typical Applications: Emulsifier, dispersant & polymerization agent. Agricultural formulations.
Federal Regulation Compliance: 180.1001 c,d,e

T-DET EPO-61:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 3.0
Cloud Point (1% Solution): 73F
Pour Point: -18F
Flash Point (PMCC): >250F
Specific Gravity (68F): 1.01
Weight Per Gallon (68F): 8.4
pH (1% Aqueous): 5-7
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.
Federal Regulation Compliance: 175.105, 176.180, 180.1001 c,d,e

T-DET EPO-62:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 7.0
Cloud Point (1% Solution): 89F
Pour Point: 27F
Flash Point (PMCC): >250F
Specific Gravity (68F): 1.03
Weight Per Gallon (68F): 8.6
pH (1% Aqueous): 4-8
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.
Federal Regulation Compliance: 175.105, 176.180, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Block Copolymers (Continued):

T-DET EPO-64:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 15.0
Cloud Point (1% Solution): 138F
Pour Point: 48F
Flash Point (PMCC): >250F
Specific Gravity (68F): 1.04
Weight Per Gallon (68F): 8.7
pH (1% Aqueous): 4-8
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.
Federal Regulation Compliance: 175.105, 176.180, 180.1001 c,d,e

T-DET RQ1:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 3.0
Cloud Point (1% Solution): 77F
Pour Point: -22F
Flash Point (PMCC): >250F
Specific Gravity (68F): 1.02
Weight Per Gallon (68F): 8.5
pH (1% Aqueous): 4-8
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.
Federal Regulation Compliance: 175.105, 176.180, 180.1001 c,d,e

T-DET RY2:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
HLB: 4.0
Cloud Point (1% Solution): 84F
Pour Point: 14F
Flash Point (PMCC): >250F
Specific Gravity (68F): 1.03
Weight Per Gallon (68F): 8.6
pH (1% Aqueous): 4-8
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.
Federal Regulatiomn Compliance: 175.105, 176.180, 180.1001 c,d,e

HARCROS ORGANICS: T-DET Surfactants (Continued):

Block Copolymers (Continued):

T-DET LF-416:
Ionogenic Class: Nonionic
% Active (Minimum): 99.5
Clear Liquid
Cloud Point (1% Solution): 63F
Pour Point: 40F
Flash Point (PMCC): >350F
Specific Gravity (68F): 1.06
Weight Per Gallon (68F): 8.8
pH (1% Aqueous): 5-7
Typical Applications: Mechanical dishwash, metal cleaners, rinse aids, hard surface cleaners, defoamer, textile, paper, general low foam applications.

Proprietary Blends:

Foamer AD:
Ionogenic Class: Anionic
% Active (Minimum): 50.0
Clear Amber Liquid
Pour Point: <15F
Flash Point (PMCC): 157F
Specific Gravity (68F): 1.06
Weight Per Gallon (68F): 8.8
pH (1% Aqueous): 7-8
Typical Applications: Foamer for air mist drilling, general detergents, gypsum board production. Ether sulfate.

Foamer CD:
Ionogenic Class: Anionic
% Active (Minimum): 55.0
Clear Amber Liquid
Pour Point: 15F
Flash Point (PMCC): 188F
Specific Gravity (68F): 1.07
Weight Per Gallon (68F): 8.9
pH (1% Aqueous): 7-8
Typical Applications: Foamer for air mist drilling, general detergents, gypsum board production. Ether sulfate.

HENKEL CORP.: EMEREST Alkyl and Glycol Esters:

The EMEREST Alkyl and Glycol Esters are derived from many fatty acids and simple alcohols or glycols. Because of their diverse physical and chemical properties, they have a wide variety of uses.

EMEREST 2301 Methyl Oleate and EMEREST 2302 Propyl Oleate:
Form @ 25C: Liquid Pour Pt. -16
Viscosity cSt 100F: 5
Density Pounds/Gallon: 7.3
Color Gardner: <6
Flash Point F: 350

EMEREST 2308 Tridecyl Stearate:
Form @ 25C: Liquid Pour Pt. 3
Viscosity cSt 100F: 18
Density Pounds/Gallon: 7.1
Color Gardner: 1
Flash Point F: 440

EMEREST 2314 Isopropyl Myristate:
Form @ 25C: Liquid Pour Pt. -5
Viscosity cSt 100F: 4
Density Pounds/Gallon: 7.1
Color Gardner: 1
Flash Point F: 320

EMEREST 2316 Isopropyl Palmitate:
Form @ 25C: Liquid Pour Pt. 14
Viscosity cSt 100F: 6
Density Pounds/Gallon: 7.1
Color Gardner: 1
Flash Point F: 340

EMEREST 2324 Isobutyl Stearate:
Form @ 25C: Liquid Pour Pt. 10
Viscosity cSt 100F: 10
Density Pounds/Gallon: 7.1
Color Gardner: 1
Flash Point F: 370

EMEREST 2325 Butyl Stearate:
Form @ 25C: Liquid Pour Pt. 18
Viscosity cSt 100F: 7
Density Pounds/Gallon: 7.1
Color Gardner: 4
Flash Point F: 370

HENKEL CORP.: EMEREST Alkyl and Glycol Esters (Continued):

EMEREST 2326 Butyl Stearate:
Form @ 25C: Liquid Pour Pt. 20
Viscosity cSt 100F: 7
Density Pounds/Gallon: 7.2
Color Gardner: 1
Flash Point F: 375

EMEREST 2328 Butyl Oleate:
Form @ 25C: Liquid Pour Pt. -25
Viscosity cSt 100F: 6
Density Pounds/Gallon: 6.9
Color Gardner: 4
Flash Point F: 356

EMEREST 2485 Pentaerythritol Tetrapelargonate:
Form @ 25C: Liquid Pour Pt. 10
Viscosity cSt 100F: 35
Density Pounds/Gallon: 8.0
Color Gardner: 1
Flash Point F: 555

EMEREST 2350 Ethylene Glycol Monostearate:
HLB: 2.2
Form @ 25C: Solid M.P. 50
Color Gardner: 1
Flash Point F: 390

EMEREST 2355 Ethylene Glycol Distearate:
HLB: 1.3
Form @ 25C: Solid M.P. 62
Color Gardner: 4
Flash Point F: 485

EMEREST 2380 Propylene Glycol Monostearate:
HLB: 1.8
Form @ 25C: Solid M.P. 36
Density Pounds/Gallon: 7.3 @ 45C
Color Gardner: 2
Flash Point F: 470

EMEREST 2384 Propylene Glycol Monoisostearate:
HLB: 1.8
Form @ 25C: Liquid Pour Pt. <4
Viscosity cSt 100F: 27
Density Pounds/Gallon: 7.1
Color Gardner: 1
Flash Point F: 385

EMEREST 2388 Propylene Glycol Dipelargonate:
HLB: 2.2
Form @ 25C: Liquid Pour Pt. <3
Viscosity cSt 100F: 11
Density Pounds/Gallon: 7.6
Color Gardner: 1
Flash Point F: 380

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters:

The EMEREST/TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters are nonionic, specialized, mono and diesters of various fatty acids. These products can be prepared by the condensation or addition of ethylene oxide to a fatty acid at the site of its active hydrogen or by esterification of the fatty acid with polyethylene glycol. The chemical composition of the monoester product is represented by the general formula R-CO-(O-CH2CH2)n-OH where "R-CO" represents the hydrophobic base and "n" denotes the average mole ratio of oxyethylene to the base. The diester product is represented by the general formula R-CO-(O-CH2CH2)n-O-CO-R. The ethoxylated fatty acids are designated by the POE nomenclature (polyoxyethylene) and the mole ratio of oxyethylene to hydrophobic base is shown by the digits in parethensis.

EMEREST 2634 PEG 300 Monopelargonate:
HLB: 12.8
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 25
Density Pounds/Gallon: 8.6
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 485

EMEREST 2654 PEG 400 Monopelargonate:
HLB: 14.3
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 34
Density Pounds/Gallon: 8.7
Color Gardner: 1
Cloud Point C: 2% Saline 37
Flash Point F: 440

EMEREST 2620 PEG 200 Monolaurate:
HLB: 9.3
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 123
Density Pounds/Gallon: 8.2
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 445

EMEREST 2650 PEG 400 Monolaurate:
HLB: 13.2
Form @ 25C: Liquid Pour Pt. 12
Viscosity cSt 100F: 41
Density Pounds/Gallon: 8.6
Color Gardner: 1
Cloud Point: 33
Flash Point F: 450

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters (Continued):

EMEREST 2661 PEG 600 Monolaurate:
HLB: 14.8
Form @ 25C: Liquid Pour Pt. 14
Viscosity cSt 100F: 60
Density Pounds/Gallon: 8.6
Color Gardner: 2
Cloud Point C: 63
Flash Point F: 525

EMEREST 2622 PEG 200 Dilaurate:
HLB: 7.6
Form @ 25C: Liquid Pour Pt. 0
Viscosity cSt 100F: 22
Density Pounds/Gallon: 8.0
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 455

EMEREST 2652 PEG 400 Dilaurate:
HLB: 10.8
Form @ 25C: Liquid Pour Pt. 8
Viscosity cSt 100F: 38
Density Pounds/Gallon: 8.3
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 420

TRYDET 2685 Ethoxylated Fatty Acid:
HLB: 7.5
Form @ 25C: Solid M.P. 37
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 350

TRYDET 2670 POE (5) Stearic Acid:
HLB: 9.2
Form @ 25C: Liquid Pour Pt. 25
Viscosity cSt 100F: 44
Density Pounds/Gallon: 8.6
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 500

TRYDET 2671 POE (8) Stearic Acid:
HLB: 11.4
Form @ 25C: Solid M.P. 30
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 500

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters (Continued):

EMEREST 2640 PEG 400 Monostearate:
HLB: 12.0
Form @ 25C: Solid M.P. 32
Viscosity cSt 100F: 57
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 425

EMEREST 2662 PEG 600 Monostearate:
HLB: 13.8
Form @ 25C: Solid M.P. 40
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: 55
Flash Point F: 440

EMEREST 2610 PEG 1000 Monostearate:
HLB: 15.7
Form @ 25C: Solid M.P. 36
Color Gardner: 1
Cloud Point C: 86-90
Flash Point F: 430

EMEREST 2675 POE (50) Stearic Acid - 30% aqueous:
HLB: 17.8
Form @ 25C: Liquid Pour Pt. 0
Viscosity cSt 100F: 671
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: 5% Saline 81
Flash Point F: 540

EMEREST 2642 PEG 400 Distearate:
HLB: 7.5
Form @ 25C: Solid M.P. 36
Viscosity cSt 100F: 52
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 470

EMEREST 2625 PEG 200 Monoisostearate:
HLB: 8.3
Form @ 25C: Liquid Pour Pt. -8
Viscosity cSt 100F: 50
Density Pounds/Gallon: 8.2
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 310

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters (Continued):

TRYDET 2644 PEG 400 Monoisostearate:
HLB: 11.3
Form @ 25C: Liquid Pour Pt. 10
Viscosity cSt 100F: 70
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 450

EMEREST 2624 PEG 200 Monooleate:
HLB: 8.3
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 34
Density Pounds/Gallon: 8.1
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 415

EMEREST 2632 PEG 300 Monooleate:
HLB: 10.4
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 46
Density Pounds/Gallon: 8.3
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 425

EMEREST 2646 PEG 400 Monooleate:
HLB: 11.8
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 52
Density Pounds/Gallon: 8.5
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 555

TRYDET 2676 POE (10) Oleic Acid:
HLB: 12.2
Form @ 25C: Liquid Pour Pt. 14
Viscosity cSt 100F: 54
Density Pounds/Gallon: 8.5
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 560

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters (Continued):

EMEREST 2660 PEG 600 Monooleate:
HLB: 13.6
Form @ 25C: Liquid Pour Pt. 18
Viscosity cSt 100F: 75
Density Pounds/Gallon: 8.7
Color Gardner: 2
Cloud Point C: 47
Flash Point F: 545

EMEREST 2617 PEG 6000 Monooleate:
HLB: 19.2
Form @ 25C: Solid M.P. 58
Color Gardner: 3
Cloud Point C: 5% Saline 81
Flash Point FG: 470

EMERSET 2619 PEG 6000 Monooleate (50%):
HLB: 19.2
Form @ 25C: Liquid Pour Pt. 0
Viscosity cSt 100F: 1600
Density Pounds/Gallon: 8.9
Color Gardner: 2

EMEREST 2647 PEG 400 Sesquioleate:
HLB: 9.4
Form @ 25C: Liquid Pour Pt. -6
Viscosity cSt 100F: 50
Density Pounds/Gallon: 8.2
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 550

EMEREST 2648 PEG 400 Dioleate:
HLB: 8.8
Form @ 25C: Liquid Pour Pt. -6
Viscosity cSt 100F: 45
Density Pounds/Gallon: 8.1
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 515

EMEREST 2665 PEG 600 Dioleate:
HLB: 10.3
Form @ 25C: Liquid Pour Pt. 19
Viscosity cSt 100F: 64
Density Pounds/Gallon: 8.3
Color Gardner: 4
Cloud Point C: <25
Flash Point F: 530

HENKEL CORP.: EMEREST and TRYDET Ethoxylated Fatty Acids and Polyethylene Glycol Fatty Acid Esters (Continued):

TRYDET 2682 Ethoxylated Mixed Rosin and Fatty Acids:
HLB: 13.4
Form @ 25C: Liquid Pour Pt. 17
Viscosity cSt 100F: 209
Density Pounds/Gallon: 9.0
Color Gardner: 10
Cloud Point C: 5% Saline 42-53
Flash Point F: 590

TRYDET 2681 Ethoxylated Tall Oil:
HLB: 12.1
Form @ 25C: Liquid Pour Pt. 20
Viscosity cSt 100F: 196
Density Pounds/Gallon: 9.0
Color Gardner: 12
Cloud Point C: 35
Flash Point F: 530

HENKEL CORP.: EMEREST Glycerol Esters:

EMEREST Glycerol Esters are polyol surfactants created by the esterification of glycerol with stearic, oleic and isostearic fatty acids.

EMEREST 2400 Glycerol Monostearate:
HLB: 3.9
Form @ 25C: Solid M.P. 58
Viscosity cSt 100F: Solid
Color Gardner: 1
Flash Point F: 415

EMEREST 2401 Glycerol Monostearate:
HLB: 3.9
Form @ 25C: Solid M.P. 58
Viscosity cSt 100F: Solid
Color Gardner: 2
Flash Point F: 425

EMEREST 2407 Glycerol Monostearate, SE:
HLB: 5.1
Form @ 25C: Solid M.P. 58
Viscosity cSt 100F: Solid
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 385

EMEREST 2410 Glycerol Monoisostearate:
HLB: 2.9
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 260
Density Pounds/Gallon: 7.8
Color Gardner: 2
Flash Point F: 400

EMEREST 2421 Glycerol Monooleate:
HLB: 3.4
Form @ 25C: Liquid Pour Pt. 19
Viscosity cSt 100F: 91
Density Pounds/Gallon: 7.9
Color Gardner: 11
Flash Point F: 465

EMEREST 2419 Glycerol Dioleate:
HLB: 1.6
Form @ 25C: Liquid Pour Pt. <0
Viscosity cSt 100F: 55
Density Pounds/Gallon: 7.7

EMEREST 2423 Glycerol Trioleate:
HLB: 0.6
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 43
Density Pounds/Gallon: 7.6

EMEREST 2452 Triglycerol Diisostearate:
HLB: 6.7
Form @ 25C: Liquid Pour Pt. 4
Viscosity cSt 100F: 990
Density Pounds/Gallon: 8.2

HENKEL CORP.: EMERY Polyethylene Glycols:

EMERY Polyethylene Glycols, also known as polyoxyethylene glycols, are condensation polymers of ethylene oxide represented by the general formula HO(CH2CH20)nH where "n" represents the average number of ethylene oxide units. The products are designated by a number that is approximately the average molecular weight. For example, PEG-200 has an average molecular weight of 200. As the average molecular weight increases, viscosity and pour point increase.

EMERY 6773 PEG-200:
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 25
Density Pounds/Gallon: 9.4
Color Gardner: <1
Flash Point F: >330

EMERY 6687 PEG-300:
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 33
Density Pounds/Gallon: 9.4
Color Gardner: <1
Flash Point F: >400

EMERY 6709 PEG-400:
Form @ 25C: Liquid Pour Pt. 6
Viscosity cSt 100F: 45
Density Pounds/Gallon: 9.4
Color Gardner: <1
Flash Point F: >350

EMERY 6686 PEG-600:
Form @ 25C: Liquid Pour Pt. 22
Viscosity cSt 100F: 63
Density Pounds/Gallon: 9.4
Color Gardner: <1
Flash Point F: 475

HENKEL CORP.: EMID Alkanolamides:

Classically, alkanolamides are condensation products of alkanolamines (mainly mono-, and diethanolamine and mono-isopropanolamine) with fatty acids, methyl esters or triglycerides (natural oils).

Super Diethanolamides:

EMID 6500 Coconut Monoethanolamide:
Form @ 25C: Flaked Solid M.P. 72
Density Pounds/Gallon: 7.5 @ 75C
Color Gardner: 8
Flash Point F: 405

EMID 6515 Coconut Super Diethanolamide:
Form @ 25C: Liquid Pour Pt. 0
Viscosity cSt 100F: 390
Density Pounds/Gallon: 8.3
Color Gardner: 4
Flash Point F: 370

EMID 6545 Oleic Diethanolamide:
Form @ 25C: Liquid Pour Pt. -3
Viscosity cSt 100F: 290
Density Pounds/Gallon: 7.7
Color Gardner: 7
Flash Point F: 475

Modified Diethanolamides:

EMID 6533 Coconut Diethanolamide:
Form @ 25C: Liquid Pour Pt. -15
Viscosity cSt 100F: 345
Density Pounds/Gallon: 8.7
Color Gardner: 5
Flash Point F: 365

EMID 6521 Coconut Diethanolamide:
Form @ 25C: Liquid Pour Pt. <25
Viscosity cSt 100F: 614
Density Pounds/Gallon: 8.3
Color Gardner: 2
Flash Point F: 345

EMID 6529 Coconut Diethanolamide:
Form @ 25C: Liquid Pour Pt. <25
Viscosity cSt 100F: 619
Density Pounds/Gallon: 8.3
Color Gardner: 2
Flash Point F: 360

HENKEL CORP.: EMSORB Sorbitan Fatty Acid Esters:

EMSORB Sorbitan Fatty Acid Esters, or polyol esters, are created by the two basic mechanisms of dehydration and esterification. Sorbitol, with six hydroxyl groups, is dehydrated, undergoing ring closure with the loss of two hydroxyl groups. The cyclic sorbitan moiety is produced. Through the esterification reaction, hydrophobic fatty acids are combined with the sorbitan, thereby decreasing its hydrophilic attributes. The exact degree of hydrophilicity depends on the size and number (mono-, di-, tri-) of acid molecules added to one sorbitan molecule.

EMSORB 2500 Sorbitan Monooleate:
HLB: 4.6
Form @ 25C: Liquid Pour Pt. <0
Viscosity cSt 100F: 360

EMSORB 2502 Sorbitan Sesquioleate:
HLB: 4.5
Form @ 25C: Liquid Pour Pt. <0
Viscosity cSt 100F: 475

EMSORB 2503 Sorbitan Trioleate:
HLB: 2.1
Form @ 25C: Liquid Pour Pt. <0
Viscosity cSt 100F: 100

EMSORB 2505 Sorbitan Monostearate:
HLB: 5.2
Form @ 25C: Solid M.P. 50

EMSORB 2510 Sorbitan Monopalmitate:
HLB: 6.5
Form @ 25C: Solid M.P. 47

EMSORB 2515 Sorbitan Monolaurate:
HLB: 8.0
Form @ 25C: Liquid Pour Pt. 15
Viscosity cSt 100F: 1000

EMSORB 2516 Sorbitan Monoisostearate:
HLB: 4.6
Form @ 25C: Solid M.P. 50
Viscosity cSt 100F: 1200

EMSORB 2518 Sorbitan Diisostearate:
HLB: 3.0
Form @ 25C: Liquid Pour Pt. -4
Viscosity cSt 100F: 730

HENKEL CORP.: EMSORB Ethoxylated Sorbitan Esters:

EMSORB Ethoxylated Sorbitan Esters are the hydrophilic counterparts to the hydrophobic EMSORB Sorbitan Fatty Acid Esters. Varying moles of ethylene oxide are added to the Sorbitan Fatty Acid Ester to produce these materials. The more ethylene oxide added the more hydrophilic the molecule becomes as seen by its increased Hydrophile-Lipophile balance Value (HLB).

EMSORB Ethoxylated Sorbitan Esters are based on oleic, stearic and lauric fatty acids. Their hydrophilic character makes these nonionic materials ideal for the preparation of oil-in-water (O/W) emulsions. They can emulsify mineral and vegetable oils, fats, solvents and waxes. When used as co-emulsifiers with the EMSORB Sorbitan Fatty Acid Esters, a wide range of HLB values can be created to obtain the optimum value or required HLB for any desired emulsion, either oil-in-water or water-in-oil.

EMSORB 6900 POE (20) Sorbitan Monostearate:
HLB: 15.0
Form @ 25C: Liquid Pour Pt. -12
Viscosity cSt 100F: 200

EMSORB 6901 POE (5) Sorbitan Monooleate:
HLB: 10.0
Form @ 25C: Liquid Pour Pt. -15
Viscosity cSt 100F: 210

EMSORB 6903 POE (20) Sorbitan Trioleate:
HLB: 11.1
Form @ 25C: Liquid Pour Pt. -15
Viscosity cSt 100F: 160

EMSORB 6917 POE (16) Sorbitan Trioleate:
HLB: 10.0
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 122

EMSORB 6906 POE (3) Sorbitan Monostearate:
HLB: 9.0
Form @ 25C: Solid M.P. 42

EMSORB 6908 POE (16) Sorbitan Tristearate:
HLB: 10.0
Form @ 25C: Solid M.P. 38

EMSORB 6909 POE (4) Sorbitan Monostearate:
HLB: 9.6
Form @ 25C: Solid M.P. 35

EMSORB 6915 POE (20) Sorbitan Monolaurate:
HLB: 16.7
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 160

HENKEL CORP.: TRYCOL Ethoxylated Alcohols:

TRYCOL Ethoxylated Alcohols are nonionic polyoxyethylene surfactants prepared commercially by the condensation or addition of ethylene oxide to a hydrophobic compound at the site of an active hydrogen. In this case the active hydrogen is at the hydroxyl group on a hydrophobic alcohol.

TRYCOL 5950 POE (4) Decyl Alcohol:
HLB: 10.5
Form @ 25C: Liquid Pour Pt. -5
Viscosity cSt 100F: 17
Density Pounds/Gallon: 7.9
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 260

TRYCOL 5951 POE (5) Decyl Alcohol:
HLB: 11.6
Form @ 25C: Liquid Pour Pt. 8
Viscosity cSt 100F: 19
Density Pounds/Gallon: 8.0
Color Gardner: 1
Cloud Point C: 30
Flash Point F: 340

TRYCOL 5952 POE (6) Decyl Alcohol:
HLB: 12.4
Form @ 25C: Liquid Pour Pt. 8
Viscosity cSt 100F: 26
Density Pounds/Gallon: 8.3
Color Gardner: 1
Cloud Point C: 42
Flash Point F: 280

TRYCOL 5953 POE (6) Decyl Alcohol - 90% active:
HLB: 12.4
Form @ 25C: Liquid Pour Pt. -15
Viscosity cSt 100F: 28
Density Pounds/Gallon: 8.3
Color Gardner: 1
Cloud Point C: 42
Flash Point F: 315

TRYCOL 5993 POE (3) Tridecyl Alcohol:
HLB: 7.9
Form @ 25C: Liquid Pour Pt. -15
Viscosity cSt 100F: 19
Density Pounds/Gallon: 7.8
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 300

HENKEL CORP.: TRYCOL Ethoxylated Alcohols (Continued):

TRYCOL 5940 POE (6) Tridecyl Alcohol:
HLB: 11.4
Form @ 25C: Liquid Pour Pt. 12
Viscosity cSt 100F: 32
Density Pounds/Gallon: 8.2
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 345

TRYCOL 5949 POE (8) Tridecyl Alcohol:
HLB: 12.5
Form @ 25C: Liquid Pour Pt. 8
Viscosity cSt 100F: 39
Density Pounds/Gallon: 8.3
Color Gardner: 1
Cloud Point C: 43
Flash Point F: 370

TRYCOL 5941 POE (9) Tridecyl Alcohol:
HLB: 13.0
Form @ 25C: Liquid Pour Pt. 20
Viscosity cSt 100F: 43
Density Pounds/Gallon: 8.3
Color Gardner: 1
Cloud Point C: 54
Flash Point F: 390

TRYCOL 5942 POE (11) Tridecyl Alcohol:
HLB: 13.8
Form @ 25C: Liquid Pour Pt. 17
Viscosity cSt 100F: 47
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: 43

TRYCOL 5968 POE (8) Tridecyl Alcohol - 90% active:
HLB: 12.5
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 51
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: 54

HENKEL CORP.: TRYCOL Ethoxylated Alcohols (Continued):

TRYCOL 5944 POE (9) Tridecyl Alcohol - 85% active:
HLB: 13.0
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 61
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: 54

TRYCOL 5943 POE (12) Tridecyl Alcohol:
HLB: 14.5
Form @ 25C: Semi-solid M.P. 16
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: 70
Flash Point F: 440

TRYCOL 5874 POE (14) Tridecyl Alcohol - 75% active:
HLB: 15.0
Form @ 25C: Liquid Pour Pt. 10
Viscosity cSt 100F: 78
Density Pounds/Gallon: 8.7
Color Gardner: 1
Cloud Point C: 5% Saline 80

TRYCOL 5946 POE (18) Tridecyl Alcohol:
HLB: 16.0
Form @ 25C: Solid M.P. 38
Density Pounds/Gallon: 8.5 at 40C
Color Gardner: 1
Cloud Point C: 5% Saline 83
Flash Point F: 475

TRYCOL 5882 POE (4) Lauryl Alcohol:
HLB: 9.2
Form @ 25C: Liquid Pour Pt. 12
Viscosity cSt 100F: 20
Density Pounds/Gallon: 7.7
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 325

TRYCOL 5967 POE (12) Lauryl Alcohol:
HLB: 14.4
Form @ 25C: Solid M.P. 32
Density Pounds/Gallon: 8.2
Color Gardner: 1
Cloud Point C: 63
Flash Point F: 415

HENKEL CORP.: TRYCOL Ethoxylated Alcohols (Continued):

TRYCOL 5964 POE (23) Lauryl Alcohol:
HLB: 16.7
Form @ 25C: Solid M.P. 40
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: 90
Flash Point F: 465

TRYCOL 5888 POE (20) Stearyl Alcohol:
HLB: 15.3
Form @ 25C: Solid M.P. 40
Density Pounds/Gallon: 8.6 at 70C
Color Gardner: 1
Cloud Point C: 5% Saline 93
Flash Point F: 440

TRYCOL 5972 POE (23) Oleyl Alcohol:
HLB: 15.8
Form @ 25C: Solid M.P. 47
Color Gardner: 2
Cloud Point C: 5% Saline 89
Flash Point F: 440

TRYCOL 5971 POE (20) Oleyl Alcohol:
HLB: 15.3
Form @ 25C: Solid M.P. 39
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: 5% Saline 87
Flash Point F: 500

TRYCOL 5966 Ethoxylated Lauryl Alcohol:
HLB: 8.7
Form @ 25C: Liquid Pour Pt. -7
Viscosity cSt 100F: 23
Density Pounds/Gallon: 7.8
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 340

HENKEL CORP.: TRYCOL Ethoxylated Alkylphenols:

TRYCOL Ethoxylated Alkylphenols are nonionic polyoxyethylene surfactants prepared commercially by the condensation or addition of ethylene oxide to alkylphenol at the site of its active hydrogen.

TRYCOL 6975 POE (30) Octylphenol - 70% active:
HLB: 17.1
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 260
Density Pounds/Gallon: 9.0
Color Gardner: 1
Cloud Point C: 10% Saline 92

TRYCOL 6984 POE (40) Octylphenol - 70% active:
HLB: 17.9
Form @ 25C: Liquid Pour Pt. 13
Viscosity cSt 100F: 220
Density Pounds/Gallon: 9.0
Color Gardner: 1
Cloud Point C: 10% Saline 74

TRYCOL 6960 POE (1) Nonylphenol:
HLB: 4.6
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 150
Density Pounds/Gallon: 8.3
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 385

TRYCOL 6961 POE (4) Nonylphenol:
HLB: 8.9
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 472
Density Pounds/Gallon: 8.5
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 430

TRYCOL 6940 POE (5) Nonylphenol:
HLB: 9.9
Form @ 25C: Liquid Pour Pt. 11
Viscosity cSt 100F: 102
Density Pounds/Gallon: 8.5
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 500

HENKEL CORP.: TRYCOL Ethoxylated Alkylphenols (Continued):

TRYCOL 6962 POE (6) Nonylphenol:
HLB: 10.9
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 100
Density Pounds/Gallon: 8.5
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 515

TRYCOL 6963 POE (7) Nonylphenol:
HLB: 11.7
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 100
Density Pounds/Gallon: 8.6
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 495

TRYCOL 6964 POE (9) Nonylphenol:
HLB: 13.0
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 112
Density Pounds/Gallon: 8.8
Color Gardner: 1
Cloud Point C: 54
Flash Point F: 510

TRYCOL 6974 POE (10) Nonylphenol:
HLB: 13.2
Form @ 25C: Liquid Pour Pt. 11
Viscosity cSt 100F: 111
Density Pounds/Gallon: 8.7
Color Gardner: 1
Cloud Point C: 62
Flash Point F: 530

TRYCOL 6965 POE (11) Nonylphenol:
HLB: 13.5
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 116
Density Pounds/Gallon: 8.7
Color Gardner: 2
Cloud Point C: 71
Flash Point F: 480

TRYCOL 6953 POE (12) Nonylphenol:
HLB: 14.1
Form @ 25C: Liquid Pour Pt. 10
Viscosity cSt 100F: 131
Density Pounds/Gallon: 8.8
Color Gardner: 1
Cloud Point C: 80
Flash Point F: 430

HENKEL CORP.: TRYCOL Ethoxylated Alkylphenols (Continued):

TRYCOL 6952 POE (15) Nonylphenol:
HLB: 15.0
Form @ 25C: Liquid Pour Pt. 20
Viscosity cSt 100F: 139
Density Pounds/Gallon: 8.9
Color Gardner: 1
Cloud Point C: 97
Flash Point F: 525

TRYCOL 6967 POE (20) Nonylphenol:
HLB: 16.0
Form @ 25C: Solid M.P. 34
Color Gardner: 1
Cloud Point C: 5% Saline 88
Flash Point F: 515

TRYCOL 6968 POE (30) Nonylphenol:
HLB: 17.1
Form @ 25C: Solid M.P. 43
Color Gardner: 1
Cloud Point C: 5% Saline 93
Flash Point F: 515

TRYCOL 6969 POE (30) Nonylphenol - 70% active:
HLB: 17.1
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 260
Density Pounds/Gallon: 9.0
Color Gardner: 1
Cloud Point C: 5% Saline 92

TRYCOL 6957 POE (40) Nonylphenol - 70% active:
HLB: 17.8
Form @ 25C: Solid M.P. 40
Color Gardner: 1
Cloud Point C: 5% Saline 90
Flash Point F: 560

TRYCOL 6970 POE (40) Nonylphenol:
HLB: 17.8
Form @ 25C: Liquid Pour Pt. 7
Viscosity cSt 100F: 385
Density Pounds/Gallon: 9.2
Color Gardner: 1
Cloud Point C: 5% Saline 90

HENKEL CORP.: TRYCOL Ethoxylated Alkylphenols (Continued):

TRYCOL 6971 POE (50) Nonylphenol:
HLB: 18.2
Form @ 25C: Solid M.P. 54
Color Gardner: 1
Cloud Point C: 10% Saline 76
Flash Point F: 520

TRYCOL 6972 POE (50) Nonylphenol - 70% active:
HLB: 18.2
Form @ 25C: Liquid Pour Pt. -4
Viscosity cSt 100F: 440
Density Pounds/Gallon: 9.0
Color Gardner: 1
Cloud Point C: 10% Saline 76

TRYCOL 6942 POE (100) Nonylphenol:
HLB: 19.0
Form @ 25C: Solid M.P. 56
Color Gardner: 1
Cloud Point C: 10% Saline 72
Flash Point F: 500

TRYCOL 6981 POE (100) Nonylphenol - 70% active:
HLB: 19.0
Form @ 25C: Liquid Pour Pt. 18
Viscosity cSt 100F: 564
Density Pounds/Gallon: 9.2
Color Gardner: 1
Cloud Point C: 10% Saline 72

TRYCOL 6954 POE (150) Nonylphenol:
HLB: 19.3
Form @ 25C: Solid M.P. 60
Color Gardner: 1
Cloud Point C: 10% Saline 69
Flash Point F: 500

TRYCOL 6985 POE (8) Dinonylphenol:
HLB: 10.4
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 173
Density Pounds/Gallon: 8.4
Color Gardner: 2
Cloud Point C: <25
Flash Point F: 525

TRYCOL 6989 POE (150) Dinonylphenol - 50%:
HLB: 19.0
Form @ 25C: Liquid Pour Pt. 23
Viscosity cSt 100F: 367
Density Pounds/Gallon: 9.0
Color Gardner: 1
Cloud Point C: 5% Saline 85

HENKEL CORP.: TRYFAC Phosphate Esters:

TRYFAC Phosphate Esters are proprietary anionic surfactants prepared by the phosphation of various types of nonionic alcohols, ethoxylated alcohols and ethoxylated alkyl phenols. The finished products are a blend of monoester and diester with slight amounts of free or unreacted phosphoric acid and nonionic. TRYFAC Phosphate Esters are available as either the free acid form (not neutralized) and/or the potassium salt.

TRYFAC 5559 Phosphate Ester - Potassium Salt:
Form @ 25C: Liquid Pour Pt. 18
Viscosity cSt 100F: 560
Density Pounds/Gallon: 8.8
Color Gardner: 2
Cloud Point C: 5% Saline 76
Flash Point F: 435

TRYFAC 5552 Phosphate Ester - free acid form:
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 170
Density Pounds/Gallon: 8.8
Color Gardner: 1
Cloud Point C: 76
Flash Point F: 360

TRYFAC 5553 Phosphate Ester - potassium salt of TRYFAC 5552:
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 345
Density Pounds/Gallon: 9.2
Color Gardner: 1
Cloud Point C: 10% Saline >100

TRYFAC 5554 Phosphate Ester - potassium salt:
Form @ 25C: Liquid Pour Pt. -9
Viscosity cSt 100F: 340
Density Pounds/Gallon: 9.4
Color Gardner: 1
Cloud Point C: 10% Saline >100

TRYFAC 5555 Complex Phosphate Ester - free acid form:
Form @ 25C: Liquid Pour Pt. -3
Viscosity cSt 100F: 2300
Density Pounds/Gallon: 8.8
Color Gardner: 5
Cloud Point C: <25
Flash Point F: 440

HENKEL CORP.: TRYFAC Phosphate Esters (Continued):

TRYFAC 5556 Complex Phosphate Ester - free acid form:
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 1700
Density Pounds/Gallon: 9.3
Color Gardner: 2
Cloud Point C: 5% Saline 68
Flash Point F: 450

TRYFAC 5571 Phosphate Ester:
potassium salt of a phosphate ester of an ethoxylated alcohol
Form @ 25C: Liquid Pour Pt. <-15
Viscosity cSt 100F: 650
Density Pounds/Gallon: 9.2
Color Gardner: 1
Cloud Point C: 5% Saline 45

TRYFAC 5573 Phosphate Ester:
oleophilic ester in free acid form
Form @ 25C: Solid M.P. 35
Density Pounds/Gallon: 7.8 @ 40C
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 365

TRYFAC 5576 Phosphate Ester:
potassium salt of a phosphate ester of an ethoxylated alcohol
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 190
Density Pounds/Gallon: 9.5
Color Gardner: 1
Cloud Point C: 5% Saline 49-54

HENKEL CORP.: TRYLOX Ethoxylated Sorbitol and Ethoxylated Sorbitol Esters:

TRYLOX Ethoxylated Sorbitols and Ethoxylated Sorbitol Esters are nonionic, hydrophilic surfactants that function as emulsifiers, dispersants, wetting agents, lubricants, plasticizers and solubilizers in household, industrial and institutional products. The TRYLOX series generally contains structures that are highly efficient oil/solvent emulsifiers, hence they find wide acceptance as major emulsifier components in industrial use.

TRYLOX Ethoxylated Sorbitol is prepared commercially by the condensation or addition of ethylene oxide to sorbitol at the site of an active hydrogen located at each hydroxyl unit on sorbitol. TRYLOX Ethoxylated Sorbitol Esters are first ethoxylated, then esterified with oleic acid in such a way that all terminal hydroxyl groups are fully reacted. In general, an increase in the ethylene oxide chain which is added to sorbitol increases the HLB value (water solubility), pour point, and flash point of the product.

TRYLOX Ethoxylated Sorbitol Esters are relatively low foaming and find wide use as emulsifiers for petroleum oils, vegetable oils, organic solvents and oil based metal lubricants. TRYLOX Ethoxylated Sorbitol functions as a humectant and plasticizer and serves as an intermediate in the synthesis of fatty acid esters and improves the pourability and clarity of high solid "clear concentrate" surfactant solutions.

TRYLOX 6753 POE (20) Sorbitol:
HLB: 15.4
Form @ 25C: Liquid Pour Pt. 7
Viscosity cSt 100F: 200
Density Pounds/Gallon: 9.7
Color Gardner: 1
Cloud Point C: 10% Saline >100
Flash Point F: 435

TRYLOX 6746 POE (40) Sorbitol Hexaoleate:
HLB: 10.4
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 120
Density Pounds/Gallon: 8.4
Color Gardner: 6
Cloud Point C: <25
Flash Point F: 515

TRYLOX 6747 POE (60) Sorbitol Hexaoleate:
HLB: 11.3
Form @ 25C: Liquid Pour Pt. 4
Viscosity cSt 100F: 110
Density Pounds/Gallon: 8.4
Color Gardner: 4
Cloud Point C: <25
Flash Point F: 525

HENKEL CORP.: TRYLOX Ethoxylated Triglycerides:

TRYLOX Ethoxylated Triglycerides are nonionic polyoxyethylene surfactants prepared commercially by the condensation or addition of ethylene oxide to a hydrophobic compound, castor oil. Castor oil is a triglyceride (ester) of fatty acids with the approximate composition 90% ricinoleic acid, an 18-carbon acid having a double bond in the 9-10 position and the hydroxyl group on the 12th carbon.

TRYLOX 5900 POE (5) Castor Oil:
HLB: 4.0
Form @ 25C: Liquid Pour Pt. -3
Viscosity cSt 100F: 375
Density Pounds/Gallon: 8.2
Color Gardner: 4
Flash Point F: 550

TRYLOX 5902 POE (16) Castor Oil:
HLB: 8.6
Form @ 25C: Liquid Pour Pt. -22
Viscosity cSt 100F: 546
Density Pounds/Gallon: 8.5
Color Gardner: 3
Cloud Point C: <25
Flash Point F: 565

TRYLOX 5904 POE (25) Castor Oil:
HLB: 10.8
Form @ 25C: Liquid Pour Pt. -5
Viscosity cSt 100F: 396
Density Pounds/Gallon: 8.6
Color Gardner: 4
Cloud Point C: 1% Saline 66
Flash Point F: 565

TRYLOX 5906 POE (30) Castor Oil:
HLB: 11.8
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 309
Density Pounds/Gallon: 8.8
Color Gardner: 2
Cloud Point C: 1% Saline 55
Flash Point F: 555

TRYLOX 5907 POE (36) Castor Oil:
HLB: 12.6
Form @ 25C: Liquid Pour Pt. 12
Viscosity cSt 100F: 363
Density Pounds/Gallon: 8.8
Color Gardner: 2
Cloud Point C: 1% Saline 78
Flash Point F: 575

HENKEL CORP.: TRYLOX Ethoxylated Triglycerides(Continued):

TRYLOX 5909 POE (40) Castor Oil:
HLB: 13.0
Form @ 25C: Liquid Pour Pt. 18
Viscosity cSt 100F: 313
Density Pounds/Gallon: 8.8
Color Gardner: 2
Cloud Point C: 1% Saline 80

TRYLOX 5918 POE (200) Castor Oil - 50% active:
HLB: 18.1
Form @ 25C: Liquid Pour Pt. 7
Viscosity cSt 100F: 1015
Density Pounds/Gallon: 8.5
Color Gardner: 1
Cloud Point C: 5% Saline 80

TRYLOX 5921 POE (16) Hydrogenated Castor Oil:
HLB: 8.6
Form @ 25C: Liquid Pour Pt. 7
Viscosity cSt 100F: 569
Density Pounds/Gallon: 8.4
Color Gardner: 1
Cloud Point C: <25
Flash Point F: 565

TRYLOX 5922 POE (25) Hydrogenated Castor Oil:
HLB: 10.8
Form @ 25C: Liquid Pour Pt. 5
Viscosity cSt 100F: 535
Density Pounds/Gallon: 8.6
Color Gardner: 1
Cloud Point C: 25
Flash Point F: 560

HENKEL CORP.: TRYMEEN Ethoxylated Fatty Amines:

The TRYMEEN Ethoxylated Fatty Amines are mildly cationic surfactants. They are used as wetting and penetrating agents, and are substantive to a wide variety of substrates, e.g., metals, glass, textiles, plastics and clays.

TRYMEEN 6606 POE (15) Tallow Amine:
HLB: 14.3
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 96
Density Pounds/Gallon: 8.5
Color Gardner: 8
Cloud Point C: 5% Saline 95
Flash Point F: 445

TRYMEEN 6607 POE (20) Tallow Amine:
HLB: 15.4
Form @ 25C: Liquid Pour Pt. -2
Viscosity cSt 100F: 119
Density Pounds/Gallon: 8.7
Color Gardner: 6
Cloud Point C: 10% Saline 87
Flash Point F: 550

TRYMEEN 6609 POE (25) Tallow Amine:
HLB: 16.0
Form @ 25C: Liquid Pour Pt. 16
Viscosity cSt 100F: 128
Density Pounds/Gallon: 8.8
Color Gardner: 6
Cloud Point C: 10% Saline 87
Flash Point F: 540

TRYMEEN 6637 POE (40) Tallow Amine - 80% active:
HLB: 17.4
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 150
Density Pounds/Gallon: 9.1
Color Gardner: 4
Cloud Point C: 10% Saline 85

TRYMEEN 6617 POE (50) Stearyl Amine:
HLB: 17.8
Form @ 25C: Solid M.P. 35
Color Gardner: 4
Cloud Point C: 10% Saline 82
Flash Point F: 540

TRYMEEN 6601 POE (10) Coco Amine:
HLB: 13.6
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 68
Density Pounds/Gallon: 8.4
Color Gardner: 8

TRYMEEN 6640 POE (15) Tallow Propylene Diamine:
HLB: 13.1
Form @ 25C: Liquid Pour Pt. <-10
Viscosity cSt 100F: 120
Density Pounds/Gallon: 8.4

HENKEL CORP.: Miscellaneous Surfactants:

TRYCOL 6720 Nonionic Ether:
Is a very low foaming nonionic used in processing systems to control foam and provide penetration. It is also used in metal processing rinses.
Form @ 25C: Liquid Pour Pt. -18
Viscosity cSt 100F: 39
Density Pounds/Gallon: 8.2
Color Gardner: 1
Cloud Point C: 24
Flash Point F: 360

TRYLON 6702 Anionic:
Is used as a solvent emulsifier in degreasing cleaners for metal parts and engine blocks. In this application, it exhibits good detergency and excellent rinsability. It is also used as an emulsifier for solvent scouring. This hydrophilic, anionic, general-purpose emulsifier is effective for a wide range of aliphatic and aromatic solvents including stoddard solvent, kerosene, xylene, and chlorinated solvents.
Form @ 25C: Liquid Pour Pt. -10
Viscosity cSt 100F: 1250
Density Pounds/Gallon: 8.5
Color Gardner: 7
Flash Point F: 530

EMERY 6744 Cocoamidopropyl Betaine:
Is an amphoteric surfactant prepared from coconut oil with excellent electrolytic tolerance and is stable over a wide pH range. It exhibits very good foaming properties, a low haze point, and complexes with certain anionic surfactants to form clear, stiff gels.
Form @ 25C: Liquid Pour Pt. <-2
Viscosity cSt 100F: 7
Density Pounds/Gallon: 8.8
Color Gardner: <2

TRYLON 6735 Nonionic Wetting Agent:
Is a low-foaming emulsifier. It finds applications in industrial, institutional and consumer detergents.
Form @ 25C: Liquid Pour Pt. 9
Viscosity cSt 100F: 41
Density Pounds/Gallon: 8.2
Color Gardner: 3
Cloud Point C: 37
Flash Point F: 370

HENKEL CORP.: Miscellaneous Surfactants (Continued):

EMERSTAT 6660 Cationic Antistat:
Is a 100% active liquid compound which offers superlative handling characteristics and high performance antistatic capacity. Aqueous dilutions of EMERSTAT 6660 are formed rapidly with only a few minutes agitation at room temperature. Its antistat performance exceeds that of other commonly used commercial antistats.
Form @ 25C: Liquid Pour Pt. <0
Viscosity cSt 100F: 900
Density Pounds/Gallon: 8.8
Color Gardner: 6
Flash Point F: 325

EMERY 6701 Trimethylolpropane Tripelargonate:
Is a lubricant with good heat stability.
Form @ 25C: Liquid Pour Pt. <-7
Viscosity cSt 100F: 23
Density Pounds/Gallon: 8.9
Color Gardner: 2
Flash Point F: 455

EMERY 6885 Emulsifier:
Is a liquid, fatty based product developed specially for the emulsification of a wide variety of triglycerides, including fats and oils.
HLB: 7.8
Form @ 25C: Liquid Pour Pt. -14
Viscosity cSt 100F: 149
Density Pounds/Gallon: 8.3
Color Gardner: 3
Flash Point F: 490

INOLEX CHEMICAL CO.: LEXAINE Surfactants:

The alkylamidopropyl betaines exhibit many useful properties in personal care formulation. Some are listed below:

* Active over the entire usable pH range (pH 2 through pH 12).
* Outstanding compatibility with acids, alkalis, hard water, soap lathers, electrolytes, and surfactants (anionic, cationic, nonionic, and amphoteric).
* Good viscosity building and gelling properties. The betaines complex with anionic surfactants to form soluble addition products which will form clear gels in large molar excess.
* Excellent foam boosting properties in pH 2 through pH 12 and a noted synergism with anionic surfactants.
* Good conditioning properties. The betaines are substantive to skin and hair and provide residual antistatic properties.
* Enhances protein substantivity to both skin and hair.
* Good detergency.
* Excellent wetting and surface tension reduction.
* Excellent lime soap dispersing properties.
* Low cloud point and will also reduce the cloud point of other surfactant systems allowing for the formulation of clear products.
* Very mild to both skin and eyes.
* Completely biodegradable.

LEXAINE C:
Cocamidopropyl betaine
Alkyl Group: Coconut fatty acid

LEXAINE CS:
Cocamidopropyl betaine
Alkyl Group: Coconut fatty acid

LEXAINE CG-30:
Cocamidopropyl betaine
Alkyl Group: Coconut oil

LEXAINE LM:
Lauramidopropyl betaine
Alkyl Group: Lauric acid

LEXAINE IS:
Isostearamidopropyl betaine
Alkyl Group: Isostearic acid

LEXAINE O:
Oleamidopropyl betaine
Alkyl Group: oleic acid

LEXAINE CSB-50:
Cocamidopropyl hydroxysultaine
Alkyl Group: Coconut fatty acid

INOLEX CHEMICAL CO.: LEXQUATS Cationics:

LEXQUAT AMG-M*:
LEXQUAT AMG-O*
LEXQUAT AMG-WC*:
LEXQUAT AMG-IS*:
LEXQUAT AMG-BEO*

INOLEX introduces a series of new multi-functional cationics, for both hair and skin care applications, whose members possess the following characteristics:

* Surfactant compatibility
* Conditioning without build-up
* Broad pH stability
* High salt tolerance
* Emulsifies
* Doesn't defoam
* Emolliency
* Formulates clear products
* Mild
* Water soluble
* Clear dilutable gels

* Patent Pending

LEXQUAT AMG-M, LEXQUAT AMG-O, LEXQUAT AMG-WC, are a series of alkylamidopropyl dimethyl 2,3-dihydroxypropyl ammonium chloride compounds that deliver perceptible functionality in a broad range of cosmetic preparations. They are highly substantive cationics that offer excellent conditioning properties without build-up and are compatible with all ionic classes of surfactants.

These LEXQUATS, when used in skin care preparations, act as efficient conditioning emollients that leave the skin smooth and supple. They also act as medium-through high-HLB emulsifiers.

One of the unique properties of these LEXQUATS is their ability to produce unique, clear dilutable gels. These LEXQUATS show high salt tolerance and are stable over a broad pH range.

LEXQUAT AMG-IS:
LEXQUAT AMG-BEO:

LEXQUAT AMG-IS, isostearamidopropyl dihydroxypropyl dimonium chloride, is designed primarily for skin care applications.

LEXQUAT AMG-BEO, behenamidopropyl dimonium chloride, is designed especially for dry, damaged hair, such as hair that has been permed or relaxed.

LONZA INC.: Alkanolamides: CARSAMIDE-1:1 Super Amides/UNAMIDE-Ethoxylated, 2:1 Amides and Super Amides:

Lonza alkanolamides function primarily as foam boosters, stabilizers and viscosity builders in a wide variety of applications within the Personal Care and Household/Industrial business areas. They may also function as surfactants, emulsifiers, opacifiers, gelling agents, corrosion inhibitors, lubricants and conditioning agents. CARSAMIDE super amides are most often recommended for Personal Care applications, while UNAMIDE products find their greatest use in Household/Industrial products.

1:1 Super Amides:

CARSAMIDE AMEA:
N-Acetyl Ethanolamide
CTFA Designation: Acetamide MEA
Liquid
% Activity: 70
Comments: Hair conditioner and antistat.

CARSAMIDE CA:
1:1 Coco Diethanolamide
CTFA Designation: Cocamide DEA
Liquid
% Activity: 100
Comments: Coco oil based foam booster.

CARSAMIDE CMEA:
1:1 Coco Monoethanolamide
CTFA Designation: Cocamide MEA
Flakes
% Activity: 100
Comments: Very efficient thickening agent.

CARSAMIDE SAC:
1:1 Coco Diethanolamide
CTFA Designation: Cocamide DEA
Liquid
% Activity: 100
Comments: Excellent viscosity modifier.

CARSAMIDE SAL-7:
1:1 Lauric/Myristic Diethanolamide
CTFA Designation: Lauramide DEA
Solid
% Activity: 100
Comments: Excellent viscosity modifier.

LONZA INC.: Alkanolamides: CARSAMIDE-1:1 Super Amides/UNAMIDE-Ethoxylated, 2:1 Amides and Super Amides (Continued):

1:1 Super Amides (Continued):

CARSAMIDE SAL-9:
1:1 Lauric Diethanolamide
CTFA Designation: Lauramide DEA
Solid
% Activity: 100
Comments: Excellent viscosity modifier

2:1 Amides, Ethoxylated Amides, Super Amides:

UNAMIDE C-72-3:
2:1 Coco Diethanolamide
Liquid
% Activity: 100
Comments: Industrial/Household applications.

UNAMIDE C-5:
Ethoxylated Coco Monoethanolamide
CTFA Designation: PEG 6 Cocamide
Liquid
% Activity: 100
Comments: pH stable - useful in all areas.

UNAMIDE D-10:
Modified Coco Diethanolamide
CTFA Designation: Cocamide DEA
Liquid
% Activity: 100
Comments: Industrial/Household applications.

UNAMIDE LDL:
1:1 Coco Diethanolamide
CTFA Designation: Cocamide DEA
Liquid
% Activity: 100
Comments: Superamide for industrial uses.

LONZA INC.: Amine Based Surfactants:

AMPHOTERGE:

J-2:
CTFA Designation: Disodium Capryloamphodiacetate
% Solids: 49
% NaCl: 10
Viscosity (cps) As Is @ 25C: 236
Pour Point C: <-10
pH As Is: 8.5
Foam Properties (mm):
Initial Height: 25
Height After 5 Minutes: Collapsed
Surface Tension (Dynes/cm) 0.1% Active: 26.4

K:
CTFA Designation: Sodium Cocoamphopropionate
% Solids: 37
% NaCl: 0.02
Viscosity (cps) As Is @ 25C: 186
Pour Point C: 2
pH As Is: 9.8
Foam Properties (mm):
Initial Height: 139
Height After 5 Minutes: 133
Surface Tension (Dynes/cm) 0.1% Active: 31.9

K-2:
CTFA Designation: Disodium Cocoamphodipropionate
% Solids: 40
% NaCl: 0.02
Viscosity (cps) As Is @ 25C: 76
Pour Point C: 0
pH As Is: 9.6
Foam Properties (mm):
Initial Height: 133
Height After 5 Minutes: 129
Surface Tension (Dynes/cm) 0.1% Active: 38.6

KJ-2:
CTFA Designation: Disodium Capryloamphodipropionate
% Solids: 40
% NaCl: 0.05
Viscosity (cps) As Is @ 25C: 50
Pour Point C: -2
pH As Is: 9.6
Foam Properties (mm):
Initial Height: 70
Height After 5 Minutes: Collapsed
Surface Tension (Dynes/cm) 0.1% Active: 27.5

LONZA INC.: Amine Based Surfactants (Continued):

AMPHOTERGE:

SB:
CTFA Designation: Sodium Cocoamphohydroxypropylsulfonate
% Solids: 45
% NaCl: 8
Viscosity (cps) As Is 25C: 26
Pour Point C: -5
pH As Is: 7.5 (1%)
Foam Properties (mm):
Initial Height: 145
Height After 5 Minutes: 145
Surface Tension (Dynes/cm) 0.1% Active: 33.2

W:
CTFA Designation: Sodium Cocoamphoacetate
% Solids: 46
% NaCl: 8
Viscosity (cps) As Is @ 25C: 564
Pour Point C: 8
pH As Is: 9.8
Foam Properties (mm):
Initial Height: 150
Height After 5 Minutes: 148
Surface Tension (Dynes/cm) 0.1% Active: 28.5

W-2:
CTFA Designation: Disodium Cocoamphodiacetate
% Solids: 50
% NaCl: 11
Viscosity (cps) As Is @ 25C: 96,000
Pour Point C: <-10
pH As Is: 8.2 (20%)
Foam Properties (mm):
Initial Height: 157
Height After 5 Minutes: 156
Surface Tension (Dynes/cm) 0.1% Active: 28.5

LONZAINE:

C:
CTFA Designation: Cocamidopropyl Betaine
% Solids: 35
% NaCl: 5
Viscosity (cps) As Is @ 25C: 29
Pour Point C: 3
pH As Is: 5.0 (10%)
Foam Properties (mm):
Initial Height: 166
Height After 5 Minutes: 160
Surface Tension (Dynes/cm) 0.1% Active: 33.6

LONZA INC.: Amine Based Surfactants (Continued):

LONZAINE (Continued):

CO:
CTFA Designation: Cocamidopropyl Betaine
% Solids: 35
% NaCl: 5
Viscosity (cps) As Is @ 25C: 28
Pour Point C: 3
pH As Is: 7.0 (10%)
Foam Properties (mm):
Iniital Height: 171
Height After 5 Minutes: 163
Surface Tension (Dynes/cm) 0.1% Active: 33.9

CS:
CTFA Designation: Cocamidopropyl Hydroxysultaine
% Solids: 50
% NaCl: 6
Viscosity (cps) As Is @ 25C: 189
Pour Point C: 9
pH As Is: 8.0 (10%)
Foam Properties (mm):
Initial Height: 180
Height After 5 Minutes: 180
Surface Tension (Dynes/cm) 0.1% Active: 35.2

12C:
CTFA Designation: Coco Betaine
% Solids: 35
% NaCl: 2
Viscosity (cps) As Is @ 25C: 14
Pour Point C: 3
pH As Is: 7.5 (3%)
Foam Properties (mm):
Initial Height: 147
Height After 5 Minutes: 138
Surface Tension (Dynes/cm) 0.1% Active: 34.4

16SP:
CTFA Designation: Cetyl Betaine
% Solids: 35
% NaCl: 7
Viscosity (cps) As Is @ 25C: 720
Pour Point C: Solid
pH As Is: 7.5
Foam Properties (mm):
Initial Height: 148
Height After 5 Minutes: 142
Surface Tension (Dynes/cm) 0.1% Active: 32

LONZA INC.: Amine Based Surfactants (Continued):

BARLOX:

C:
CTFA Designation: Cocamidopropylamine Oxide
% Solids: 30
Viscosity (cps) As is @ 25C: 36
Pour Point C: 4
pH As Is: 7.0 (1%)
Foam Properties (mm):
Initial Height: 167
Height After 5 Minutes: 162
Surface Tension (Dynes/cm) 0.1% Active: 35.4

12:
CTFA Designation: Cocamine Oxide
% Solids: 30
Viscosity (cps) As Is @ 25C: 45
Pour Point C: 4
pH As Is: 7.0 (1%)
Foam Properties (mm):
Initial Height: 178
Height After 5 Minutes: 163
Surface Tension (Dynes/cm) 0.1% Active: 32.3

14:
CTFA Designation: Myristamine Oxide
% Solids: 30
Viscosity (cps) As Is @ 25C: 60
Pour Point C: 2
pH As Is: 7.0 (1%)
Foam Properties (mm):
Initial Height: 169
Height After 5 Minutes: 166
Surface Tension (Dynes/cm) 0.1% Active: 31.0

16:
CTFA Designation: Cetamine Oxide
% Solids: 30
Viscosity (cps) As Is @ 25C: 27,000
Pour Point C: Solid
pH As Is: 7.0 (1%)
Foam Properties (mm):
Initial Height: 136
Height After 5 Minutes: 134
Surface Tension (Dynes/cm) 0.1% Active: 32.4

LONZA INC.: Amine Oxides: BARLOX:

Lonza offers a variety of biodegradable cosmetic grade amine oxides including alkyl dimethyl amine oxides and alkyl amido amine oxides. These compounds are manufactured under the BARLOX trade name from Lonza's own production of BARLENE Tertiary Amines and Alkyl Amido Amines. The BARLOX Amine Oxides find application for their foam stability and viscosity building in Personal Care and Industrial products. They possess broad acid/alkaline stability and are also used as specialty emulsifiers and conditioning agents.

Amine Oxides:

BARLOX C:
Coco Amido Propyl Dimethyl Amine Oxide
CTFA Designation: Cocamidopropyl Amine Oxide
Liquid
% Active: 30

BARLOX 12:
Lauryl Dimethyl Amine Oxide
CTFA Designation: Cocamine Oxide
Liquid
% Active: 30

BARLOX 16S:
Cetyl Dimethyl Amine Oxide
CTFA Designation: Cetamine Oxide
Paste
% Active: 30

BARLOX 18S:
Stearyl Dimethyl Amine Oxide
CTFA Designation: Stearamine Oxide
Paste
% Active: 25

LONZA INC.: Anionic Surfactants: CARSONOL:

CARSONOL surfactants, consisting of both sulfated straight chain alcohols and fatty alcohol ether sulfates are available primarily in the lauryl chain length and as sodium, ammonium or triethanolamine salts. All members of this series are biodegradable. The CARSONOLS all provide high foaming even in the presence of hard water and exhibit good wetting and emulsifying properties. They are used in shampoos, bubble baths, shaving creams, cleansing creams, industrial cleaners, foam/dust control, liquid household detergents, automobile shampoos, emulsion polymerization and many other areas. While all CARSONOL surfactants are stable above pH 4, use of the ammonium salts is not recommended above pH 7 as ammonia will be liberated. All products are liquids.

Alcohol Sulfates:

CARSONOL ALS-R:
Ammonium Lauryl Sulfate
CTFA Designation: Ammonium Lauryl Sulfate
% Active: 29
Comments: Broad application.

CARSONOL ALS-S:
Ammonium Lauryl Sulfate
CTFA Designation: Ammonium Lauryl Sulfate
% Active: 29
Comments: Low salt grade.

CARSONOL DLS:
Diethanolamine Lauryl Sulfate
CTFA Designation: DEA Lauryl Sulfate
% Active: 29
Comments: Mild product for Personal Care use.

CARSONOL MLS:
Magnesium Lauryl Sulfate
CTFA Designation: Magnesium Lauryl Sulfate
% Active: 30
Comments: Well suited for rug shampoos.

CARSONOL SHS:
Sodium 2-ethyl Hexyl Sulfate
CTFA Designation: Sodium Octyl Sulfate
% Active: 40
Comments: FDA approved for fruit and vegetable washing and peeling.

LONZA INC.: Anionic Surfactants: CARSONOL (Continued):

Alcohol Sulfates (Continued):

CARSONOL SLS-R:
Sodium Lauryl Sulfate
CTFA Designation: Sodium Lauryl Sulfate
% Active: 29
Comments: Broad application.

CARSONOL SLS-S:
Sodium Lauryl Sulfate
CTFA Designation: Sodium Lauryl Sulfate
% Active: 29
Comments: Low free-alcohol grade.

CARSONOL SLS Paste B:
Sodium Lauryl Sulfate
CTFA Designation: Sodium Lauryl Sulfate
% Active: 29
Comments: Well suited for Household/Industrial use.

CARSONOL TLS:
Triethanolamine Lauryl Sulfate
CTFA Designation: TEA Lauryl Sulfate
% Active: 40
Comments: Mildest member of the alcohol sulfates.

Alcohol Ether Sulfates:

CARSONOL SES-A:
Ammonium Lauryl Ether Sulfate
CTFA Designation: Ammonium Laureth Sulfate
% Active: 59
Comments: High actives primarily for Household/Industrial use.

CARSONOL SES-S:
Sodium Lauryl Ether Sulfate
CTFA Designation: Sodium Laureth Sulfate
% Active: 59
Comments: High actives primarily for Household/Industrial use.

CARSONOL SLES-3:
Sodium Lauryl Ether Sulfate
CTFA Designation: Sodium Laureth Sulfate
% Active: 29
Comments: Mild product for Personal Care.

CARSONOL SLES-2:
Sodium Lauryl Ether Sulfate
CTFA Designation: Sodium Laureth Sulfate
% Active: 27
Comments: Mild product for Personal Care.

LONZA INC.: CARSONON Ethoxylated Nonyl Phenols and Propoxylated Alcohols/ETHOSPERSE Ethoxylated Alcohols:

Lonza offers a diverse range of Ethoxylated derivatives. The CARSONON and ETHOSPERSE series are Nonionic Surfactants covering the range of HLB Values for applications as emulsifiers, dispersants, wetting agents and solubilizers.

Lonza specializes in custom Ethoxylation products for specific customer requirements.

Ethoxylated Nonyl Phenols:

CARSONON N-4:
CTFA Designation: Nonoxynol 4
Liquid
Color: 100 APHA
Hydroxyl Value: 140
Cloud Point F: Insoluble
HLB: 9
% Activity: 100

CARSONON N-6:
CTFA Designation: Nonoxynol 6
Liquid
Color: 100 APHA
Hydroxyl Value: 128
Cloud Point F: Insoluble
HLB: 11
% Activity: 100

CARSONON N-9:
CTFA Designation: Nonoxynol 9
Liquid
Color: 75 APHA
Hydroxyl Value: 98
Cloud Point F: 130
HLB: 13
% Activity: 100

CARSONON N-12:
CTFA Designation: Nonoxynol 12
Liquid
Color: 75 APHA
Hydroxyl Value: 75
Cloud Point F: 190
HLB: 14
% Activity: 100

LONZA INC.: CARSONON Ethoxylated Nonyl Phenols and Propoxylated Alcohols/ETHOSPERSE Ethoxylated Alcohols (Continued):

Ethoxylated Nonyl Phenols (Continued):

CARSONON N-30:
CTFA Designation: Nonoxynol 30
Liquid
Color: 150 APHA
Hydroxyl Value: 36
Cloud Point F: 165 (in 10% Salt)
HLB: 17
% Activity: 70

CARSONON N-50:
CTFA Designation: Nonoxynol 50
Liquid
Color: 3 Gardner (1963)
Cloud Point F: 170 (in 10% Salt)
HLB: 18
% Activity: 70
The CARSONON series are primary surfactants, emulsifiers for Household and Industrial cleaners, detergents and other emulsion systems.

Propoxylated Alcohols:

CARSONON 144-P:
CTFA Designation: PPG-3 Myristyl Ether
Liquid
Color: 35 APHA
Hydroxyl Value: 130
% Activity: 100

CARSONON 169-P:
CTFA Designation: PPG-10 Cetyl Ether
Liquid
Color: 100 APHA
Hydroxyl Value: 75
% Activity: 100
Lubricants, emollients, solubilizers for cosmetic systems, including silicon systems. Aids low temperature stability, anti-static and conditioning effects. Contributes to mildness and spreading behavior.

LONZA INC.: CARSONON Ethoxylated Nonyl Phenols and Propoxylated Alcohols/ETHOSPERSE Ethoxylated Alcohols (Continued):

Ethoxylated Alcohols:

ETHOSPERSE CA-2:
CTFA Designation: Ceteth-2
Solid
Color: I Gardner (1963)
Hydroxyl Value: 170
Cloud Point F: Insoluble
HLB: 6
% Activity: 100
Comments: Hair care, lotions and creams to add body and texture.

ETHOSPERSE CA-20:
CTFA Designation: Ceteth-20
Soft Solid
Color: I Gardner (1963)
Hydroxyl Value: 55
HLB: 16
% Activity: 100
Comments: Hair care, lotions and creams to add body and texture.

ETHOSPERSE G-26:
CTFA Designation: Glycereth-26
Clear Liquid
Color: I Gardner (1963)
Hydroxyl Value: 137
HLB: 18
% Activiity: 100
Comments: Humectant and viscosity modifier.

LONZA INC.: Hydantoin Ethoxylates and Esters: DANTOCOL, DANTOEST, DANTOSPERSE, Ethoxylates and Esters:

Hydantoin Ethoxylates are specialty cross linkers for coatings and polymers which offer improved weatherability and thermal properties. The Esters and Ester/Ethoxylates are multi-technology products offering a broad range of lubrication, emulsification and surfactant properties for textile and other markets.

Hydantoin Ethoxylates:

DANTOCOL DHE:
Di-(2-Hydroxyethyl)-5,5 Dimethyl Hydantoin
Liquid
Comments: Resin cross linker in coatings and polymers.

Hydantoin Esters:

DANTOEST DHE-DL:
Di-(2-Hydroxyethyl)-5,5 DMH Dilaurate
Liquid
Comments: Fiber lubricant.

DANTOSPERSE DHE (15) MO:
POE(15)Di-(2-Hydroxyethyl)-5,5 DMH Monooleate
Liquid
Comments: Fiber lubricant.

DANTOSPERSE DHE(15)DS:
POE(15)Di-(2-Hydroxyethyl)-5,5 DMH Distearate
Solid
Comments: Fiber lubricant.

LONZA INC.: Sorbitan Esters: GLYCOMUL Sorbitan Esters and GLYCOSPERSE Polyoxyethylene Sorbitan Esters:

Lonza's GLYCOMUL series of sorbitan esters are versatile emulsifiers used in a variety of end products in the Food, Cosmetic, Household Products and Industrial markets. Many Sorbitan Esters are available in Food, Kosher and NF Grades.

While the GLYCOMUL series are primarily water/oil emulsifiers, the GLYCOSPERSE Esters are oil/water surfactants. The GLYCOSPERSE series of emulsifiers offers a wide range of HLB values for maximum flexibility in selecting the best emulsifier or combination of emulsifiers for formulation needs.

In many applications, combining GLYCOMUL esters with GLYCOSPERSE ethoxylates produces tailored emulsifying systems with superior properties.

Sorbitan Esters:

GLYCOMUL L:
Sorbitan Monolaurate
Liquid
Gardner Color (1963): 7
Acid Value: 5
HLB: 9

GLYCOMUL O:
Sorbitan Monooleate
Liquid
Gardner Color (1963): 6
Acid Value: 7
HLB: 4

GLYCOMUL S FG:
Sorbitan Monostearate
Beads
Gardner Color (1963): 5
Acid Value: 5
Melting Point C: 53
HLB: 5

GLYCOMUL S KFG:
Sorbitan Monostearate
Beads
Gardner Color (1963): 5
Acid Value: 5
Melting Point C: 53
HLB: 5

GLYCOMUL SOC:
Sorbitan Sesquioleate
Liquid
Gardner Color (1963): 7
Acid Value: 10
HLB: 4

LONZA INC.: Sorbitan Esters: GLYCOMUL Sorbitan Esters and GLYCOSPERSE Polyoxyethylene Sorbitan Esters (Continued):

Sorbitan Esters (Continued):

GLYCOMUL TO:
Sorbitan Trioleate
Liquid
Gardner Color (1963): 9
Acid Value: 12
HLB: 2

GLYCOMUL TS KFG:
Sorbitan Tristearate
Beads
Gardner Color (1963): 2
Acid Value: 14
Melting Point C: 55
HLB: 2

Polyoxyethylene Sorbitan Esters:

GLYCOSPERSE HTO-40:
POE 40 Sorbitan Hexatallate
Liquid
Gardner Color (1963): 7
Acid Value: 10
HLB: 10

GLYCOSPERSE L-10:
POE 10 Sorbitan Monolaurate
Liquid
Gardner Color (1963): 5
Acid Value: 2
HLB: 8

GLYCOSPERSE L-20:
POE 20 Sorbitan Monolaurate
Liquid
Gardner Color (1963): 4
Acid Value: 2
HLB: 17

GLYCOSPERSE O-5:
POE 5 Sorbitan Monooleate
Liquid
Gardner Color (1963): 6
Acid Value: 2
HLB: 10

LONZA INC.: Sorbitan Esters: GLYCOMUL Sorbitan Esters and GLYCOSPERSE Polyoxyethylene Sorbitan Esters (Continued):

Polyoxyethylene Sorbitan Esters (Continued):

GLYCOSPERSE O-20 FG:
POE 20 Sorbitan Monooleate
Liquid
Gardner Color (1963): 5
Acid Value: 2
HLB: 15

GLYCOSPERSE O-20 KFG:
POE 20 Sorbitan Monooleate
Liquid
Gardner Color (1963): 5
Acid Value: 2
HLB: 15

GLYCOSPERSE S-20 FG:
POE 20 Sorbitan Monostearate
Soft Solid
Gardner Color (1963): 7
Acid Value: 2
Melting Point C: 28
HLB: 15

GLYCOSPERSE S-20 KFG:
POE 20 Sorbitan Monostearate
Soft Solid
Gardner Color (1963): 7
Acid Value: 2
Melting Point C: 28
HLB: 15

GLYCOSPERSE TS-20 FG:
POE 20 Sorbitan Tristearate
Soft Solid
Gardner Color (1963): 6
Acid Value: 2
Melting Point C: 31
HLB: 11

GLYCOSPERSE TS-20 KFG:
POE 20 Sorbitan Tristearate
Soft Solid
Gardner Color (1963): 6
Acid Value: 2
Melting Point C: 31
HLB: 11

LONZA INC.: Sulfonates and Phosphate Ester: CARSONOL, CARSOFOAM and ALKAWET:

Sulfonates:

CARSONOL AOS:
Sodium C14-C16 Olefin Sulfonate
CTFA Designation: Sodium C14-C16 Olefin Sulfonate
% Active: 40
pH: 8.0 (5% Solution)
Comments: Shampoos, liquid soaps and industrial cleansers.

CARSOFOAM T-60-L:
Triethanolamine Dodecyl Benzene Sulfonate
CTFA Designation: TEA Dodecyl Benzene Sulfonate
% Active: 60
pH: 7.3 (as is)
Comments: Mild detergents and industrial cleaners.

Phosphate Ester:

ALKAWET N:
Mixed Phosphate Ester
% Active: 100
pH: 9.2 (0.1% Solution)
Comments: Anionic/Nonionic blend for industrial cleaners.

Surfactant Blends: CARSOFOAM:
Surfactant blends are currently available as concentrates and bases for shampoos.

CARSOFOAM BS-1:
CTFA Designation: Water, PEG-80 Sorbitan Laurate, Sodium Trideceth Sulfate, PEG-150 Distearate, Disodium Lauroamphodiacetate, Cocoamidopropylhydroxysultaine (and) sodium laureth - 13 carboxylate
% Solids: 40
Suggested Use Level (%): 50
Comments: High quality baby shampoo concentrate.

CARSOFOAM MSP:
CTFA Designation: TEA Lauryl Sulfate (and) Cocamide DEA (and) Cocamidopropyl Betaine (and) Methyl Paraben
% Solids: 50
Suggested Use Level (%): 20
Comments: Mild shampoo concentrate.

MCINTYRE GROUP LTD.: MACKADET Surfactants:

MACKADET RS:

Rug Shampoo Concentrate

MACKADET RS is an optimum blend of sulfosuccinate and lauryl sulfate for use as an economical, in place, carpet and upholstery shampoo. The use of the sulfosuccinate reduces the wetting action upon the carpeting, thereby reducing the drying time.

Viscous Liquid
Concentration, %: 35.0+-1.5
Color (Gardner): 3.0 Maximum
Odor: Slightly Alcoholic
pH (as is): 7.0+-1.0

When used as a rug shampoo, MACKADET RS forms a very hard friable powder upon drying for easy vacuuming and removal. It enhances the foam and foam stability while reducing resoiling problems. It is free of soaps and, therefore, essentially odor free. Above all it is very efficient as well as economical.

MACKADET 40K:

Potassium Coconut Soap

MACKADET 40K is a pure potassium coconut soap that exhibits excellent flash foam, good color and low odor. It does not contain any other vegetable soaps to increase its viscosity at the expense of quality.

Clear Yellow Liquid
Concentration, %: 38.0+-2.0
Color (Gardner): 4 Maximum
Odor: Typical
pH (as is): 9.0-11.0
Viscosity: Water Thin
Pounds/Gallon (20C.): 8.65

MCINTYRE GROUP LTD.: MACKAM Surfactants:

MACKAM CBS-50G:
CAS No. 68139-30-0
Cocamidopropyl Hydroxysultaine
MACKAM CBS-50G is a high performance zwitterionic surfactant that is stable over a wide pH range. It is compatible with anionic, nonionic, amphoteric and cationic surfactants. MACKAM CBS-50G exhibits high foaming even in high electrolyte solutions and is stable in 19% sodium hydroxide. When compared to cocamidopropyl betaine, MACKAM CBS-50G exhibits better flash foam and viscosity building characteristics with lauryl sulfates and alpha olefin sulfonates. MACKAM CBS-50G is produced from the highest grade of coconut oil available and is fully biodegradable. Superior mild shampoos, high foaming bath products and liquid soaps may all be formulated with this product.
Clear, Thin, Yellow Liquid
Concentration, %: 50
Color (Gardner): 5 Maximum
Odor: Bland
pH, 10% Solution: 8
Sodium Chloride, %: 6.5
Density (lbs./gal.): 8.7
Viscosity @ 25C: 200 cps

MACKAM CS:
Sodium Cocoamphohydroxypropylsulfonate
MACKAM CS is a biodegradable, mild foam cleansing agent that possesses excellent solubility and solubilizing properties. It has a high tolerance for inorganic salts and is stable over a wide pH range. MACKAM CS is used in cold water wool and fine fabric detergents as well as in other household items such as metal polish. Additionally, MACKAM CS has excellent corrosion inhibition properties, making it useful in steel pickling baths and other acid systems.
Thin amber liquid
Non-volastiles: 45%
pH (10% AQ): 8.0
Sodium Chloride: 7.0%

MACKAM JS:
Sodium Capryloamphohydroxypropylsulfonate
MACKAM JS is a biodegradable low-foam wetting agent and coupler useful in both high alkali and acid systems. It has a high tolerance for inorganic salts and is soluble in up to 35% caustic soda. Additionally, MACKAM JS has excellent corrosion inhibition properties, making it useful in steel pickling baths and other acid systems.
Thin Amber Liquid
Non-Volatiles: 49%
pH, (As Is): 8.0
Sodium Chloride: 8.7%

MCINTYRE GROUP LTD.: MACKAM Surfactants (Continued):

MACKAM MEJ:
Mixed C-8 Amphocarboxylates
MACKAM MEJ is an amphoteric wetting agent produced from a mixed C-8 imidazoline. MACKAM MEJ is stable in high alkaline systems, compatible with phosphate builders and provides low foam.
Clear Amber Liquid
Solids, %: 33.0-35.0
Chloride as NaCl, %: 5.2-5.8
pH: 10.0-10.5
Odor: Mild
Color, Gardner: 4

MACKAM 2CSF:
Disodium Cocoamphodipropionate
MACKAM 2CSF is suggested for systems where sodium chloride would be detrimental to the performance of the final product or would cause corrosion problems. MACKAM 2CSF is stable over a broad pH range and is the surfactant of choice in high electrolyte systems.
Clear, thin amber liquid
Nonvolatiles: 38.0-40.0
Odor: Characteristic
pH, as is: 9.0-10.0
Color, Gardner: 7 maximum

MACKAM 2CYSF:
Disodium Capryloamphodipropionate
MACKAM 2CYSF is a low foaming surfactant suggested for systems where sodium chloride would be detrimental to performance or cause corrosion problems. MACKAM 2CYSF is stable over a broad pH range and is compatible in high electrolyte systems.
Clear Amber Liquid
Concentration, %: 48-52
Odor: Characteristic
pH (as is): 9.4-10.0

MACKAM OK:
Cocamidopropyl Betaine
MACKAM OK is a specially prepared grade of cocamidopropyl betaine that is designed to provide good foaming action in acidic brines, and is significantly more soluble than standard grades. It is thus, an excellent choice when formulating acid fracturing aids.
Yellow Liquid
Color (Gardner): 6 Maximum
Odor: Bland
Solids %: 34.0-36.0
pH: 5.0-7.0
Sodium Chloride %: 4.5-5.5

MCINTYRE GROUP LTD.: MACKAM Surfactants (Continued):

MACKAM TM:
Dihydroxyethyl Tallow Glycinate
MACKAM TM is a a high molecular weight betaine which exhibits both cationic and anionic properties. It is compatible with anionic surfactants, and at low levels (1-2%) MACKAM TM provides conditioning properties plus excellent viscosity building.
Flowable Gel
Odor: Typical
Solids: 39.0-43.0
Chloride, %: 4.6-5.4
Active, %: 33.6-38.4
pH (as is): 4.80-5.60

MACKAM 2CSF-70:
Disodium Cocoamphodipropionate and Propylene Glycol
MACKAM 2CSF-70 is a concentrated form of MACKAM 2CSF in propylene glycol. It is suggested for systems where water is undesirable and salt would be detrimental to the performance of the final product or would cause corrosion problems. MACKAM 2CSF-70 is stable over a broad pH range and is the surfactant of choice in high electrolyte systems.
Viscous Amber Liquid
Oven Solids, %: 70 Minimum
Odor: Characteristic
pH (10% AQ): 5.0-7.0
Color (Gardner): 7 Typical

MACKAM 35:
Cocamidopropyl Betaine
MACKAM 35 is a betaine surfactant which when combined with anionic surfactants provides outstanding foam boosting properties. It is also an excellent thickener and conditioning agent for shampoo formulations. MACKAM 35 is stable in both acid and alkaline systems, thus, is an excellent foaming agent for industrial cleaners.
Yellow Liquid
Color (Gardner): 3 Maximum
Odor: Bland
Solids, %: 35.0+-1.0
pH: 6.0+-1.0
Sodium Chloride, %: 5.0+-0.5
Actives, %: 30.0+-1.0

MACKAM 160C:
Sodium Lauriminodipropionate
MACKAM 160C is suggested for systems where sodium chloride would be detrimental to the performance of the final product or would cause corrosion problems. MACKAM 160C is stable over a broad pH range and is used as surfactant in high electrolyte systems.
Clear to Hazy Amber Liquid. May Gel on Standing.
Concentration, %: 37.0-40.0
Color (Gardner): 4 Max
Odor: Characteristic
pH (as is): 7.0-8.5

MCINTYRE GROUP LTD.: MACKAMIDE Amides:

MACKAMIDE C:
Cocamide DEA
MACKAMIDE C is a high active, rapidly biodegradable cocodiethanolamide. MACKAMIDE C is a liquid amide at room temperature and below, which simplifies handling during manufacturing.
Clear Liquid
Concentration, %: 100
Color (Gardner): 4 Maximum
Odor: Typical
pH (1% D.I. Water): 10.0+-1.0
Free Amine: 7.0% Maximum
Pounds per Gallon: 8.3
MACKAMIDE C is an excellent foam stabilizer and viscosity index improver for use in bubble baths, shampoos, shower gels and liquid hand dishwashes. Being nonionic, it can be used with other nonionics, anionics or even cationics. It is an excellent detergent for use as an emulsifier, dispersant and wetting agent.

MACKAMIDE CD:
Cocamide DEA
MACKAMIDE CD is a rapidly biodegradable cocodiethanolamide. It is used in conjunction with anionics such as soaps, sulfonates, sulfates or nonionics. MACKAMIDE CD is water soluble, aids rust inhibition of aqueous systems, as well as providing wetting action. It is an excellent thickening agent for these systems. MACKAMIDE CD when cut back with various fatty acids or organic acids (such as sulfonic) responds to building with electrolytes. As such, very high viscosities will result even at low solids levels along with varying degrees of rust inhibition.
Yellow Liquid
Concentration, %: 100
Color (Gardner): 7 Maximum
Odor: Typical
pH (10% in Distilled Water): 10.0+-0.5
Specific Gravity: 1.01
Pounds per Gallon: 8.4
Free Amine, %: 25.0-27.0

MACKAMIDE CDC:
MACKAMIDE CDC is a modified cocamide which is compatible with inorganic builders and alkalies in aqueous systems. It was developed for industrial cleaning formulations, which require good detergency in high alkaline systems.
Viscous Amber Liquid
Concentration, %: 100
Color (Gardner): 12 Maximum
Odor: Mild, Fatty
pH (1% Solution): 9.0+-0.5
Specific Gravity (@ 25 degree C): 1.00
Amine Value: 85-95
Acid Value: 60-70

MCINTYRE GROUP LTD.: MACKAMIDE Amides (Continued):

MACKAMIDE CDM:

MACKAMIDE CDM is a modified coco amide which exhibits excellent compatibilities with inorganic builders and alkalies in aqueous systems. It was developed for industrial and specialty cleaning formulations, but is widely used as a detergent, wetting agent and emulsifier.

Viscous Amber Liquid
Concentration, %: 100
Color (Gardner): 12 Maximum
Odor: Mild, Fatty
pH (1% Solution): 9.0+-0.5
Specific Gravity (@ 25 degrees C): 1.00
Pounds Per Gallon (@ 25 degrees C): 8.3
Free Amine: 20.0-22.5
Free Fatty Acid (as Oleic), %: 23.0-26.0

MACKAMIDE CDT:

MACKAMIDE CDT is a modified coco amide which exhibits excellent compatibilities with inorganic builders and alkalies in aqueous systems. It was developed for industrial and specialty cleaning formulations, but is widely used as a detergent, wetting agent and emulsifier.

Clear Amber Liquid
Concentration, %: 100
Odor: Mild, Fatty
pH (10% Solution): 9.0
Specific Gravity (@ 25 degree C): 1.00
Pounds Per Gallon (@ 25 degree C): 8.3
Acid Number: 56
Base Number: 120

MACKAMIDE CMA:

Cocamide MEA

MACKAMIDE CMA is a high purity 1:1 coconut monoethanolamide which is designed for use in shampoos, bubble bath, dishwash, and other household and cosmetic preparations.

Off White to Light Yellow Flake
Concentration, %: 100
pH (1.0% AQ): 10.0+-1.0
Acid Value: 2 Maximum
Free Monoethanolamine, %: 3.0 Maximum

MACKAMIDE CMA is an excellent viscosity index improver and foam stabilizer. MACKAMIDE CMA is supplied in flake form. MACKAMIDE CMA, at room temperature, is dispersible in water, chlorinated hydrocarbons, mineral spirits, kerosene. It is soluble in ethanol and glycols.

MCINTYRE GROUP LTD.: MACKAMIDE Amides (Continued):

MACKAMIDE MC:
Cocamide DEA
MACKAMIDE MC being a "superamide" is not soluble in water by itself below 10%. However, the addition of small amounts of anionic surfactants such as lauryl sulfate, lauryl ether sulfate, linear alkane sulfonate and even soap will clarify it. MACKAMIDE MC will respond to viscosity control with the addition of sodium or ammonium chloride.
Amber Liquid
Concentration, %: 100
Color (Gardner): 4 Maximum
Odor: Typical
pH, 1% in Distilled Water: 10.0
Free Amine: 7% Maximum
Pounds per Gallon: 8.3
MACKAMIDE MC is an excellent foam stabilizer and viscosity builder when blended with anionic surfactants. It is especially effective in syndet bars, soap pads or any application where low solubility is desirable. MACKAMIDE MC will provide a slow release of surfactants. It is also very effective in clear liquid systems where sufficient hydrotrope (SXS, AXS, propylene glycol, etc.) are incorporated in the system to solubilize the amide.

MACKAMIDE MO:
Oleamide DEA
CAS Number 93-83-4
MACKAMIDE MO, an oleic diethanolamide, is oil soluble and water dispersible. As such, it may be blended with hydrophobic surfactants to form oil in water or even water in oil emulsions. Adding hydrophilic surfactants will aid in building viscosities. MACKAMIDE MO exhibits rust inhibition characteristics and thus is suitable for use in metalworking and slushing compounds.
Viscous Amber Liquid
Concentration, %: 100
Color (Gardner): 8 Maximum
Odor: Typical
Free Fatty Acid, (as Oleic), %: 0.5 Maximum
Free Amine (as DEA), %: 9.0 Maximum

MACKAMIDE NOA:
Oleamide DEA
CAS Number 93-83-4
MACKAMIDE NOA is an oil soluble amide which provides excellent water in oil emulsions. It is also water dispersible and when blended with anionic surfactants provides excellent viscosity building properties at very low concentrations.
Amber Liquid
Concentration, %: 100
Odor: Typical
Free Amine (as DEA), %: 6.0-11.0
Free Fatty Acid (as Oleic), %: 6.0 Maximum

MCINTYRE GROUP LTD.: MACKAMIDE Amides (Continued):

MACKAMIDE OP:
Oleamide MIPA
MACKAMIDE OP is an oil soluble amide which provides excellent water in oil emulsions. It is also water dispersible and when blended with anionic surfactants provides excellent viscosity building properties at very low concentrations.
Solid Paste
Concentration, %: 100
Color (Gardner): 6 Maximum
Odor: Typical
Alkali Number: 4 Maximum
Acid Number: 6 Maximum
pH @ 1.0%: 9.0+-1.0

MACKAMIDE S:
Soyamide DEA
MACKAMIDE S is an oil soluble soya diethanolmide. As such, it forms water in oil emulsions and is a good corrosion inhibitor. MACKAMIDE S may be used in aqueous systems where small amounts in conjunction with water soluble amides will give increased viscosity response. MACKAMIDE S will also contribute to foam stability and detergency as well as lending conditioning and lubricating properties to skin and hair.
Amber Liquid
Concentration, %: 100
Color (Gardner): 6 Maximum
Odor: Typical
Free Fatty Acid (as Oleic), %: 1 Maximum
Free Amine (as DEA), %: 7 Maximum

MACKAMIDE SMA:
Stearamide MEA
MACKAMIDE SMA is an alkanolamide nonionic surface active agent which is designed for use in cosmetics as a pearling and opacifying agent. MACKAMIDE SMA, beacuse of its high melting point, is an effective gelling agent and wax additive for products supplied in stick form.
White to Off-White Flake
Melting Point: 94-96C
Specific Gravity: 0.995
Free Amine Content as MEA, %: 3.0 Maximum
Free Fatty Acid Content as Stearic, %: 1.0 Maximum

MCINTYRE GROUP LTD.: MACKAMINE Surfactants:

MACKAMINE CAO:
Cocamidopropylamine Oxide
MACKAMINE CAO is a light colored amine oxide that provides excellent foam boosting and stability. It is compatible with most surfactants and provides excellent foam performance in both acid and alkaline systems.
Light Amber Liquid
Amine Oxide, %: 29.5-31.5
pH: 6.5-7.5
Color (Gardner): 3 Maximum
Cloud Point: 5C.

MACKAMINE CO:
Cocamine Oxide
MACKAMINE CO is a light colored amine oxide that provides excellent foam boosting and stability. It is compatible with most surfactants and because there are no amide or ester groups, MACKAMINE CO will not hydrolyze in acid systems. It is also stable in highly alkaline products.
Clear Liquid
Amine Oxide, %: 29.0 Minimum
pH: 7.0-9.0
Color (Gardner): 3 Maximum
Cloud Point: 5C.

MACKAMINE LO:
Lauryl Dimethylamine Oxide
MACKAMINE LO is a light colored amine oxide that provides excellent foam boosting and stability. It is compatible with most surfactants and because there are no amide or ester groups, MACKAMINE LO will not hydrolyze in acid systems. It is also stable in highly alkaline products.
Clear Liquid
Amine Oxide, %: 29 Minimum
pH: 6.5-8.5
Color (Gardner): 2 Maximum
Cloud Point: 5C.

MCINTYRE GROUP LTD.: MACKANATE Surfactants:

MACKANATE DOS-40:
Dioctyl Sodium Sulfosuccinate
MACKANATE DOS-40 is a highly effective anionic wetting agent, penetrating agent and surface tension reducer.
Clear Liquid
Concentration, %: 40.0+-2.0
Color (Gardner): 6 Maximum
Odor: Characteristic
pH (1%): 5.0-7.0
Cloud Point: Less than 5C.

MACKANATE DOS-70:
Dioctyl Sodium Sulfosuccinate
MACKANATE DOS-70 is a highly effective wetting agent, penetrating agent, and surface tension reducer. It is an excellent dedusting and dewatering agent.
Clear Slightly Viscous Liquid
Concentration, %: 69.0-71.0
Color (Gardner): 2 Maximum
Odor: Alcoholic
pH (1%): 5.0-7.0

MACKANATE DOS-70PG:
Dioctyl Sodium Sulfosuccinate
MACAKANATE DOS-70PG is a highly effective anionic wetting agent, penetrating agent and surface tension reducer.
Clear to Slightly Hazy Liquid
Concentration, %: 70.0+-1.5
Color (Gardner): 1 Maximum
Odor: Typical
pH (1%): 5.0-7.0

MACKANATE DOS-75:
Dioctyl Sodium Sulfosuccinate
MACKANATE DOS-75 is a highly effective anionic wetting agent, penetrating agent and surface tension reducer.
Clear Slightly Viscous Liquid
Concentration, %: 74.0-76.0
Color (Gardner): 2 Maximum
Odor: Alcoholic
pH (1%): 5.0-7.0
Specific Gravity: 1.08
Solubility (Water, 25C), %: 1.5
Organic Solubility: Very Good
Critical Micelle Concentration: 0.08+-0.01g/100ml
Surface Tension (Dynes/cm): 26
EPA Exempt: 40 CFR 180.100 1C

MCINTYRE GROUP LTD.: MACKAZOLINE Surfactants:

MACKAZOLINE C:
Cocoyl Hydroxyethyl Imidazoline
MACKAZOLINE C is classified as cationic surface active agent. They are oil soluble and water dispersible and contain no solvents. MACKAZOLINE C offers good emulsification properties and stability.
Amber Liquid/May Crystallize on Standing
Color (Gardner): 9 Maximum
Alkali Value: 240-260
Acid Value: 1 Maximum
pH (10% aq): 10.5-12.0
Specific Gravity (25C): 0.92
Weight/Gallon, lbs.: 7.7

MACKAZOLINE O:
Oleyl Hydroxyethyl Imidazoline
MACKAZOLINE O is classified as a cationic surface active agent. They are oil soluble and water dispersible and contain no solvents. MACKAZOLINE O offers good emulsification properties and stability.
Amber Liquid/May Crystallize on Standing
Color (Gardner): 9 Maximum
Alkali Value: 200 Maximum
Acid Value: 1 Maximum
pH (10% aq): 10.5-12.0
Specific Gravity (25C): 0.92
Weight/Gallon, lbs.: 7.7

MCINTYRE GROUP LTD.: MACKESTER Surfactants:

MACKESTER EGDS:
Glycol Distearate
MACKESTER EGDS is an Ethylene Glycol Distearate synthesized for cosmetic formulations. It is suitable as an opacifier and pearl producing agent for lotions, creams, shampoos, and hand cleaners. MACKESTER EGDS is 100% organic and totally biodegradable.
Melting Point: 67
White to Cream Colored Waxy Flake
Iodine Value: 1.0 Max.
Acid Value: 8 Max.
Saponification Number: 188-210

MACKESTER EGMS:
Glycol Stearate
MACKESTER EGMS is an Ethylene Glycol Monostearate synthesized for cosmetic formulations. It is suitable as an opacifier and pearl producing agent for lotions, creams, shampoos, and hand cleaners. MACKESTER EGMS is 100% organic and totally biodegradable.
White Waxy Flake
Iodine Value: 0.5 Maximum
Acid Value: 5.0 Maximum

MACKESTER TDCC:
Triethylene Glycol Dicaprylate-Caprate
MACKESTER TDCC is primarily used as a plasticizer for rubber and plastics.
Clear Liquid
Color (Gardner): 4 Maximum
Acid Value: 1.0 Maximum
Refractive Index @ 25C: 1.4425-1.4460
Specific Gravity @ 25C: 0.968

MACKESTER TDO:
Triethylene Glycol Ethyl Hexoate
MACKESTER TDO is primarily used as a plasticizer for rubber and plastics.
Clear Liquid
Odor: Slight Odor of Ethyl Hexanol
Color (Gardner): 6 Maximum
Acid Value: 5 Maximum
pH (2% Dispersion in D.I. Water): 6.4-7.5
Refractive Index @ 25C: 1.4415-1.4435

MIRANOL INC: MIRANOL Products for Household/Industrial Applications:

MIRANOL Amphoteric Surfactants - Carboxylated Imidazoline Derivatives:

MIRANOL CM Conc. O.P.:
Cocoamphoglycinate
% Solids: 42.0
% NaCl: 6.3
pH: 12.5
Sp. Gr.: 1.09
Prominent Applications: Heavy Duty Hard Surface Cleaners

MIRANOL CM Conc. N.P.:
Cocoamphoglycinate
% Solids: 44.0
% NaCl: 7.0
pH: 9.2
Sp. Gr.: 1.08
Prominent Applications: Heavy Duty Hard Surface Cleaners

MIRANOL CM-SF Conc.:
Cocoamphopropionate
% Solids: 37.0
% NaCl: 0.02
pH: 10.0
Sp. Gr.: 1.04
Prominent Applications: High Electrolyte Cleaners, Emulsion Polymerization

MIRANOL C2M Conc. O.P.:
Cocoamphocarboxyglycinate
% Solids: 50.0
% NaCl: 11.7
pH: 8.2
Sp. Gr.: 1.17
Prominent Applications: Liquid Soaps

MIRANOL C2M Conc. N.P.:
Cocoamphocarboxyglycinate
% Solids: 50.0
% NaCl: 11.5
pH: 8.2
Sp. Gr.: 1.18
Prominent Applications: Liquid Soaps

MIRANOL C2M-SF Conc.:
Cocoamphocarboxypropionate
% Solids: 39.0
% NaCl: 0.02
pH: 9.6
Sp. Gr.: 1.07
Prominent Applications: Hard Surface Cleaners, Industrial Laundry Detergents

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRANOL Amphoteric Surfactants - Carboxylated Imidazoline Derivatives (Continued):

MIRANOL C2M-SF 70%:
Cocoamphocarboxypropionate
% Solids: 71.0
% NaCl: 0.05
pH: 9.6
Sp. Gr.: 1.10
Prominent Applications: Bar Soaps

MIRANOL HM Conc.:
Lauroamphoglycinate
% Solids: 43.5
% NaCl: 7.3
pH: 9.2
Sp. Gr.: 1.12
Prominent Applications: Liquid Cleaners, Burnishing Compounds

MIRANOL H2M Conc.:
Lauroamphocarboxyglycinate
% Solids: 50.0
% NaCl: 11.7
pH: 8.2
Sp. Gr.: 1.17
Prominent Applications: High Foam Degreaser

MIRANOL H2M-SF Conc.:
Lauroamphocarboxypropionate
% Solids: 39.0
% NaCl: 0.02
pH: 9.5
Sp. Gr.: 1.07
Prominent Applications: Hard Surface Cleaners, Industrial Laundry Detergents

MIRANOL H2M-SF 70%:
Lauroamphocarboxypropionate
% Solids: 71.0
% NaCl: 0.09
pH: 9.5
Sp. Gr.: 1.10
Prominent Applications: Bar Soaps

MIRANOL SM Conc.:
Caproamphoglycinate
% Solids: 43.0
% NaCl: 8.0
pH: 9.0
Sp. Gr.: 1.10
Prominent Applications: Liquid Soaps, Carpet Shampoos

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRANOL Amphoteric Surfactants - Carboxylated Imidazoline Derivatives (Continued)

MIRANOL S2M Conc.:
Caproamphocarboxyglycinate
% Solids: 50.5
% NaCl: 12.5
pH: 8.2
Sp. Gr.: 1.20
Prominent Applications: Liquid Soaps, Carpet Shampoos

MIRANOL S2M-SF Conc.:
Caproamphocarboxypropionate
% Solids: 39.0
% NaCl: 0.02
pH: 9.0
Sp. Gr.: 1.09
Prominent Applications: Liquid Soaps, Carpet Shampoos

MIRANOL JEM Conc.:
Mixed C8 amphocarboxylates
% Solids: 34.0
% NaCl: 5.5
pH: 10.2
Sp. Gr.: 1.13
Prominent Applications: Bottle Washing, Low Foam Cleaners, Steam Cleaning

MIRANOL J2M Conc.:
Capryloamphocarboxyglycinate
% Solids: 49.0
% NaCl: 11.3
pH: 8.6
Sp. Gr.: 1.20
Prominent Applications: Steam Cleaning, Machine Dishwashing

MIRANOL J2M-SF Conc.:
Capryloamphocarboxypropionate
% Solids: 38.5
% NaCl: 0.02
pH: 9.0
Sp. Gr.: 1.10
Prominent Applications: Bottle Washing, Low Foam Cleaners, Steam Cleaning

MIRANOL LM-SF Conc.:
Tallamphopropionate
% Solids: 37.0
% NaCl: 0.02
pH: 10.0
Sp. Gr.: 1.04
Prominent Applications: Water Based Lubricant

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRANOL Amphoteric Surfactants - Carboxylated Imidazoline Derivatives (Continued):

MIRANOL L2M-SF Conc.:
Tallamphocarboxypropionate
% Solids: 39.0
% NaCl: 0.02
pH: 10.2
Sp. Gr.: 1.06
Prominent Applications: Wax Strippers, Spray Degreasers, Hard Surface Cleaners

MIRANOL DM:
Stearoamphoglycinate
% Solids: 26.0
% NaCl: 5.3
pH: 5.6
Sp. Gr.: 0.94
Prominent Applications: Fabric Softener, Metal Polish

MIRANOL Amphoteric Surfactants - Carboxylated Imidazoline Derivatives (Anhydrous Acids):

MIRANOL C2M Anhydrous Acid:
Cocoamphocarboxypropionic Acid
% Solids: 100
% NaCl: nil
Sp. Gr.: 1.06
MIRANOL H2M Anhydrous Acid:
Lauroamphocarboxypropionic Acid
% Solids: 100
% NaCl: nil
Sp. Gr.: 1.06
Prominent Applications: Paint Strippers, Electroplating, Non-Aqueous Cleaners

MIRANOL JEM Anhydrous Acid:
Mixed C8 Amphocarboxylic Acid
% Solids: 100
% NaCl: nil
Sp. Gr.: 1.07
MIRANOL J2M Anhydrous Acid:
Caprylamphocarboxypropionic Acid
% Solids: 100
% NaCl: nil
Sp. Gr.: 1.06
Prominent Applications: Paint Strippers, Electroplating, Non-Aqueous Cleaners

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRANOL Amphoteric Surfactants - Sulfonated Imidazoline Derivatives:

MIRANOL CS Conc.:
Cocoamphopropylsulfonate
% Solids: 45.0
% NaCl: 7.2
pH: 8.0
Sp. Gr.: 1.15
Prominent Applications: Cold Water Fabric Detergent

MIRANOL OS-D:
Oleoamphopropylsulfonate
% Solids: 25.0
% NaCl: 3.75
pH: 9.2
Sp. Gr.: 1.07
Prominent Applications: Fabric Detergent

MIRANOL JS Conc.:
Capryloamphopropylsulfonate
% Solids: 49.0
% NaCl: 8.75
pH: 8.0
Sp. Gr.: 1.19
Prominent Applications: Wetting Agent, Corrosion Inhibitor

MIRATAINE Amphoteric Surfactants - Betaines and Sultaines:

MIRATAINE CB:
Cocamidopropyl Betaine
% Solids: 35.0
% NaCl: 5.0
pH: 8.5
Sp. Gr.: 1.05
Prominent Applications: Liquid Soaps, Dishwashing Detergents, High-foam Cleansers

MIRATAINE CBC:
Cocamidopropyl Betaine
% Solids: 35.0
% NaCl: 5.0
pH: 6.0
Sp. Gr.: 1.04
Prominent Applications: Liquid Soaps, Dishwashing Detergents, High-foam Cleansers

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRANOL Amphoteric Surfactants - Betaines and Sultaines (Continued):

MIRANOL COB:
Cocamidopropyl and Oleamidopropyl Betaine
% Solids: 34.0
% NaCl: 4.5
pH: 7.0
Sp. Gr.: 1.05
Prominent Applications: Liquid Soaps, Dishwashing Detergents, High-foam Cleansers

MIRATAINE ODMB-35:
Oleyl Betaine
% Solids: 35.0
% NaCl: 5.0
pH: 7.0
Sp. Gr.: 1.01
Prominent Applications: Liquid Soaps

MIRATAINE TM:
Dihydroxyethyl Tallow Glycinate
% Solids: 40.0
% NaCl: 5.0
pH: 5.0
Sp. Gr.: 1.03
Prominent Applications: Acid Thickener, Oven Cleaners

MIRATAINE CBS:
Cocamidopropyl Hydroxysultaine
% Solids: 50.0
% NaCl: 6.5
pH: 8.5
Sp. Gr.: 1.09
Prominent Applications: Acid Pickling (Oxidizing Acid Stable)

MIRATAINE Amphoteric Surfactants - Aminopropionates:

MIRATAINE H2C:
Disodium Lauriminodipropionate
% Solids: 30.0
% NaCl: nil
pH: 10.5
Sp. Gr.: 1.05
Prominent Applications: Heavy Duty Hard Surface Cleaner

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRATAINE Amphoteric Surfactants - Aminopropionates (Continued):

MIRATAINE H2C-HA:
Sodium Lauriminodipropionate
% Solids: 30.0
% NaCl: nil
pH: 7.0
Sp. Gr.: 1.03
Prominent Applications: Liquid Soap

MIRATAINE T2C:
Disodium Tallowiminodipropionate
% Solids: 30.0
% NaCl: nil
pH: 11.5
Sp. Gr.: 1.05
Prominent Applications: Lubricant, Oil Drilling

MIRAPON - Industrial Surfactants:

MIRAPON FM:
Potassium Salt of N-Alkylamine Acid
% Solids: 78.0
% NaCl: nil
pH: 10.5
Sp. Gr.: 1.02
Prominent Applications: Burnishing, Emulsion Cleaners, Vibratory Barrel Cleaners

MIRAPON JAS-50:
Capryloamphopropionate
% Solids: 50.0
% NaCl: nil
pH: 10.5
Sp. Gr.: 1.06
Prominent Applications: Steam Cleaners, Wax Strippers, Degreasers

MIRAWET - Wetting Agents:

MIRAWET B:
Sodium Butoxyethoxy Acetate
% Solids: 46.0
% NaCl: 3.0
pH: 9.5
Sp. Gr.: 1.10
Prominent Applications: Non-Foaming Wetting Agent

MIRANOL INC.: MIRANOL Products for Household/Industrial Applications (Continued):

MIRAWET - Wetting Agents (Continued):

MIRAWET FL:
Modified Amphoteric
pH: 9.0
Prominent Applications: High Active Controlled-Foam Wetting Agent

MIRAWET ASC:
Alkylether Hydroxypropyl Sultaine
% Solids: 50.0
% NaCl: 7.5
pH: 8.5
Sp. Gr.: 1.14
Prominent Applications: Non-Foaming Wetting Agent for extremely alkaline or acid systems

MIRAMINE Imidazoline and Amine Surfactants:

MIRAMINE CC:
Coco Imidazoline
% Solids: 100
% NaCl: nil
Sp. Gr.: 0.94

MIRAMINE OC:
Oleyl Imidazoline
% Solids: 100
% NaCl: nil
Sp. Gr.: 0.93
Prominent Applications: Emulsifiers, Oil Soluble, for Industrial Detergents, Cleaners and Corrosion Inhibitors

MIRAMINE SC:
Soya Imidazoline
% Solids: 100
% NaCl: nil
Sp. Gr.: 0.93

MIRAMINE TOC:
Tall Oil Imidazoline
% Solids: 100
% NaCl: nil
Sp. Gr.: 0.93

MIRAMINE GS:
Stearyl Imidazoline
% Solids: 100
% NaCl: nil
Sp. Gr.: 0.93
Prominent Applications: Emulsifiers, Oil Soluble, for Industrial Detergents, Cleaners and Corrosion Inhibitors

MONA INDUSTRIES, INC.: MONA NF Products: Low Foaming Surfactants: MONA NF-10, NF-15, NF-25 Series:

MONA NF-10, NF-15 and NF-25 are low foaming anionic surfactants which are soluble in concentrated alkaline builder solutions. These products differ in their degree of electrolyte tolerance but each provides excellent detergency characteristics. They are recommended for use in spray, soak tank, in-place pipeline cleaners and floor scrubbing formulations.

Features:

MONA NF products display the solubility characteristics of ionic surfactants in alkaline builder concentrates but, when diluted, they exhibit nonionic cloud point bahavior. They ofer the following advantages:

* Soluble in concentrated alkali solutions
* Quick solubilization
* Superior detergency
* Rapid wetting
* Non-foaming above solution cloud point

MONA NF-10:

Clear
Color (GVCS 1933): <1
Solids (%): 50
Ionic Nature: Anionic
pH (as is): 9.2
Specific Gravity @ 25C: 1.06
Viscosity (cP): 1000

MONA NF-15:

Clear
Color (GVCS 1933): <1
Solids (%): 50
Ionic Nature: Anionic
pH (as is): 7.5
Specific Gravity @ 25C: 1.16
Viscosity (cP): 900

MONA NF-25:

Clear
Color (GVCS 1933): <1
Solids (%): 50
Ionic Nature: Anionic
pH (as is): 7.9
Specific Gravity @ 25C: 1.22
Viscosity (cP): 900

MONA INDUSTRIES, INC.: MONAFAX Surfactants:

MONAFAX surfactants are mixtures of mono and di-phosphate esters derived from alcohol and/or ethylene oxide-based surfactants which exhibit outstanding emulsifying, lubricating, antistatic, detergency and corrosion inhibiting properties.

785:
Clear to Slightly Hazy Viscous Liquid
Hydrophobic Base: Aromatic
Acid Value #1 @ pH 5.0-5.5: 70+-3
Acid Value #2 @ pH 9.5-9.8: 125+-6
pH 10% Solution @ 25C: 2.5
C.M.C. (% by Wt.): 0.011
Activity: 100%
% Phosphorus: 4.09
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.12
Lbs/Gal: 9.3

786:
Clear to Slightly Hazy Viscous Liquid
Hydrophobic Base: Aromatic
Acid Value #1 @ pH 5.0-5.5: 57+-3
Acid Value #2 @ pH 9.5-9.8: 95+-6
pH 10% Solution @ 25C: 2.5
C.M.C. (% by Wt.): 0.0165
Activity: 100%
% Phosphorus: 3.15
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.09
Lbs/Gal: 9.1

831:
Clear Viscous Liquid
Hydrophobic Base: Aliphatic
Acid Value #1 @ pH 5.0-5.5: 110+-3
Acid Value #2 @ pH 9.5-9.8: 175+-6
pH 10% Solution @ 25C: 2.5
C.M.C. (% by Wt.): 0.03
Activity: 100%
% Phosphorus: 6.42
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.08
Lbs/Gal: 9.0

872:
Clear Light Straw Liquid
Hydrophobic Base: Aromatic
Acid Value #1 @ pH 5.0-5.5: 17+-5
Acid Value #2 @ pH 9.5-9.8: 95+-5
pH 10% Solution @ 25C: 7-9
Activity: 50%
% Phosphorus: 6.16
% Moisture Content: 50+-1
Specific Gravity @ 25C: 1.35
Lbs/Gal: 11.3

MONA INDUSTRIES, INC.: MONAFAX Surfactants (Continued):

939:
Clear Amber Liquid
Hydrophobic Base: Aliphatic
Acid Value #1 @ pH 5.0-5.5: 220+-5
Acid Value #2 @ pH 9.5-9.8: 335+-10
pH 10% Solution @ 25C: 2.5
Activity: 100%
% Phosphorus: 13.09
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.04
Lbs/Gal: 8.7

057:
Clear Yellow Viscous Liquid
Hydrophobic Base: Aromatic
Acid Value #1 @ pH 5.0-5.5: 98+-2
Acid Value #2 @ pH 9.5-9.8: 165+-15
pH 10% Solution @ 25C: 2.5
Activity: 100%
% Phosphorus: 5.8
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.20
Lbs/Gal: 10.0

060:
Clear Amber Viscous Liquid
Hydrophobic Base: Aliphatic
Acid Value #1 @ pH 5.0-5.5: 335+-5
Acid Value #2 @ pH 9.5-9.8: 617+-5
pH 10% Solution @ 25C: 2.5
Activity: 100%
% Phosphorus: 18.20
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.34
Lbs/Gal: 11.2

1214:
Clear Viscous Liquid
Hydrophobic Base: Aliphatic
Acid Value #1 @ pH 5.0-5.5: 225+-10
Acid Value #2 @ pH 9.5-9.8: 430+-10
pH 10% Solution @ 25C: 2.0
Activity: 100%
% Phosphorus: 12.5
% Moisture Content: 1.0 Max.
Specific Gravity @ 25C: 1.21
Lbs/Gal: 10.1

MONA INDUSTRIES, INC.: MONAMATES: High-Foaming Sulfosuccinate Surfactants:

The MONAMATE series of sulfosuccinate surfactants has been designed specifically for the personal care and household areas.

General Functional Characteristics:

* Low skin and eye irritation properties.
* Excellent foaming properties ranging from high flash foam with open bubble structure to rich, long lasting dense lather.
* Soap-like feel at low pH.
* Talc-like after-feel.
* Outstanding cleaning properties on skin and hair without overreduction of natural epidermal lipids.

MONAMATE LNT-40:
CTFA Designation: Ammonium Lauryl Sulfosuccinate
% Active: 40
Physical Form: Liquid

MONAMATE OPA-30:
CTFA Designation: Disodium Oleamido PEG-2 Sulfosuccinate
% Active: 30
Physical Form: Liquid

MONAMATE C-1142:
CTFA Designation: Disodium Cocamido MIPA Sulfosuccinate
% Active: 40
Physical Form: Liquid

MONAMATE CPA-40:
CTFA Designation: Disodium Cocamido MIPA Sulfosuccinate
% Active: 40
Physical Form: Liquid

MONAMATE LA-100:
CTFA Designation: Disodium Lauryl Sulfosuccinate
% Active: 100
Physical Form: Powder

MONAMATE OPA-100:
CTFA Designation: Disodium Oleamido PEG-2 Sulfosuccinate
% Active: 100
Physical Form: Powder

MONAMATE CPA-100:
CTFA Designation: Disodium Cocamido MIPA Sulfosuccinate
% Active: 100
Physical Form: Powder

MONA INDUSTRIES, INC.: MONAQUAT Surfactants:

MONATERIC AT-1074:
A cationic surfactant created to thicken hydrochloric acid solutions.

Typical Properties:
Clear to slightly hazy viscous liquid
Activity: 30%
Ionic Nature: Cationic
Color (GVCS 1933): 3
pH (10% Aqueous): 5.5
Specific Gravity: 0.9864
Weight/Gallon: 8.22 lbs.
Solidification Point: Less than 0C

MONAQUAT ISIES:
A 100% active, liquid quaternary compound offering excellent antistatic, lubricating, fiber softening and corrosion inhibiting properties in aqueous and non-aqueous systems.

Typical Properties:
Quaternized Heptadecyl Imidazoline
Activity: 100%
Amber liquid
pH of 10% Solution: 6.9
Specific Gravity @ 25C: 1.03
Solubilities @ 10% conc. in:
Water: Clearly Soluble
Ethanol: Clearly Soluble
Butyl Cellosolve: Clearly Soluble
Aromatic Hydrocarbons: Clearly Soluble
Chlorinated Hydrocarbons: Clearly Soluble
Fluorinated Hydrocarbons: Clearly Soluble
Mineral Oil: Insoluble

MONAQUAT TG:
A quaternary designed to give exceptional performance in hair and skin products.

Typical Properties:
CTFA Designation: Bishydroxyethyl Dihydroxyethyl Stearaminium Chloride
Slightly hazy liquid
Color (GVCS 1933): 3
Ionic Nature: Cationic
pH (10% Solution): 5.5
NaCl: 5.0%
Moisture (K.F.): 58.6%

MONA INDUSTRIES INC.: MONATERIC Surfactants:

I. Imidazoline Derived:
   A) Monocarboxylic
      1. with salt (Glycinates)

CM-36S:
   CTFA: Cocoamphoglycinate
   Counter Ion: Na+
   Clear Amber Liquid
   pH @ 10%: 11.9
   % Total Solids: 42
   % NaCl: 6
   % Active: 36
   Wetting 1% Active: 5 sec.
   Specific Gravity (25C): 1.10
   Lbs./Gal.: 9.2

LMM-30:
   CTFA: Lauroamphoglycinate
   Counter Ion: Na+
   Viscous Amber Liquid
   pH @ 10%: 9.2
   % Total Solids: 36
   % NaCl: 6
   % Active: 30
   Wetting 1% Active: 5 sec.
   Specific Gravity (25C): 1.09
   Lbs/Gal.: 9.1

      2. Salt free (Propionates):

CA-35:
   CTFA: Cocoamphopropionate
   Counter Ion: H+
   Clear Amber Liquid
   pH @ 10%: 5.7
   % Total Solids: 35
   % Active: 35
   Wetting 1% Active: 11 sec.
   Specific Gravity (25C): 1.02
   Lbs/Gal.: 8.5

CAM-40:
   CTFA: Cocoamphopropionate
   Counter Ion: Na+
   Clear Amber Liquid
   pH @ 10%: 9.3
   % Total Solids: 40
   % Active: 40
   Wetting 1% Active: 40 sec.
   Specific Gravity (25C): 1.05
   Lbs/Gal.: 8.8

MONA INDUSTRIES INC.: MONATERIC Surfactants (Continued):

I. Imidazoline Derived (Continued):
   A) Monocarboxylic (Continued):
      2) Salt free (propionates) (Continued):

ISA-35:
   CTFA: Isostearoamphopropionate
   Counter Ion: H+
   Clear Amber Liquid
   pH @ 10%: 5.4
   % Total Solids: 35
   % Active: 35
   Wetting 1% Active: 10 min.
   Specific Gravity (25C): 1.01
   Lbs./Gal.: 8.4

Cy Na-50:
   CTFA: Capryloamphopropionate
   Counter Ion: Na+
   Dark Amber Liquid
   pH @ 10%: 10.6
   % Total Solids: 50
   % Active: 50
   Wetting 1% Active: 29 sec.
   Specific Gravity (25C): 1.10
   Lbs./Gal.: 9.2

LF Na-50:
   CTFA: Not assigned - mixed short chain
   Counter Ion: Na+
   Clear Brown Liquid
   pH @ 10%: 11.5
   % Total Solids: 50
   % Active: 50
   Wetting 1% Active: 10 min.
   Specific Gravity (25C): 1.09
   Lbs./Gal.: 9.1

LF-100:
   CTFA: Not assigned - mixed short chain
   Clear Brown Liquid
   pH @ 10%: 11.7
   % Total Solids: 100
   % Active: 100
   Wetting 1% Active: 25 sec.
   Specific Gravity (25C): 1.04
   Lbs./Gal.: 8.7

MONA INDUSTRIES, INC.: MONATERIC Surfactants (Continued):

I. Imidazoline Derived (Continued):
   A) Monocarboxylic (Continued):
      2. Salt free (Propionates) (Continued):

810-A-50:
   CTFA: Not assigned - Caprylic/Capric
   Counter Ion: H+
   Clear Brown Liquid
   pH @ 10%: 4.4
   % Total Solids: 50
   % Active: 50
   Wetting 1% Active: 5 sec.
   Specific Gravity (25C): 1.07
   Lbs/Gal.: 8.9

TA-35:
   CTFA: Not assigned - Tall Oil
   Counter Ion: H+
   Dark Brown Gel
   pH @ 10%: 5.2
   % Total Solids: 35
   % Active: 35
   Wetting 1% Active: 7 min.
   Specific Gravity (25C): 1.02
   Lbs./Gal.: 8.5

CNa-40:
   CTFA: Not assigned - Coconut
   Counter Ion: Na+
   Clear Amber Liquid
   pH @ 10%: 10.9
   % Total Solids: 40
   % Active: 40
   Wetting 1% Active: 6 sec.
   Specific Gravity (25C): 1.09
   Lbs/Gal.: 9.1

   B) Dicarboxylic:
      1. with salt (Glycinates):

CDX-38:
   CTFA: Cocoamphocarboxyglycinate
   Counter Ion: Na+
   Viscous Yellow Liquid
   pH @ 10%: 8.5
   % Total Solids: 50
   % NaCl: 11
   % Active: 39
   Wetting 1% Active: 18 sec.
   Specific Gravity (25C): 1.18
   Lbs/Gal.: 9.8

MONA INDUSTRIES INC.: MONATERIC Surfactants (Continued):

I. Imidazoline Derived (Continued):
B) Dicarboxylic (Continued):
1. With salt (Glycinates) (Continued):

CDX-38 Mod:
CTFA: Cocoamphocarboxyglycinate
Counter Ion: Na+
Clear Yellow Liquid
pH @ 10%: 8.8
% Total Solids: 50
% NaCl: 11
% Active: 39
Wetting 1% Active: 20 sec.
Specific Gravity (25C): 1.18
Lbs/Gal.: 9.8

CSH-32:
CTFA: Cocoamphocarboxyglycinate
Counter Ion: Na+
Clear Yellow Liquid
pH @ 10%: 8.4
% Total Solids: 40
% NaCl: 8
% Active: 32
Wetting 1% Active: 20 sec.
Specific Gravity (25C): 1.13
Lbs/Gal: 9.4

2. Salt free (Propionates):

CEM-38:
CTFA: Cocoampohocarboxypropionate
Counter Ion: Na+
Clear to Hazy Amber Liquid
pH @ 10%: 8.6
% Total Solids: 39
% Active: 39
Wetting 1% Active: 4.5 min.
Specific Gravity (25C): 1.05
Lbs/Gal.: 8.8

CEM-38CG:
CTFA: Cocoamphocarboxypropionate
Counter Ion: Na+
Clear to Hazy Amber Liquid
pH @ 10%: 9.8
% Total Solids: 38
% Active: 38
Wetting 1% Active: 10 min.
Specific Gravity (25C): 1.07
Lbs./Gal.: 8.9

MONA INDUSTRIES, INC.: MONATERIC Surfactants (Continued):

I: Imidazoline Derived (Continued):
B. Dicarboxylic (Continued):
2. Salt free (Propionates) (Continued):

811:
CTFA: Not assigned - Caprylic
Counter Ion: Na+
Clear to Hazy Amber Liquid
pH @ 10%: 11.4
% Total Solids: 50
% Active: 50
Wetting 1% Active: Instant
Specific Gravity (25C): 1.04
Lbs/Gal.: 8.7

1000:
CTFA: Capryloamphopropionate
Counter Ion: Na+
Clear to Hazy Amber Liquid
pH @ 10%: 11.8
% Total Solids: 50
% Active: 50
Wetting 1% Active: Instant
Specific Gravity (25C): 1.05
Lbs/Gal.: 8.8

CyA-50:
CTFA: Not assigned - Caprylic
Counter Ion: H+
Clear Dark Brown Liquid
pH @ 10%: 5.6
% Total Solids: 50
% Active: 50
Wetting 1% Active: 9 sec.
Specific Gravity (25C): 1.07
Lbs/Gal.: 8.9

CyMM-40:
CTFA: Not assigned - Caprylic
Counter Ion: Na+
Clear Amber Liquid
pH @ 10%: 9.8
% Total Solids: 40
% Active: 40
Wetting 1% Active: 4.5 min.
Specific Gravity (25C): 1.10
Lbs/Gal.: 9.2

MONA INDUSTRIES, INC.: MONATERIC Surfactants (Continued):

II: Betaines:

CAB:
CTFA: Cocamidopropyl Betaine
Counter Ion: Inner Salts
Clear Light Yellow Liquid
pH @ 10%: 7.1
% Total Solids: 35
% NaCl: 5
% Active: 30
Wetting 1% Active: 18 sec.
Specific Gravity (25C): 1.04
Lbs/Gal.: 8.7

MCB:
CTFA: Cocamidopropyl Betaine
Counter Ion: Inner Salts
Clear Light Yellow Liquid
pH @ 10%: 4.8
% Total Solids: 33
% NaCl: 3
% Active: 30
Wetting 1% Active: 18 sec.
Specific Gravity (25C): 1.02
Lbs/Gal.: 8.5

COAB:
CTFA: Cocamidopropyl Betaine
Counter Ion: Inner Salts
Clear Yellow Liquid
pH @ 10%: 7.9
% Total Solids: 37
% NaCl: 5
% Active: 32
Wetting 1% Active: 10 sec.
Specific Gravity (25C): 1.04
Lbs/Gal.: 8.7

ADA:
CTFA: Cocamidopropyl Betaine
Counter Ion: Inner Salts
Clear Amber Liquid
pH @ 10%: 7.7
% Total Solids: 38
% NaCl: 5
% Active: 33
Wetting 1% Active: 13 sec.
Specific Gravity (25C): 1.05
Lbs/Gal.: 8.8

MONA INDUSTRIES, INC.: MONATERIC Surfactants (Continued):

II: Betaines (Continued):

LMAB:
Lauramidopropyl Betaine
Counter Ion: Inner Salts
Clear Light Yellow Liquid
pH @ 10%: 8.3
% Total Solids: 35
% NaCl: 5
% Active: 30
Wetting 1% Active: 9 sec.
Specific Gravity (25C): 1.04
Lbs/Gal.: 8.7

III: Blends:

985A:
CTFA: Lauroamphoglycinate/Sodium Trideceth Sulfate
Clear Amber Liquid
pH @ 10%: 9.3
% Total Solids: 39
% NaCl: 3
% Active: 36
Wetting 1% Active: Instant
Specific Gravity (25C): 1.07
Lbs/Gal.: 8.9

805:
CTFA: Cocoamphocarboxyglycinate/Cocamido MIPA-SS
Counter Ion: Na2
Clear Amber Liquid
pH @ 10%: 7.7
% Total Solids: 42
% NaCl: 2
% Active: 40
Wetting 1% Active: 5 sec.
Specific Gravity (25C): 1.10
Lbs/Gal.: 9.2

CDL:
CTFA: Cocoamphocarboxyglycinate/SLES SLS
Clear Yellow Liquid
pH @ 10%: 8.5
% Total Solids: 37
% NaCl: 6
% Active: 31
Wetting 1% Active: 4 sec.
Specific Gravity (25C): 1.11
Lbs/Gal.: 9.2

MONA INDUSTRIES, INC.: MONATERIC Surfactants (Continued):

III: Blends (Continued):

CDTD:
CTFA: Cocoamphocarboxyglycinate/Sodium Trideceth Sulfate
Clear Yellow Liquid
pH @ 10%: 8.3
% Total Solids: 50
% NaCl: 6
% Active: 44
Wetting 1% Active: Instant
Specific Gravity (25C): 1.11
Lbs/Gal.: 9.2

CDS:
CTFA: Cocoamphocarboxyglycinate/Sodium Lauryl Sulfate
Clear Yellow Liquid
pH @ 10%: 8.5
% Total Solids: 37
% NaCl: 6
% Active: 31
Wetting 1% Active: 3 sec.
Specific Gravity (25C): 1.09
Lbs/Gal.: 9.1

IV: Proprietary Compounds:

ADFA:
CTFA: Not assigned
Clear Amber Liquid
pH @ 10%: 7.8
% Total Solids: 34
% NaCl: 3
% Active: 31
Wetting 1% Active: 10 sec.
Specific Gravity (25C): 1.03
Lbs/Gal.: 8.6

MONA INDUSTRIES, INC.: MONATROPE Surfactant Hydrotropes:

MONATROPE 1250:

MONATROPE 1250 is a highly versatile, low foaming surfactant hydrotrope which is very effective in formulating alkaline built liquid detergent concentrates. It is an excellent coupling agent for nonionic and other surfactants in high concentrations of electrolytes. MONATROPE 1250 is not recommended for use in low pH acidic systems.

Features:

* Excellent hydrotrope performance.
* Soluble in high electrolyte systems.
* Excellent stability in alkaline solutions.
* Compatible in hypochlorite containing formulations.
* Low foaming under most use conditions.

Typical Properties:

Clear Liquid
% Total Solids: 45 (aqueous solution)
Color: 1 Gardner
pH: 10
Ionic Nature: Anionic
Chemical Identity: Sodium Alkanoate

MONATROPE 1296:

MONATROPE 1296 is a low foaming organic phosphate ester surfactant which is utilized as a hydrotrope in formulating highly built liquid detergents for either household or industrial applications. Because it is compatible and chemically stable, even in concentrated alkaline builder solutions, it is particularly effective as a solubilizer for nonionics and other detergents in high electrolyte systems.

Features:

* Excellent solubility in concentrated electrolytes
* Stable in high pH formulations
* Excellent hydrotrope over a broad range of alkali concentrations
* Low foaming at use dilutions
* Liquid properties allow easy compounding
* Does not interfere with the detergent properties of other surfactants
* Effective in hypochlorite containing formulations

Typical Properties:

Clear Liquid
% Total Solids: 50 (Aqueous solution)
Color: 2 Gardner
pH: 5
Specific Gravity @ 20C: 1.23

MONA INDUSTRIES, INC.: MONAWET Sulfosuccinate Surfactants:

Products chemically classified as mono and dialkyl sulfosuccinates and alkyl sulfosuccinates.
The generalized structures are as follows:
Monoalkyl Sulfosuccinate
Dialkyl Sulfosuccinate
Alkyl Sulfosuccinamate

MONAWETS are anionic surfactants that provide a wide variety of functional properties. They are suitable for use in a broad range of applications such as wetting agents in cosmetics, detergents, agricultural, mining and textile products and specialty emulsifiers or dispersants in water treatment, paint, ink and polymerization systems.

MB-45:
Sodium Diisobutyl Sulfosuccinate
Total Solids (%): 45
Solvent System: 55% Water
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.12
Density lbs./gallon: 9.3
pH (10%): 6.0

MB-100:
Sodium Diisobutyl Sulfosuccinate
Total Solids (%): 100
Solvent System: None
White Powder
pH (10%): 5.5

MM-80:
Sodium Dihexyl Sulfosuccinate
Total Solids (%): 80
Solvent System: 15% Water/5% Isopropanol
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.10
Density lbs./gallon: 9.2
pH (10%): 6.0

MO-70:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 70
Solvent System: 20% Water/10% Diethyleneglycol Monobutyl Ether
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.08
Density lbs/gallon: 9.0
pH (10%): 6.0

MONA INDUSTRIES, INC.: MONAWET Sulfosuccinate Surfactants (Continued):

MO-70E:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 70
Solvent System: 19% Water/11% Ethanol
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.08
Density lbs./gallon: 9.0
pH (10%): 6.0

MO-70R:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 70
Solvent System: 15% Water/15% Propylene Glycol
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.06
Density lbs./gallon: 8.8
pH (10%): 6.0

MO-75E:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 75
Solvent System: 18% Water/7% Ethanol
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.08
Density lbs./gallon: 9.0
pH (10%): 6.0

MO-84R2W
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 84
Solvent System: 16% Propylene Glycol
Viscous Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.10
Density lbs./gallon: 9.2
pH (10%): 5.5

MO-70S:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 70
Solvent System: 30% Odorless Mineral Spirits
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.08
Density lbs./gallon: 9.0
pH (10%): 5.5

MONA INDUSTRIES, INC.: MONAWET Sulfosuccinate Surfactants (Continued):

MO-85P:
Sodium Dioctyl Sulfosuccinate
Total Solids (%): 85
Solvent System: 15% Sodium Benzoate
White Powder
pH (10%): 5.5

MT-70:
Sodium Ditridecyl Sulfosuccinate
Total Solids (%): 70
Solvent System: 12% Water/18% Hexylene Glycol
Clear Liquid
APHA Color: 150
Specific Gravity @ 25C: 1.02
Density lbs./gallon: 8.5
pH (10%): 6.0

MT-80H2W:
Sodium Ditridecyl Sulfosuccinate
Total Solids (%): 80
Solvent System: 20% Hexylene Glycol
Viscous Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.02
Density lbs./gallon: 8.5
pH (10%): 5.5

DL-30:
Disodium Alkoxy Sulfosuccinate
Total Solids (%): 30
Solvent System: 70% Water
Clear Liquid
APHA Color: 150
Specific Gravity @ 25C: 1.08
Density lbs./gallon: 9.0
pH (10%): 5.5

1240:
Disodium Nonoxynol-10 Sulfosuccinate
Total Solids (%): 35
Solvent System: 65% Water
Clear Liquid
APHA Color: 25
Specific Gravity @ 25C: 1.11
Density lbs./gallon: 9.25
pH (10%): 7.0

SNO-35:
Tetrasodium Dicarboxyethyl Sulfosuccinamate
Total Solids (%): 35
Solvent System: 65% Water
Clear Liquid
Specific Gravity @ 25C: 1.14
Density lbs./gallon: 9.5
pH (10%): 7.5

MONA INDUSTRIES, INC.: MONAZOLINES:

The MONAZOLINES are 1-hydroxyethyl-2-alkylimidazolines. They are oil soluble and water dispersible, contain no solvents and are classified as cationic surface active agents.

MONAZOLINE CY:
Fatty Acid: Caprylic
Appearance @ 25C: Amber Liquid
% Imidazoline @ Mfg. (min.): 90
Molecular Weight: 212
Color-GVCS 1933 (Max.): 11
Alkali Number: 270
Acid Number: 1 max.
pH (10% dispersion): 10.5-12
Specific Gravity @ 25C: 0.99
Weight/Gallon: 8.25 Lbs.

MONAZOLINE C:
Fatty Acid: Coconut
Appearance @ 25C: Amber Liquid
% Imidazoline @ Mfg. (min.): 90
Molecular Weight: 282
Color-GVCS 1933 (Max.): 11
Alkali Number: 205
Acid Number (Max.): 1
pH (10% dispersion): 10.5-12
Specific Gravity @ 25C: 0.93
Weight/Gallon: 7.75 Lbs.

MONAZOLINE O:
Fatty Acid: Oleic
Appearance @ 25C: Amber Liquid
% Imidazoline @ Mfg. (min.): 90
Molecular Weight: 345
Color-GVCS 1933 (Max.): 9
Alkali Number: 168
Acid Number (Max.): 1
pH (10% dispersion): 10-11.5
Specific Gravity @ 25C: 0.92
Weight/Gallon: 7.66 Lbs.

MONAZOLINE T:
Fatty Acid: Tall Oil
Appearance @ 25C: Amber Liquid
% Imidazoline @ Mfg. (min.): 90
Molecular Weight: 350
Color-GVCS 1933 (Max.): 12
Alkali Number: 165
Acid Number (Max.): 1
pH (10% dispersion): 10-11.5
Specific Gravity @ 25C: 0.93
Weight/Gallon: 7.75 lbs.

MONA INDUSTRIES, INC.: PHOSPHOTERIC T-C6 Surfactant:

Features:
* Excellent hydrotroping properties at low concentrations
* Acid and alkali stable
* Stable in high electrolyte concentrations
* Low critical micelle concentration
* Compatible with anionic, cationic, nonionic and amphoteric surfactants
* Synergizes detergency with ethoxylated nonionics

PHOSPHOTERIC T-C6 is a unique, salt-free organophosphate amphoteric surfactant which is chemically stable and soluble in both strong acid and strong alkaline systems. PHOSPHOTERIC T-C6 is an excellent hydrotrope for both high foam and low foam nonionics and sulfonated anionics in high concentrations of electrolytes. In addition, it has very good surfactant properties of its own.

Typical Properties:
Clear thin amber liquid
Activity: 35%
Color (Gardner 1933 Scale): 9
pH (10% Solution): 7.0
Specific Gravity: 1.09
Weight/Gallon: 9.1 lbs.
% NaCl: 0
CMC: 0.02% Active

Chemical Description:
Substituted carboxylated cocoimidazoline organophosphate.

MTM RESEARCH CHEMICALS, INC.: Reactive Surfactants:

MTM special Reactive Surfactants overcome difficulties with conventional surfactants and provide reactive chemicals which can function not only as surfactants in the various conventional steps, but which also can be captured on the latex particles by vinyl polymerization with the main monomers being polymerized to form the latex. In this manner these reactive surfactants are prevented from subsequently migrating like conventional surfactants.

Nonylphenyl Acrylate:
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Acrylate:
(6 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Acrylate:
(10 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Acrylate:
(20 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Acrylate:
(40 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Acrylate at 70% Solids:
(40 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenyl Methacrylate:
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Methacrylate:
(6 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Methacrylate:
(10 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Methacrylate:
(20 moles Ethylene Oxide)
Nonionic Surfactant

MTM RESEARCH CHEMICALS, INC.: Reactive Surfactants (Continued):

Nonylphenoxypoly(ethyleneoxy)-Ethyl Methacrylate:
(40 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Crotonate:
(10 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Crotonate:
(20 moles Ethylene Oxide)
Nonionic Surfactant

Nonylphenoxypoly(ethyleneoxy)-Ethyl Crotonate:
(40 moles Ethylene Oxide)
Nonionic Surfactant

Bis[Nonylphenoxypoly(ethyleneoxy)-ethyl]-Fumarate:
(10 moles Ethylene Oxide)
Nonionic Surfactant

Bis[Nonylphenoxypoly(ethyleneoxy)-ethyl]-Fumarate:
(40 moles Ethylene Oxide)
Nonionic Surfactant

Phenoxypoly(ethyleneoxy) Ethyl Acrylate:
(8 moles Ethylene Oxide)
Nonionic Surfactant

Phenoxypoly(ethyleneoxy) Ethyl Methacrylate:
(8 moles Ethylene Oxide)
Nonionic Surfactant

Perfluoroheptoxypoly(propyloxy) Acrylate:
Nonionic Surfactant

Perfluoroheptoxypoly(propyloxy) Methacrylate:
Nonionic Surfactant

Sorbitol Acrylate:
Nonionic Surfactant

Sorbitol Methacrylate:
Nonionic Surfactant

Allyl Methoxy Triethylene Glycol Ether:
Nonionic Surfactant

Allyl Poly(methoxyethylene Glycol 350) Ether:
Nonionic Surfactant

MTM RESEARCH CHEMICALS, INC.: Reactive Surfactants (Continued):

Acrylic Acid Ester of Polyoxyethylene Sorbitan Monooleate:
Nonionic Surfactant

Methacrylic Acid Ester of Polyoxyethylene Sorbitan Monooleate:
Nonionic Surfactant

Crotonic Acid Ester of Polyoxyethylene Sorbitan Monooleate:
Nonionic Surfactant

Fluorinated Monomers can also function as Reactive Surfactants:
2-(N-Butylperfluoro-octanesulfamido) Ethyl Acrylate
2-(N-Ethylperfluorooctane-sulfamido) Ethyl Acrylate
2-(N-Ethylperfluorooctane-sulfamido) Ethyl Methacrylate
mono-Hexafluoroisopropyl Itaconate
mono-Hexafluoroisopropyl Maleate
Perfluoroheptoxypoly(propyloxy) Acrylate
Perfluoroheptoxypoly(propyloxy) Methacrylate
mono-Perfluorooctyl Itaconate
mono-Perfluorooctyl Maleate
mono-Trifluoroethyl Itaconate
mono-Trifluoroethyl Maleate

Monosodium Ethylsulfonate Monododecyl Maleate:
Anionic Surfactant

Sodium Allyl Sulfonate (35%):
Anionic Surfactant

Sodium Methallyl Sulfonate (35%):
Anionic Surfactant

Sodium Methallyl Sulfonate (Solid):
Anionic Surfactant

2-Sulfoethyl Methacrylate:
Anionic Surfactant

3-Sulfopropyl Acrylate, Potassium Salt (98%):
Anionic Surfactant

3-Sulfopropyl Methacrylate, Potassium Salt (98%):
Anionic Surfactant

Vinyl Sulfonate, Sodium Salt (Solid):
Anionic Surfactant

Vinyl Sulfonate, Sodium Salt, 25%:
Anionic Surfactant

Vinyl Acetoxy Trimethyl Ammonium Chloride:
Cationic Surfactant

NIACET CORP.: NIAPROOF Anionic Surfactant 4:

Sodium Tetradecyl Sulfate

NIAPROOF Anionic Surfactant 4 is an aqueous solution containing 27 percent by weight of sodium tetradecyl sulfate. This product has modified solubility properties that make it a superior penetrant in solutions containing low concentrations of dissolved solids. It is also a good wetting agent in solutions that contain between 3 and 10 percent dissolved solids. When used as a penetrant, concentrations of 0.5 to 1.0 percent of anionic 4 give rapid saturation of densely packed materials, such as baled cotton, wood, and paper. For efficient wetting action, concentrations of 0.1 to 0.5 percent should be used.

Active Ingredient: Sodium Tetradecyl Sulfate
Appearance: Essentially colorless liquid
Active Ingredient: % by Wt.: 27
Solubility in Water at 20C: Miscible
pH: 8.5
Specific Gravity at 20/20C: 1.031
Surface Tension dynes per cm: 47

Product Specification:
Sodium Tetradecyl Sulfate: 26.0-28.0%, by wgt.
Alkalinity: 0.4-1.0% by wgt. as Na_2CO_3
Iron: 0.5 ppm, Max.
Separation Test: Homogeneous from 10C-40C
Dilution Test: 90% Min., light transmission
Color: 150 Platinum-Cobalt, Max.
Odor: Mild
Suspended Matter: Substantially free

Applications:
Metal Processing Alkaline Cleaning
Electrolytic Cleaning
Pickling
Plating
Welding
Molding
Pharmaceuticals
Leather Dyeing
Specialty Products Rubless Polishes
Textile Processing Desizing
Carbonizing
Kier Boiling
Dyeing
Latex Preparations

NIACET CORP.: NIAPROOF Anionic Surfactant 08:

NIAPROOF Anionic Surfactant 08 is an aqueous solution containing 40 percent by weight of sodium 2-ethylhexyl sulfate. It is a unique wetting assistant because of its solubility, stability, and penetrating action in strong acidic and alkaline solutions containing 10 to 20 percent of dissolved electrolyte. It is chemically stable even at the boiling point of 15 percent caustic solutions. Concentrations from 0.25 to 0.75 percent NIAPROOF Anionic Surfactant 08 are suggested for initial trials.

NIAPROOF Anionic Surfactant 08 is effective in speeding the preparation of soda cellulose and in many other applications involving the penetration of concentrated acid, alkali, or salt solutions. It is one of the few anionic surface active agents stable in the presence of concentrated bleaching powder solutions. It is an excellent coupling agent for inorganic salts that are incorporated in organic solvent-water mixtures.

Typical Properties:
- Active Ingredient: Sodium 2-Ethylhexyl Sulfate
- Appearance: Essentially Colorless Liquid
- Active Ingredient, % by Wt.: 39
- Solubility in Water at 20C: Miscible
- pH: 7.3
- Specific Gravity at 20/20C: 1.109
- Surface Tension at 25C, dynes per cm: 63

Product Specifications:
- Sodium 2-Ethylhexyl Sulfate: 38.5-40.5%, by wt.
- Alkalinity: 0.4-0.8%, by wt. as Na2CO3
- Solubility in Sodium Hydroxide: Complete - no turbidity
- Iron: 0.5 ppm, Max.
- Separation Test: Homogeneous from 10C-40C
- Dilution Test: 90% Min., light transmission
- Color: 100 Platinum-Cobalt, Max.
- Odor: Mild
- Suspended Matter: Substantially free

Applications:
- Textile Processing Bleaching
- Mercerizing
- Household & Industrial Cleaners
- Wallpaper Penetrant
- Agricultural Uses
- Metal Processing
- Metal Cleaning
- Alkaline Cleaning
- Electrolytic Cleaning
- Plating
- Pickling
- Molding
- Pharmaceuticals

OLIN CORP.: Anionic Surfactants:

Polycarboxylate:

CS-1:
Active Content, nominal (% by weight): 50
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.18
Density @ 25C (lb/gal): 9.82
Viscosity (cp): 275
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Yellow to Brown

Alkyl Disulfonates:

2A1/2EP:
Active Content, nominal (% by weight): 40
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.1
Density @ 25C (lb/gal): 9.15
Viscosity (cp): 500
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Dark Brown

2A1/2EP:
Active Content, nominal (% by weight): 45
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.16
Density @ 25C (lb/gal): 9.65
Viscosity (cp): 150
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Yellow to Brown

2A1-L:
Active Content, nominal (% by weight): 40
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.1
Density @ 25C (lb/gal): 9.15
Viscosity (cp): 500
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Dark Brown

2A1-L:
Active Content, nominal (% by weight): 45
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.16
Density @ 25C (lb/gal): 9.65
Viscosity (cp): 150
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Yellow to Brown

OLIN CORP.: Anionic Surfactants (Continued):

Alkyl Disulfonates (Continued):

3B2:
Active Content, nominal (% by weight): 40
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.1
Density @ 25C (lb/gal): 9.15
Viscosity (cp): 500
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Dark Brown

3B2:
Active Content, nominal (% by weight): 45
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.16
Density @ 25C (lb/gal): 9.65
Viscosity (cp): 120
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Yellow to Brown

4C3:
Active Content, nominal (% by weight): 35
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.12
Density @ 25C (lb/gal): 9.32
Viscosity (cp): 150
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Liquid
Color: Light Yellow

WAYHIB S:
Active Content, nominal (% by weight): 70
Neutralized State: Sodium Salt
Specific Gravity, 25/25C: 1.45
Density @ 25C (lb/gal): 12.07
pH, 5% aqueous dispersion: 4.6
Solubiility in Water, 25C: Miscible
Form at Room Temperature, 20C: Liquid
Color, Gardner: Ca 1

WAYFOS Series:

A:
Active Content, nominal (% by weight): 100
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.08
Density @ 25C (lb/gal): 8.94
pH, 5% aqueous dispersion: 1.5-2.0
Solubility in Water, 25C: Insoluble
Form at Room Temperature, 20C: Liquid
Color, Gardner: 2-5

OLIN CORP.: Anionic Surfactants (Continued):

WAYFOS Series (Continued):

D-10N:
Active Content, nominal (% by weight): 100
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.10
Density @ 25C (lb/gal): 9.15
pH, 5% aqueous dispersion: 1.7-2.0
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Viscous Liq
Color, Gardner: 1-2

M-60:
Active Content, nominal (% by weight): 100
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.12
Density @ 25C (lb/gal): 9.32
pH, 5% aqueous dispersion: 2-2.5
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Viscous Liq
Color, Gardner: Light Amber

M-100:
Active Content, nominal (% by weight): 100
Neutralized State: Free Acid
Specific Gravity, 25/25C: 1.13
Density @ 25C (lb/gal): 9.40
pH, 5% aqueous dispersion: 2-2.5
Solubility in Water, 25C: Soluble
Form at Room Temperature, 20C: Viscous Liq
Color, Gardner: Light Amber

OLIN CORP.: Nonionic Surfactants:

Low-Foaming, Biodegradable:

SLF-Series:
SLF-18:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 18/64
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 229/444
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 3/37
Specific Gravity., 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 16-21/59-66

S-LF Series:
S-305LF:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 19/66
Density @ 25C (lb/gal): 8.3
Flash Point, COC (C)(F): 244/435
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 0/32
Specific Gravity, 25/25C: 1.00
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 17-23/63-73

S-405LF:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 28/82
Density @ 25C (lb/gal): 8.4
Flash Point, COC (C)(F): 277/440
Form at Room Tempertature, 20C: Liquid
Freezing Point (C)(F): 5/41
Specific Gravity, 25/25C: 1.00
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 25-31/77-88

S-505LF:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 47/117
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 8/46
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 45-49/113-120

OLIN CORP.: Nonionic Surfactants (Continued):

Moderate-Foaming, Biodegradable:

SL-Series:
SL-42:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 42/108
Density @ 25C (lb/gal): 8.3
Flash Point, COC (C)(F): 182/360
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -5/23
Hydrophile-Lipophile Balance: 13.0
Moles of Oxyethylene, average: 5
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 0.99
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 40-44/104-111

SL-62:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 62/144
Density @ 25C (lb/gal): 8.4
Flash Point, COC (C)(F): 204/400
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 1/34
Hydrophile-Lipophile Balance: 14.0
Moles of Oxyethylene, average: 8
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.01
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 60-64/140-147

SL-92:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 92/198
Density @ 25C (lb/gal); 8.6
Flash Point, COC (C)(F): 274/525
Form at Room Temperature, 20C: Slush
Freezing Point (C)(F): 20/68
Hydrophile-Lipophile Balance: 15.0
Moles of Oxyethylene, average: 12
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.04
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 90-94/194-201

OLIN CORP.: Nonionic Surfactants (Continued):

Low-Foaming:
P-Series:

P-9E:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 75/167
Density @ 25C (lb/gal): 8.8
Flash Point, COC (C)(F): 243/470
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 12/54
Solubility at Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.06
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 74-79/165-174

P-17A:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 28/82
Density @ 25C (lb/gal): 8.4
Flash Point, COC (C)(F): 241/466
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -47/-53
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.01
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 22-28/72-82

P-17B
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 31/88
Density @ 25C (lb/gal): 8.6
Flash Point, COC (C)(F): 246/475
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -3/27
Specific Gravity, 25/25C: 1.04
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 30-35/86-95

P-17BLF:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 31/88
Density @ 25C (lb/gal): 8.5
Flash Point (C)(F): 238/460
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -10/14
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 29-33/84-91

OLIN CORP.: Nonionic Surfactants (Continued):

Low-Foaming (Continued):
P-Series (Continued):

P-17BX:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 32/90
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -12/10
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 29-33/84-91

P-17D:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 59/138
Density @ 25C (lb/gal): 8.7
Flash Point, COC (C)(F): 238/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 9/48
Solubility in Water @ 25C: Soluble
Specific Gravity, 25/25C: 1.05
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 52-60/126-140

P-22A:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 20/68
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -25/-13
Solubility in Water @ 25C: Insoluble
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 17-23/63-73

P-32A:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 15/59
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 229/444
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -33/-27
Solubility in Water @ 25C: Insoluble
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50

OLIN CORP.: Nonionic Surfactants (Continued):

Low-Foaming (Continued):
P-Series (Continued):

P-32D:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 81/178
Density @ 25C (lb/gal): 8.6
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Semi-Solid
Freezing Point (C)(F): 15/59
Specific Gravity, 25/25C: 1.04
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 77-85/171-185

Low-Foaming:
E-Series:

E-17A:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 32/77
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -30/-22
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 29-35/84-95

E-17B:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 35/95
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -35/-31
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 31-39/88-102

E-25B:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 29/84
Density @ 25C (lb/gal): 8.6
Flash Point, COC (C)(F): 232/450
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -10/14
Specific Gravity, 25/25C: 1.03
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 25-33/77-91

OLIN CORP.: Nonionic Surfactants (Continued):

Moderate-Foaming:
B-Series:

B-150:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): <0/<32
Density @ 25C (lb/gal): 8.5
Flash Point, COC (C)(F): 243/469
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -20/-4
Hydrophile-Lipophile Balance: 9.5
Moles of Oxyethylene, average: 4.5
Specific Gravity, 25/25C: 1.02
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 28-34/82-93

B-200:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): <0/<32
Density @ 25C (lb/gal): 8.6
Flash Point, COC (C)(F): 260/500
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): -30/-22
Hydrophile-Lipophile Balance: 10.9
Moles of Oxyethylene, average: 6.0
Specific Gravity, 25/25C: 1.04
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 50-60/122-140

B-300:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 55/131
Density @ 25C (lb/gal): 8.8
Flash Point, COC (C)(F): 288/550
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 3/37
Hydrophile-Liopophile Balance: 12.9
Moles of Oxyethylene, average: 9.0
Specific Gravity, 25/25C: 1.06
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 52-58/126-136

OLIN CORP.: Nonionic Surfactants (Continued):

Moderate-Foaming (Continiued):
B-Series (Continued):

B-315:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 59/138
Density @ 25C (lb/gal): 8.8
Flash Point, COC (C)(F): 282/540
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 5/41
Hydrophile-Lipophile Balance: 13.1
Moles of Oxyethylene, average: 9.5
Specific Gravity, 25/25C: 1.06
Appearance: Clear
Color, max (APHA): 50
Cloud Point, 1% aqueous solution (C)(F): 57-60/134-140

B-350:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 72/162
Density @ 25C (lb/gal): 8.8
Flash Point, COC (C)(F): 288/550
Form at Room Temperature, 20C: Liquid
Freezing Point (C)(F): 10/50
Hydrophile-Lipophile Balance: 13.5
Moles of Oxyethylene, average: 10.5
Specific Gravity, 25/25C: 1.06
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 70-74/158-165

B-500:
Active Content, nominal (% by weight): 100
Cloud Point, 1% aqueous solution (C)(F): 97/207
Density @ 25C (lb/gal): 9.0
Flash Point, COC (C)(F): 288/550
Form at Room Temperature, 20C: Slush
Freezing Point (C)(F): 22/72
Hydrophile-Lipophile Balance: 15.0
Moles of Oxyethylene, average: 15.0
Specific Gravity, 25/25C: 1.07
Appearance: Clear
Color, max (APHA): 100
Cloud Point, 1% aqueous solution (C)(F): 95-100/203-212

OLIN CORP.: Surfactants: Anionics:

POLY-TERGENT CS-1:
First of a family of alkoxylated linear alcohol carboxylic acid adduct sodium salts. These are low-foaming surfactants with moderately high caustic solubility. Their excellent sequestering ability makes them unique among surfactants and truly multifunctional in character. Applications include laundry detergents, tub and tile cleaners, metal cleaners and alkaline hard surface cleaners. These surfactants can eliminate or minimize the need for builders in a formulation.

POLY-TERGENT 2A1, 2A1-L, 2EP, 3B2, 4C3:
The members of this series are disulfonated alkylaryls, free acid or sodium salt. They demonstrate outstanding compatibility with caustic, acids, hypochlorite and various electrolytes. All are water soluble. They are used in alkaline and acid cleaners, liquid autodish products and various hard surface cleaners. They are also used for acid dye leveling and for emulsion polymerization.

WAYFOS D-10N, M-60, M-100:
These aromatic phosphate esters in free acid form find application in nearly all fields that use surfactants. They are especially suited for use as emulsifiers for polymers, pesticides, cleaning fluids and other compounds.

WAYFOS A:
As an aliphatic phosphate ester in free acid form (a mixture of mono- and diester), this member of the WAYFOS family can serve as a dyeing assistant, developing agent, wetting agent in peroxide or hypochlorite bleach, corrosion inhibitor and paper deinker.

WAYHIB S:
This product is a triethanolamine phosphate ester. It is a slightly yellow liquid, relatively thick surfactant which is used in high caustic solutions.

OLIN CORP.: Surfactants: Nonionics:

POLY-TERGENT SLF Series (SLF-18):
A patented biodegradable, alkoxylated linear alcohol designed for specific low-foaming applications. POLY-TERGENT SLF-18 gives exceptional rinsing when formulated into a machine dishwashing compound without benefit of an added rinse aid. It is especially effective in removing protein-type soils.

POLY-TERGENT S-LF Series (S-305LF, S-405LF, S-505LF):
This wide-spectrum, low-foaming series of biodegradable alkoxylated linear alcohols finds use in such diverse areas as rinse aids and metal cleaning baths, and as foam depressants in hard surface cleaners.

POLY-TERGENT SL-Series (SL-42, SL-62, SL-92):
This line of moderate-foaming, biodegradable alkoxylated linear aliphatic alcohols is available with a broad range of cloud points. Members of this series remain liquid at room temperature and do not tend to form surfactant/water gels. They are used in various industrial and institutional applications, such as laundry and hard surface cleaning, where speed of solution and excellent emulsification are important.

POLY-TERGENT P-Series (P-9E, P-17A, P-17B, P-17BLF, P-17BX, P-17D, P-22A, P-32A, P-32D):
These low-foaming ethoxylated polyoxypropylene glycols of different molecular weights are designed to meet a variety of low-foam conditions. Members of this series find use as defoamers, dedusters and emulsifiers. They are used in rinse aids, machine dishwashing and laundry detergents as suds control agents.

POLY-TERGENT E-Series (E-17A, E-17B, E-25B):
This series of low-foaming, propoxylated polyoxyethylene glycols is available in three molecular weights to meet a variety of low foam conditions. Members of this series are good wetters and exceptional defoamers. They are used in rinse aids and in machine dishwashing and laundry detergents as suds control agents.

POLY-TERGENT B-Series (B-150, B-200, B-300, B-315, B-350, B-500):
This series of moderate-foaming ethoxylated nonylphenols is available in a range of oxyethylene content. This is one of the more widely used and best known classes of surfactants. Using members of the series, either singly or in combination, the formulator can develop a variety of products.

M.S. PAISNER, INC.: ALROSPERSE 100 Solvent Soluble Surfactant:

ALROSPERSE 100 is a blend of nonionic and cationic agents possessing unusual surface activity in non-aqueous media. ALROSPERSE 100 is soluble in all organic solvents but dispersible in water. Though it does not lower the surface tension of organic solvents, it is a powerful interfacial tension depressant, dispersant and deflocculant, exhibiting such effects at concentrations as low as 10 ppm. ALROSPERSE 100 is also a solubilizing agent and emulsifier. It is completely compatible with nonionic, cationic and anionic agents in non-aqueous media.

ALROSPERSE 100 adsorbs strongly onto metallic surfaces, glass, plastics and textile fibres, displacing adsorbed moisture and improving the wetting of such surfaces by the solvent. It imparts a high degree of corrosion resistance to ferrous metals, softens and imparts anti-static characteristics to textile fibres.

Properties:

Specific Gravity (20C): 0.96
Freezing Point: -10C
Viscosity (25C): 50 cps
Flash Point: Above 115C

Applications:

Metal Processing:

ALROSPERSE 100 is recommended for solvent cleaning of ferrous metals, copper and copper alloys, aluminum, zinc, magnesium and other non-ferrous metals. It is very effective in removing buffing compounds, waxes, drawing compounds, lubricants and other soils from wire, tubing and castings.

Petroleum Products:

ALROSPERSE 100 may be incorporated in high detergency lubricating oil at 0.1-0.5%. It is very effective as a sludge dispersant in distillate or cracked fuel oil at 0.01%, burns without leaving a residue.

Drycleaning:

ALROSPERSE 100 is an outstanding drycleaning detergent for textiles in chlorinated or hydrocarbon solvents.

Spotting Compounds:

ALROSPERSE 100 may be used in the formulation of spotting compounds, lipstick removers, upholstery cleaners, etc.

Leather Cleaning:

ALROSPERSE 100 at 0.25-0.75% in Stoddard solvent is recommended for cleaning leather and suede.

Emulsions:

ALROSPERSE 100 is an exceptionally effective water-in-oil emulsifier for use both with aliphatic hydrocarbons and chlorinated solvents.

NEOSOLVE Wetting Agents:

Adding small quantities of NEOSOLVE AD-1 ro water will enhance penetration and adhesion. The surfcae of all asbestos-containing products is simply sprayed with this solution before and during the cutting and removal operation.

PILOT CHEMICAL CO.: CALAMIDES:

CALAMIDE C:
Coconut Diethanolamide Super Amide 100%
Liquid
Foam stabilizer and emulsifier in liquid dishwashing compounds, bubble baths, shampoos and all purpose cleaners. Used to increase viscosity and impart mildness.

CALAMIDE CW-100:
Coconut Diethanolamide 100%
Liquid
A 2:1 amide used for modifying viscosity and stabilizing foam; in wool washing solutions, liquid detergents, janitorial cleaners.

CALAMIDE O:
Modified Coco-Oleic Diethanolamide Super Amide, 100%
Liquid
Effective in janitorial cleaners, rust preventives, lubricants, wetting, foaming, cleaning solutions. More oil soluble than CALAMIDE C.

CALIMULSE Emulsifiers:

CALIMULSE PRS:
Isopropylamine Linear Alkyl Benzene Sulfonate 90%
Liquid
Emulsifier for agricultural sprays, dry cleaner soaps, oil emulsifiers, solubilizing. Biodegradable.

CALIMULSE EM-99:
Alkyl Benzene Sulfonic Acid (Hard) 97%
Thick Liquid
For neutralization to produce products such as agricultural emulsifiers, emulsion polymer assistants and other products which do not enter sewage streams. Non-biodegradable.

CALIMULSE EM-30:
Sodium Alkyl Benzene Sulfonate (Hard) 30%
Paste
A non-biodegradable sulfonate used for products or processes which do not enter sewage streams, such as emulsion polymers.

PILOT CHEMICAL CO.: CALFAX Disulfonates:

CALFAX DB-45:
Disulfonated Alkyl Diphenyl Oxide 45%
Pale Yellow-Brown Liquid
Very stable, non-biodegradable, aqueous surfactant solution and hydrotrope with high solubility in acids and bleaches. For die bath levelers, heavy duty cleaners, latex emulsifiers, ag chemicals.

CALFAX 10L-45:
Disulfonated Alkyl Diphenyl Oxide 45%
Pale Yellow-Brown Liquid
Linear, biodegradable surfactant and hydrotrope with better solubility, especially in stronger acids. Preferred for phenolic germicides and bottle washing concentrates. No halogenated solvents used in CALFAX.

CALSUDS Concentrates:

CALSUDS 81:
Concentrated blend of Anionic and Nonionic Detergents, 60%
Liquid
A completely balanced formula for use in liquid dishwashing compounds, car wash solutions, hard surface cleaning, foaming and wetting solutions.

CALSUDS A:
Concentrated blend of Anionic Detergents and Amide, 50%
Liquid
A base for use "as is", diluted or compounded with other detergents for cleaning, foaming and wetting.

CALSUDS CD-6:
Modified Coconut Diethanolamide 100%
Liquid
Viscosity modifier, foam stabilizer, emulsifier. A dilutable base for high viscosity systems.

PILOT CHEMICAL CO.: CALFOAM Alcohol & Ether Sulfates:

CALFOAM ES-30:
Sodium Lauryl Ether Sulfate 30%
Liquid
A high quality flash foamer for shampoos, bubble baths, wool washing solutions.

CALFOAM SEL-60:
Sodium Lauryl Ether Sulfate 60%
Liquid
For use in bubble baths, shampoos, car washing solutions, liquid detergents, general all-purpose cleaning formulations and wetting compounds.

CALFOAM NEL-60:
Ammonium Lauryl Ether Sulfate 60%
Liquid
For use in bubble baths, shampoos, car washing solutions, liquid detergents, all-purpose cleaning and wetting.

CALFOAM SLS-30:
Sodium Lauryl Sulfate 30%
Liquid
Extremely mild detergent for shampoos, bubble bath formiulations, rug cleaner formulations, cosmetic emulsifiers.

CALFOAM NLS-30:
Ammonium Lauryl Sulfate 30%
Liquid
Mild liquid base for neutral pH shampoos, bubble baths, rug cleaner formulations, cosmetic emulsifiers.

CALFOAM AAL:
Concentrated Anionic Detergent/Amide blend 45%
Liquid
High performance detergent for dishwashing and all purpose cleaning.

CALFOAM LLD:
Blend of Anionic Detergents and Amide 42%
Liquid
Light duty liquid for washing dishes and fine hand washables.

PILOT CHEMICAL CO.: CALSOFT Sulfonates:

CALSOFT LAS-99:
Linear Alkyl Benzene Sulfonic Acid 97%
Thick Liquid
Biodegradable, high active acid for neutralization to high purity sulfonates for hard surface cleaning, stripping, wetting, foaming.

CALSOFT F-90:
Sodium Linear Alkyl Benzene Sulfonate 90%
Flake
High active flake used for dry and wet compounding of all purpose cleaners, grease removers, hard surface cleaners, heavy duty laundry powders, scouring aids, emulsion polymers. Biodegradable.

CALSOFT L-60:
Sodium Linear Alkyl Benzene Sulfonate 60%
Paste
Used for drying to high active flake, for use in all purpose cleaners, liquid dishwashing formulas, rug shampoos, fruit and vegetable washing, emulsion polymerization. Biodegradable.

CALSOFT L-40:
Sodium Linear Alkyl Benzene Sulfonate 40%
Liquid
A clear, homogenous liquid used for compounding liquid dishwashing products, all purpose cleaners and hard surface cleaners and foamers. Biodegradable.

CALSOFT T-60:
Triethanolamine Linear Alkyl Benzene Sulfonate 60%
Liquid
For cosmetic preparations, shampoos, liquid detergents, wool wash formulations, where mildness and high purity are needed. Leaves no harsh residue. Biodegradable.

CALSOFT AOS-40:
Sodium Alpha Olefin Liquid 40%
Liquid
For hand soaps, shampoos and hard surface cleaners.

PILOT CHEMICAL CO.: PILOT Hydrotropes:

PILOT SXS-96:
Sodium Xylene Sulfonate 95%
Powder
A hydrotrope, a solubilizer used to lower cloud point and viscosity. Especially good for dry compounding.

PILOT SXS-40:
Sodium Xylene Sulfonate 40%
Liquid
A hydrotrope, used as a dispersing aid and as a solubilizer for lowering the cloud point and viscosity of liquid detergent solutions.

ARISTONATE Petroleum Sulfonates:

ARISTONATE L:
Low molecular weight Petroleum Sulfonate 60%-62%
Thick Liquid
Emulsifier for use in textile oils, dry cleaning solvents, degreasers, soluble oils.

ARISTONATE M:
Medium molecular weight Petroleum Sulfonate 60%-62%
Thick Liquid
Emulsifier for use in metal working fluids, degreasers, mold release agents, frother/collector in ore flotation.

ARISTONATE H:
High molecular weight Petroleum Sulfonate 60%-62%
Thick Liquid
Corrosion preventive, collector in ore flotation; metal working fluid emulsifier.

ARISTOL Sulfonatable Oils:

ARISTOL A:
60% mono substituted C20-24 Benzene. Cryoscopic molecular weight (ASTM D2224)-500. Typical pour point: 65F.

ARISTOL B:
80% mono substituted C16-18 Benzene. Cryoscopic molecular weight (ASTM D2224)-360. Typical pour point: 15F.

ARISTOL D:
50% mono substituted C20-24 Benzene. Cryscopic molecular weight (ASTM D2224)-450. Typical pour point: 15F.

ARISTOL E:
90% di substituted C12 Benzene. Cryoscopic molecular weight (ASTM D2224)-420. Typical pour point: -60F.

PPG/MAZER CHEMICALS: AVANEL S--Sodium Linear Alkyl Polyether Sulfonates:

AVANEL S surfactants are presently available in varying polyoxyethylene chain lengtths. All of the products are approximately 35% solids and are readily biodegradable. The products are almost colorless, odorless, and are very mild to the skin.

AVANEL:

S-30:
Form @ 25C: White Paste
Average Molecular Weight: 420
Specific Gravity: 1.06
Viscosity @ 25C in cps: 360
Solidification Point: 25
Flashpoint F: 130

S-70:
Form @ 25C: Clear Liquid
Average Molecular Weight: 600
Specific Gravity: 1.07
Viscosity @ 25C in cps: 270
Solidification Point: -1
Flashpoint F: 200

S-74:
Form @ 25C: Clear Liquid
Average Molecular Weight: 260
Specific Gravity: 1.10
Viscosity @ 25C in cps: 30
Solidification Point: -8
Flashpoint F: 200

S-90:
Form @ 25C: Clear Liquid
Average Molecular Weight: 690
Specific Gravity: 1.07
Viscosity @ 25C in cps: 60
Solidification Point: -1
Flashpoint F: 200

S-150:
Form @ 25C: Clear Liquid
Average Molecular Weight: 950
Specific Gravity: 1.07
Viscosity @ 25C in cps: 70
Solidification Point: -1
Flashpoint F: 200

PPG/MAZER CHEMICALS: MACOL Block Polyols:

MACOL Block Polyols are nonionic surfactants prepared by the sequential addition of two or more alkylene oxides to a low molecular weight organic compound. Furthermore, surfactant molecules are usually modified with relation to their hydrophilic portion.

1:
Form @ 25C: Liquid
Viscosity in cps: 335
Specific Gravity: 1.01
Cloud Point 1% Aqueous Solution C: 24
Surface Tension Dynes/Cm 0.1% Solution @ 25C: Insoluble
Pour Point C: -28
Average Molecular Weight: 2,000

2:
Form @ 25C: Liquid
Viscosity in cps: 415
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 32
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 42.8
Pour Point C: -4
Average Molecular Weight: 2,500

2D:
Form @ 25C: Liquid
Viscosity in cps: 400
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 35
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 43.0
Pour Point C: -1
Average Molecular Weight: 2,360

2LF:
Form @ 25C: Liquid
Viscosity in cps: 400
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 28
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 41.2
Pour Point C: -7
Average Molecular Weight: 2,300

4:
Form @ 25C: Liquid
Viscosity in cps: 800
Specific Gravity: 1.05
Cloud Point 1% Aqueous Solution C: 60
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 43.2
Pour Point C: 16
Average Molecular Weight: 2,900

PPG/MAZER CHEMICALS: MACOL Block Polyols (Continued):

8:
Form @ 25C: Flake
Viscosity in cps: 1100
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: >100
Surface Tension Dynes/Cm @ 0.1% Solution: 50.3
Pour Point C: 52
Average Molecular Weight: 8,500

10:
Form @ 25C: Liquid
Viscosity in cps: 660
Specific Gravity: 1.04
Cloud Point 1% Aqueous Solution C: 32
Surface Tension Dynes/Cm @ 0.1% Solution: 40.6
Pour Point C: -5
Average Molecular Weight: 3,200

15:
Form @ 25C: Liquid
Viscosity in cps: 420
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: 69
Surface Tension Dynes/Cm @ 0.1% Solution: 50.9
Pour Point C: 15
Average Molecular Weight: 2,000

16:
Form @ 25C: Flake
Viscosity in cps: 400
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: 95
Surface Tension Dynes/Cm @ 0.1% Solution: 54.1
Pour Point C: 46
Average Molecular Weight: 4,600

18:
Form @ 25C: Liquid
Viscosity in cps: 300
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 32
Surface Tension Dynes/Cm @ 0.1% Solution: 33.1
Pour Point C: -25
Average Molecular Weight: 1,900

19:
Form @ 25C: Liquid
Viscosity in cps: 425
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 36
Surface Tension Dynes/Cm @ 0.1% Solution: 42.0
Pour Point C: -25
Average Molecular Weight: 2,200

PPG/MAZER CHEMICALS: MACOL Block Polyols (Continued):

22:
Form @ 25C: Liquid
Viscosity in cps: 520
Specific Gravity: 1.01
Cloud Point 1% Aqueous Solution C: 17
Surface Tension Dynes/Cm @ 0.1% Solution @ 25C: Insoluble
Pour Point C: -10
Average Moleccular Weight: 2,000

23:
Form @ 25C: Paste
Viscosity in cps: 350
Specific Gravity: 1.01
Cloud Point 1% Aqueous Solution C: 90
Surface Tension Dynes/Cm @ 0.1% Solution @ 25C: 34.1
Pour Point C: 31
Average Molecular Weight: 5,600

27:
Form @ 25C: Flake
Viscosity in cps: 3100
Specific Gravity: 1.05
Cloud Point 1% Aqueous Solution C: >100
Surface Tension Dynes/Cm @ 0.1% Solution @ 25C: 40.7
Pour Point C: 56
Average Molecular Weight: 12,500

31:
Form @ 25C: Liquid
Viscosity in cps: 950
Specific Gravity: 1.05
Cloud Point 1% Aqueous Solution C: 40
Surface Tension Dynes/Cm @ 1% Solution @ 25C: Insoluble
Pour Point C: 24
Average Molecular Weight: 3,300

32:
Form @ 25C: Liquid
Viscosity in cps: 450
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 26
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 36.3
Pour Point C: -28
Average Molecular Weight: 2,700

PPG/MAZER CHEMICALS: MACOL Block Polyols (Continued):

33:
Form @ 25C: Liquid
Viscosity in cps: 650
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 25
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 34.1
Pour Point C: -25
Average Molecular Weight: 3,200

34:
Form @ 25C: Paste
Viscosity in cps: 1100
Specific Gravity: 1.05
Cloud Point 1% Aqueous Solution C: 40
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 41.0
Pour Point C: 25
Average Molecular Weight: 3,600

35:
Form @ 25C: Liquid
Viscosity in cps: 375
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: 78
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 48.8
Pour Point C: 7
Average Molecular Weight: 1,900

40:
Form @ 25C: Liquid
Viscosity in cps: 700
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 29
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 37.5
Pour Point C: -5
Average Molecular Weight: 3,100

42:
Form @ 25C: Liquid
Viscosity in cps: 270
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 37
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 46.5
Pour Point C: -26
Average Molecular Weight: 1,600

PPG/MAZER CHEMICALS: MACOL Block Polyols (Continued):

44:
Form @ 25C: Liquid
Viscosity in Cps: 450
Specific Gravity: 1.05
Cloud Point 1% Aqueous Solution C: 68
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 45.4
Pour Point C: 15
Average Molecular Weight: 2,200

46:
Form @ 25C: Liquid
Viscosity in Cps: 180
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 36
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 47.1
Pour Point C: -32
Average Molecular Weight: 1,100

72:
Form @ 25C: Liquid
Viscosity in Cps: 500
Specific Gravity: 1.03
Cloud Point 1% Aqueous Solution C: 25
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 39.0
Pour Point C: -7
Average Molecular Weight: 2,750

77:
Form @ 25C: Flake
Viscosity in Cps: 475
Specific Gravity: 1.04
Cloud Point 1% Aqueous Solution C: >100
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 47.0
Pour Point C: 48
Average Molecular Weight: 6,600

85:
Form @ 25C: Paste
Viscosity in Cps: 320
Specific Gravity: 1.04
Cloud Point 1% Aqueous Solution C: 85
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 42.5
Pour Point C: 29
Average Molecular Weight: 4,600

PPG/MAZER CHEMICALS: MACOL Block Polyols (Continued):

88:
Form @ 25C: Flake
Viscosity in Cps: 2300
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: >100
Surface Tension Dynes/Cm 0.1% Solution: 48.5
Pour Point C: 54
Average Molecular Weight: 11,500

101:
Form @ 25C: Liquid
Viscosity in Cps: 800
Specific Gravity: 1.02
Cloud Point 1% Aqueous Solution C: 15
Pour Point C: -23
Average Molecular Weight: 3,800

108:
Form @ 25C: Flake
Viscosity in Cps: 3000
Specific Gravity: 1.06
Cloud Point 1% Aqueous Solution C: >100
Surface Tension Dynes/Cm 0.1% Solution: 41.2
Pour Point C: 57
Average Molecular Weight: 14,600

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants:

The MACOL, nonionic-type surface active agents, show hydrophilic (water loving) properties through the presence of ether linkages that are capable of hydrogen bonding with water. The ether linkages are manufactured by polymerizing ethylene oxide on a hydrophobic (oil soluble) base. As the number of ether linkages increase on the hydrophobic base, the capability for hydrogen bonding with water increases, giving greater water solubility. The number of moles of ethylene oxide on the hydrophobic base is expressed numerically at the end of the product name.

MACOL Fatty Alcohol Esters:

CA-2:
Form @ 25C: Solid
Melt Point C: 38
Iodine Value: 0.5
Hydroxyl Value: 170
HLB Value: 4.9
CTFA Name: Ceteth-2

CA-10:
Form @ 25C: Solid
Melt Point C: 41
Iodine Value: 0.5
Hydroxyl Value: 95
HLB Value: 12.3
CTFA Name: Ceteth-10

CSA-2:
Form @ 25C: Solid
Melt Point C: 39
Iodine Value: 0.5
Hydroxyl Value: 160
HLB Value: 4.9
CTFA Name: Ceteareth-2

CSA-4:
Form @ 25C: Solid
Melt Point C: 38
Iodine Value: 0.5
Hydroxyl Value: 128
HLB Value: 7.9
CTFA Name: Ceteareth-4

CSA-10:
Form @ 25C: Solid
Melt Point C: 38
Iodine Value: 0.5
Hydroxyl Value: 80
HLB Value: 12.3
CTFA Name: Ceteareth-10

PPG/MAZER CHEMICALS: MACOL Nonionic Surfacants (Continued):

CSA-20:
Form @ 25C: Solid
Melt Point C: 40
Iodine Value: 0.5
Hydroxyl Value: 52
HLB Value: 15.2
CTFA Name: Ceteareth-20

CSA-40:
Form @ 25C: Solid
Melt Point C: 40
Iodine Value: 0.5
Hydroxyl Value: 30
HLB Value: 16.8
CTFA Name: Ceteareth-40

LA-4:
Form @ 25C: Liquid
Melt Point C: 12
Iodine Value: 0.1
Hydroxyl Value: 155
HLB Value: 9.5
CTFA Name: Laureth-4

LA-790*
Form @ 25C: Liquid
Melt Point C: 5
Iodine Value: 0.1
HLB Value: 10.8
CTFA Name: Laureth-7
* 90% active in water.

LA-9:
Form @ 25C: Paste
Melt Point C: 26
Iodine Value: 0.1
Hydroxyl Value: 95
HLB Value: 13.3
CTFA Name: Laureth-9

LA-12:
Form @ 25C: Solid
Melt Point C: 30
Iodine Value: 0.1
Hydroxyl Value: 75
HLB Value: 14.6
CTFA Name: Laureth-12

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

LA-23:
Form @ 25C: 40
Melt Point C: 40
Iodine Value: 0.1
Hydroxyl Value: 47
HLB Value: 16.4
CTFA Name: Laureth-23

OA-2:
Form @ 25C: Liquid
Melt Point C: <0
Iodine Value: 70
Hydroxyl Value: 170
HLB Value: 3.8
CTFA Name: Oleth-2

OA-4:
Form @ 25C: Liquid
Melt Point C: <0
Iodine Value: 53
Hydroxyl Value: 128
HLB Value: 8.0
CTFA Name: Oleth-4

OA-5:
Form @ 25C: Liquid
Melt Point C: 5
Iodine Value: 53
Hydroxyl Value: 125
HLB Value: 8.2
CTFA Name: Oleth-5

OA-10:
Form @ 25C: Liquid
Melt Point C: 16
Iodine Value: 33
Hydroxyl Value: 80
HLB Value: 12.5
CTFA Name: Oleth-10

OA-20:
Form @ 25C: Solid
Melt Point C: 30
Iodine Value: 23
Hydroxyl Value: 58
HLB Value: 14.7
CTFA Name: Oleth-20

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

SA-2:
Form @ 25C: Solid
Melt Point C: 43
Iodine Value: 0.1
Hydroxyl Value: 158
HLB Value: 4.7
CTFA Name: Steareth-2

SA-5:
Form @ 25C: Solid
Melt Point C: 41
Iodine Value: 0.1
Hydroxyl Value: 116
HLB Value: 9.0
CTFA Name: Steareth-5

SA-10:
Form @ 25C: Solid
Melt Point C: 40
Iodine Value: 0.1
Hydroxyl Value: 80
HLB Value: 12.3
CTFA Name: Steareth-10

SA-15:
Form @ 25C: Solid
Melt Point C: 38
Iodine Value: 0.1
Hydroxyl Value: 64
HLB Value: 14.3
CTFA Name: Steareth-15

SA-20:
Form @ 25C: Solid
Melt Point C: 39
Iodine Value: 0.1
Hydroxyl Value: 52
HLB Value: 15.4
CTFA Name: Steareth-20

SA-40:
Form @ 25C: Solid
Melt Point C: 40
Iodine Value: 0.1
Hydroxyl Value: 32
HLB Value: 17.4
CTFA Name: Steareth-40

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants:

DNP-5:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 385
Specific Gravity @ 25C: .97
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -10
HLB Value: 8.2

DNP-10:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 390
Specific Gravity @ 25C: 1.00
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: 0
HLB Value: 11.3

DNP-15:
Form @ 25C: Paste
Specific Gravity @ 25C: 1.02
Cloud Point 1% Aqueous Solution C: 50
Pour Point C: 30
HLB Value: 13.0

DNP-150:
Form @ 25C: Flake
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: 55
HLB Value: 19.0

NP-4
Form @ 25C: Liquid
Viscosity @ 25C in cps: 350
Specific Gravity @ 25C: 1.02
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -27
HLB Value: 8.9

NP-5:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 320
Specific Gravity @ 25C: 1.03
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -27
HLB Value: 10.0

NP-6:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 300
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -28
HLB Value: 10.9

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

NP-8:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 260
Specific Gravity @ 25C: 1.05
Cloud Point 1% Aqueous Solution C: 25
Pour Point C: 5
HLB Value: 12.3

NP-9.5:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 275
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 55
Pour Point C: 5
HLB Value: 12.9

NP-11:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 275
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 74
Pour Point C: 14
HLB Value: 13.7

NP-12:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 325
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 81
Pour Point C: 17
HLB Value: 14.0

NP-15:
Form @ 25C: Paste
Specific Gravity @ 25C: 1.07
Cloud Point 1% Aqueous Solution C: 65*
Pour Point C: 26
HLB Value: 15.0

NP-20:
Form @ 25C: Solid
Specific Gravity @ 25C: 1.08
Cloud Point 1% Aqueous Solution C: 70*
Pour Point C: 30
HLB Value: 16.0

NP-20(70):
Form @ 25C: Liquid
Viscosity @ 25C in cps: 900
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 70*
Pour Point C: 0
HLB Value: 16.0

* 1% in 10% NaCl Solution

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

NP-30(70):
Form @ 25C: Liquid
Viscosity @ 25C in cps: 1100
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 75*
Pour Point C: 4
HLB Value: 17.2
* 1% in 10% NaCl Solution

NP-100:
Form @ 25C: Solid
Specific Gravity @ 25C: 1.11
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: 54
HLB Value: 19.0

OP-3:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 350
Specific Gravity @ 25C: 1.02
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -23
HLB Value: 7.8

OP-5:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 300
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -26
HLB Value: 10.4

OP-8:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 275
Specific Gravity @ 25C: 1.05
Cloud Point 1% Aqueous Solution C: 23
Pour Point C: -5
HLB Value: 12.3

OP-10:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 250
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: 65
Pour Point C: 8
HLB Value: 13.4

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

OP-12:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 335
Specific Gravity @ 25C: 1.07
Cloud Point 1% Aqueous Solution C: 88
Pour Point C: 16
HLB Value: 14.6

OP-16(75):
Form @ 25C: Liquid
Viscosity @ 25C in cps: 540
Specific Gravity @ 25C: 1.08
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: 13
HLB Value: 15.8

OP-30(70):
Form @ 25C: Liquid
Viscosity @ 25C in cps: 470
Specific Gravity @ 25C: 1.10
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: 2
HLB Value: 17.3

OP-40(70):
Form @ 25C: Liquid
Viscosity @ 25C in cps: 490
Specific Gravity @ 25C: 1.10
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: -4
HLB Value: 17.9

TD-3:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 17
Specific Gravity @ 25C: .96
Cloud Point 1% Aqueous Solution C: Insoluble
Pour Point C: -32
HLB Value: 8.0

TD-8:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 50
Specific Gravity @ 25C: 1.02
Cloud Point 1% Aqueous Solution C: 55
Pour Point C: 8
HLB Value: 12.4

PPG/MAZER CHEMICALS: MACOL Nonionic Surfactants (Continued):

TD-10:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 60
Specific Gravity @ 25C: 1.02
Cloud Point 1% Aqueous Solution C: 76
Pour Point C: 10
HLB Value: 13.6

TD-12:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 60
Specific Gravity @ 25C: 1.03
Cloud Point 1% Aqueous Solution C: 91
Pour Point C: 14
HLB Value: 14.1

TD-100:
Form @ 25C: Solid
Specific Gravity @ 25C: 1.06
Cloud Point 1% Aqueous Solution C: >100
Pour Point C: 55
HLB Value: 18.9

TD-610:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 40
Specific Gravity @ 25C: .98
Cloud Point 1% Aqueous Solution C: 41
Pour Point C: 6
HLB Value: 11.3

PPG/MAZER CHEMICALS: MACOL Rinse Aids:

MACOL Rinse Aids are 100% active biodegradable water soluble surfactants. Members of this series are excellent detergents, wetting agents and solubilizers.

21:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 70
Specific Gravity @ 25C: .97
Cloud Point 1% Aqueous Solution, C: 24
Surface Tension Dynes/cm 0.1% Solution @ 25C: 30.3
Pour Point C: -27
Average Molecular Weight: 820

24:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 80
Specific Gravity @ 25C: .99
Cloud Point 1% Aqueous Solution, C: 45
Surface Tension Dynes/cm 0.1% Solution @ 25C: 33.0
Pour Point C: 8
Average Molecular Weight: 800

25:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 100
Specific Gravity @ 25C: 1.00
Cloud Point 1% Aqueous Solution, C: 59
Surface Tension Dynes/cm 0.1% Solution @ 25C: 34.3
Pour Point C: -20
Average Molecular Weight: 1,000

26:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 200
Specific Gravity @ 25C: .98
Cloud Point 1% Aqueous Solution, C: 24
Surface Tension Dynes/cm 0.1% Solution @ 25C: 30.5
Pour Point C: -6
Average Molecular Weight: 850

30:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 65
Specific Gravity @ 25C: .97
Cloud Point 1% Aqueous Solution, C: 30
Surface Tension Dynes/cm 0.1% Solution @ 25C: 30.7
Pour Point C: 10
Average Molecular Weight: 600

PPG/MAZER CHEMICALS: MACOL Rinse Aids (Continued):

45:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 180
Specific Gravity @ 25C: .98
Cloud Point 1% Aqueous Solution, C: 20
Surface Tension Dynes/cm 0.1% Solution @ 25C: 31.0
Pour Point C: -18
Average Molecular Weight: 1,100

LF-110:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 140
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution, C: 12
Surface Tension Dynes/cm 0.1% Solution @ 25C: 32.8
Pour Point C: -9
Average Molecular Weight: 1,100

LF-111:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 100
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution, C: 12
Surface Tension Dynes/cm 0.1% Solution @ 25C: 32.8
Pour Point C: -12
Average Molecular Weight: 1,000

LF-115:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 100
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution, C: 15
Surface Tension Dynes/cm 0.1% Solution @ 25C: 32.8
Pour Point C: -12
Average Molecular Weight: 1,000

LF-120:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 140
Specific Gravity @ 25C: 1.04
Cloud Point 1% Aqueous Solution, C: 18
Surface Tension Dynes/cm 0.1% Solution @ 25C: 32.8
Pour Point C: -9
Average Molecular Weight: 1,000

LF-125:
Form @ 25C: Liquid
Viscosity @ 25C in cps: 120
Specific Gravity @ 25C: 1.01
Cloud Point 1% Aqueous Solution, C: 40
Surface Tension Dynes/cm 0.1% Solution @ 25C: -16
Average Molecular Weight: 540

PPG/MAZER CHEMICALS: MAFO Amphoteric Surfactants:

MAFO Amphoteric Surfactants act as an anion or cation depending on the pH of the system. This makes them compatible with either strong alkali or acid systems and with commonly used surfactants.

13:
Percent Solids: 70
Diluent: water
Specific Gravity @ 25C: 1.015
Potassium Salt of a Complex Amine Carboxylate

13 MOD 1:
Percent Solids: 90
Diluent: water
Specific Gravity @ 25C: 1.005
Potassium Salt of a Complex Amine Carboxylate

C:
Percent Solids: 35
Diluent: water
Specific Gravity @ 25C: 1.010
Cocamidopropyl Betaine

CAB:
Percent Solids: 35
Diluent: water
Specific Gravity @ 25C: 1.010
Cocamidopropyl Betaine

CAB SP:
Percent Solids: 43
Diluent: water
Specific Gravity @ 25C: 1.050
Cocamidopropyl Betaine

CAB 425:
Percent Solids: 42.5
Diluent: water
Specific Gravity @ 25C: 1.040
Cocamidopropyl Betaine

CB 40:
Percent Solids: 40
Diluent: water
Specific Gravity @ 25C: 1.040
Coco Betaine

CFA 35:
Percent Solids: 35
Diluent: water
Specific Gravity @ 25C: 1.040
Cocamidopropyl Betaine

PPG/MAZER CHEMICALS: MAFO Amphoteric Surfactants (Continued):

CSB:
Percent Solids: 35
Diluent: water
Specific Gravity @ 25C: 1.094
Cocamidopropyl Hydroxysultaine

CSB 50:
Percent Solids: 50
Diluent: water
Specific Gravity @ 25C: 1.100
Cocamidopropyl Hydroxysultaine

CSB W:
Percent Solids: 50
Diluent: water
Specific Gravity @ 25C: 1.100
Cocamidopropyl Hydroxysultaine

KCOSB 50:
Percent Solids: 50
Diluent: water
Specific Gravity @ 25C: 1.100
Cocamidopropyl Hydroxysultaine

LMAB:
Percent Solids: 35
Diluent: water
Specific Gravity @ 25C: 1.026
Lauramidopropyl Betaine

OB:
Percent Solids: 50
Diluent: water
Specific Gravity @ 25C: 1.020
Oleyl Betaine

SBAO 110:
Percent Solids: 42
Diluent: water
Specific Gravity @ 25C: 1.049
Lime Dispersant

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters:

MAPEG Polyethylene Glycol Esters are mono and diesters of various fatty acids. They offer graduated hydrophilic to lipophilic surface active properties, which make them useful as primary and secondary nonionic surfactants, with stability over a wide range of formulating conditions. The MAPEG esters in the range of 200 to 1540 molecular weight are the most versatile in regard to emulsification properties.

EGMS:
Ethylene Glycol Monostearate
Form @ 25C: Flake
Pour Point C: 56
Saponification Value: 184
Maximum Acid Value: 4
HLB Value: 2.9

EGDS:
Ethylene Glycol Distearate
Form @ 25C: Flake
Pour Point C: 63
Saponification Value: 195
Maximum Acid Value: 6
HLB Value: 1.4

200 MS:
PEG 200 Monostearate
Form @ 25C: Solid
Pour Point C: 33
Saponification Value: 125
Maximum Acid Value: 5
HLB Value: 8.0

200 DS:
PEG 200 Distearate
Form @ 25C: Solid
Pour Point C: 34
Saponification Value: 160
Maximum Acid Value: 10
HLB Value: 4.7

400 MS:
PEG 400 Monostearate
Form @ 25C: Solid
Pour Point C: 33
Saponification Value: 88
Maximum Acid Value: 5
HLB Value: 11.5

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

400 DS:
PEG 400 Distearate
Form @ 25C: Solid
Pour Point C: 36
Saponification Value: 124
Maximum Acid Value: 10
HLB Value: 8.1

600 MS:
PEG 600 Monostearate
Form @ 25C: Solid
Pour Point C: 36
Saponification Value: 66
Maximum Acid Value: 50
HLB Value: 13.6

600 DS:
PEG 600 Distearate
Form @ 25C: Solid
Pour Point C: 41
Saponification Value: 98
Maximum Acid Value: 10
HLB Value: 10.6

1000 MS:
PEG 1000 Monostearate
Form @ 25C: Solid
Pour Point C: 42
Saponification Value: 45
Maximum Acid Value: 5
HLB Value: 15.7

1500 MS:
PEG 1500 Monostearate
Form @ 25C: Solid
Pour Point C: 37
Saponification Value: 62
Maximum Acid Value: 5
HLB Value: 16.1

1540 DS:
PEG 1540 Distearate
Form @ 25C: Flake
Pour Point C: 45
Saponification Value: 53
Maximum Acid Value: 10
HLB Value: 14.8

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

S-40:
PEG 1760 Monostearate
Form @ 25C: Flake
Pour Point C: 44
Saponification Value: 30
Maximum Acid Value: 1
HLB Value: 17.2

S-100:
PEG 4400 Monostearate
Form @ 25C: Flake
Pour Point C: 50
Saponification Value: 16
Maximum Acid Value: 1
HLB Value: 18.7

S-150:
PEG 6000 Monostearate
Form @ 25C: Flake
Pour Point C: 51
Saponification Value: 9.5
Maximum Acid Value: 1
HLB Value: 19.0

6000 DS:
PEG 6000 Distearate
Form @ 25C: Flake
Pour Point C: 56
Saponification Value: 20
Maximum Acid Value: 10
HLB Value: 18.4

200 ML:
PEG 200 Monolaurate
Form @ 25C: Liquid
Pour Point C: 5
Specific Gravity @ 25C: .991
Saponification Value: 148
Maximum Acid Value: 5
HLB Value: 9.3

200 DL:
PEG 200 Dilaurate
Form @ 25C: Liquid
Pour Point C: 10
Specific Gravity @ 25C: .982
Saponification Value: 185
Maximum Acid Value: 10
HLB Value: 7.6

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

400 ML:
PEG 400 Monolaurate
Form @ 25C: Liquid
Pour Point C: 12
Specific Gravity @ 25C: 1.01
Saponification Value: 93
Maximum Acid Value: 5
HLB Value: 13.2

400 DL:
PEG 400 Dilaurate
Form @ 25C: Liquid
Pour Point C: 18
Specific Gravity @ 25C: .98
Saponification Value: 135
Maximum Acid Value: 10
HLB Value: 10.8

600 ML:
PEG 600 Monolaurate
Form @ 25C: Paste
Pour Point C: 23
Specific Gravity @ 25C: 1.050
Saponification Value: 70
Maximum Acid Value: 5
HLB Value: 14.8

600 DL:
PEG 600 Dilaurate
Form @ 25C: Paste
Pour Point C: 24
Specific Gravity @ 25C: .99
Saponification Value: 105
Maximum Acid Value: 10
HLB Value: 12.2

200 MO:
PEG 200 Monooleate
Form @ 25C: Liquid
Pour Point C: -26
Specific Gravity @ 25C: .97
Saponification Value: 120
Maximum Acid Value: 5
HLB Value: 8.3

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

200 DO:
PEG 200 Dioleate
Form @ 25C: Liquid
Pour Point C: 2
Specific Gravity @ 25C: .95
Saponification Value: 150
Maximum Acid Value: 10
HLB Value: 6.0

400 MO:
PEG 400 Monooleate
Form @ 25C: Liquid
Pour Point C: 5
Specific Gravity @ 25C: 1.01
Saponification Value: 84
Maximum Acid Value: 5
HLB Value: 11.8

400 DO:
PEG 400 Dioleate
Form @ 25C: Liquid
Pour Point C: 6
Specific Gravity @ 25C: .98
Saponification Value: 118
Maximum Acid Value: 10
HLB Value: 8.8

600 MO:
PEG 600 Monooleate
Form @ 25C: Liquid
Pour Point C: 18
Specific Gravity @ 25C: 1.03
Saponification Value: 65
Maximum Acid Value: 5
HLB Value: 13.6

600 DO:
PEG 600 Dioleate
Form @ 25C: Liquid
Pour Point C: 19
Specific Gravity @ 25C: 1.00
Saponification Value: 98
Maximum Acid Value: 10
HLB Value: 10.3

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

200 MOT:
PEG 200 Monotallate
Form @ 25C: Liquid
Pour Point C: -22
Specific Gravity @ 25C: .98
Saponification Value: 120
Maximum Acid Value: 5
HLB Value: 8.3

200 DOT:
PEG 200 Ditallate
Form @ 25C: Liquid
Pour Point C: -18
Specific Gravity @ 25C: .95
Saponification Value: 150
Maximum Acid Value: 10
HLB Value: 6.0

400 MOT:
PEG 400 Monotallate
Form @ 25C: Liquid
Pour Point C: 5
Specific Gravity @ 25C: 1.01
Saponification Value: 84
Maximum Acid Value: 5
HLB Value: 11.8

400 DOT:
PEG 400 Ditallate
Form @ 25C: Liquid
Pour Point C: 6
Specific Gravity @ 25C: .98
Saponification Value: 118
Maximum Acid Value: 10
HLB Value: 8.8

600 DOT:
PEG 600 Ditallate
Form @ 25C: Liquid
Pour Point C: 19
Specific Gravity @ 25C: 1.00
Saponification Value: 98
Maximum Acid Value: 10
HLB Value: 10.3

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

TAO 15:
PEG 660 Monotallate
Form @ 25C: Liquid
Pour Point C: 17
Specific Gravity @ 25C: 1.03
Saponification Value: 60
Maximum Acid Value: 5
HLB Value: 13.8

CO-16H:
PEG 700 Hydrogenated Castor Oil
Form @ 25C: Liquid
Pour Point C: 7
Specific Gravity @ 25C: 1.010
Saponification Value: 105
Maximum Acid Value: 2
HLB Value: 8.6

CO-25:
PEG 1100 Castor Oil
Form @ 25C: Liquid
Pour Point C: 5
Specific Gravity @ 25C: 1.040
Saponification Value: 83
Maximum Acid Value: 2
HLB Value: 10.5

CO-25H:
PEG 1100 Hydrogenated Castor Oil
Form @ 25C: Liquid
Pour Point C: 5
Specific Gravity @ 25C: 1.040
Saponification Value: 82
Maximum Acid Value: 2
HLB Value: 10.8

CO-30:
PEG 1320 Castor Oil
Form @ 25C: Liquid
Pour Point C: 9
Specific Gravity @ 25C: 1.046
Saponification Value: 75
Maximum Acid Value: 2
HLB Value: 11.8

PPG/MAZER CHEMICALS: MAPEG Polyethylene Glycol Esters (Continued):

CO-36:
PEG 1580 Castor Oil
Form @ 25C: Liquid
Pour Point C: 12
Specific Gravity @ 25C: 1.055
Saponification Value: 73
Maximum Acid Value: 2
HLB Value: 12.6

CO-200:
PEG 8800 Castor Oil
Form @ 25C: Solid
Pour Point C: 50
Saponification Value: 17.5
Maximum Acid Value: 2
HLB Value: 18.1

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters:

The MAPHOS Phosphate Esters are complex phosphorylated nonionic surfactants. Through this process the nonionic surfactants become anionic in nature and have quite different surface active properties. These products are extremely flexible anywhere from their free acid form to amine or alkali metal salts, with lower foam tendencies. The main advantage of the MAPHOS esters is their stability and solubility in alkali systems.

15:
Class: Aromatic
Acid Values: mg KOH/g Product: to pH 5.2: 55
to pH 9.5: 98
Specific Gravity @ 25C: 1.08
Activity: 70
Percent Phosphorous Content: 2.8
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

17:
Class: Aromatic
Acid Values: mg KOH/g Product: to pH 5.2: 70
to pH 9.5: 135
Specific Gravity @ 25C: 1.10
Activity: 70
Percent Phosphorous Content: 3.8
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

18:
Class: Aliphatic
Acid Values: mg KOH/g Product: to pH 5.2: 120
to pH 9.5: 240
Specific Gravity @ 25C: 1.16
Activity: 99.5
Percent Phosphorous Content: 6.7
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

30:
Class: Aliphatic
Acid Values: mg KOH/g Product: to pH 5.2: 190
to pH 9.5: 370
Specific Gravity @ 25C: 1.10
Activity: 99.5
Percent Phosphorous Content: 11.1
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >200

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters (Continued):

33:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 215
To pH 9.5: 385
Specific Gravity @ 25C: 1.12
Activity: 99.5
Percent Phosphorous Content: 12.6
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

41A:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 73
To pH 9.5: 155
Specific Gravity @ 25C: 1.12
Activity: 82
Percent Phosphorous Content: 4.6
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

54:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 70
To pH 9.5: 115
Specific Gravity @ 25C: 1.08
Activity: 99.5
Percent Phosphorous Content: 4.1
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

55:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 110
To pH 9.5: 225
Specific Gravity @ 25C: 1.14
Activity: 80
Percent Phosphorous Content: 8.2
pH 1% Aqueous Solution : 2
Flashpoint PMCC F: >300

56:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 130
To pH 9.5: 255
Specific Gravity @ 25C: 1.16
Activity: 90
Percent Phosphorous Content: 7.4
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters (Continued):

58:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 155
To pH 9.5: 285
Specific Gravity @ 25C: 1.27
Activity: 90
Percent Phosphorous Content: 10.0
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

76:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 55
To pH 9.5: 92
Specific Gravity @ 25C: 1.09
Activity: 99.5
Percent Phosphorous Content: 3.1
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

76 NA:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 9.5: 35
Specific Gravity @ 25C: 1.08
Activity: 90
Percent Phosphorous Content: 2.6
pH 1% Aqueous Solution: 6
Flashpoint PMCC F: >300

60 A:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 175
To pH 9.5: 325
Specific Gravity @ 25C: 1.16
Activity: 99.5
Percent Phosphorous Content: 10.4
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

66 H:
Class: Aromatic
Specific Gravity @ 25C: 1.15
Activity: 50
Percent Phosphorous Content: 4.8
pH 1% Aqueous Solution: 5
Flashpoint PMCC F: >300

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters (Continued):

77:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 34
To pH 9.5: 65
Specific Gravity @ 25C: 1.03
Activity: 99.5
Percent Phosphorous Content: 1.9
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

79:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 0
To pH 9.5: 0
Specific Gravity @ 25C: 1.13
Activity: 99.5
Percent Phosphorous Content: 7.0
pH 1% Aqueous Solution: 4
Flashpoint PMCC F: >300

91:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 65
To pH 9.5: 120
Specific Gravity @ 25C: 1.10
Activity: 99.5
Percent Phosphorous Content: 2.9
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

151:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 50
To pH 9.5: 95
Specific Gravity @ 25C: 1.09
Activity: 99.5
Percent Phosphorous Content: 2.6
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

236:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 95
To pH 9.5: 150
Specific Gravity @ 25C: 1.04
Activity: 99.5
Percent Phosphorous Content: 5.4
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters (Continued):

8135:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 95
To pH 9.5: 145
Specific Gravity @ 25C: 1.20
Activity: 99.5
Percent Phosphorous Content: 5.1
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >350

DT:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 85
To pH 9.5: 150
Specific Gravity @ 25C: 1.05
Activity: 99.5
Percent Phosphorous Content: 4.7
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

FDEO:
Class: Blend
Acid Values: mg KOH/g Product: To pH 5.2: 105
To pH 9.5: 190
Specific Gravity @ 25C: 1.12
Activity: 90
Percent Phosphorous Content: 5.7
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >200

JA 60:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 110
To pH 9.5: 220
Specific Gravity @ 25C: 1.00
Activity: 99.5
Percent Phosphorous Content: 6.2
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

JM 51:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 50
To pH 9.5: 85
Specific Gravity @ 25C: 1.06
Activity: 99.5
Percent Phosphorous Content: 2.6
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

PPG/MAZER CHEMICALS: MAPHOS Phosphate Esters (Continued):

JM 71:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 37
To pH 9.5: 70
Specific Gravity @ 25C: 1.06
Activity: 99.5
Percent Phosphorous Content: 2.0
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

L 4:
Class: Aromatic
Acid Values: mg KOH/g Product: To pH 5.2: 77
To pH 9.5: 130
Specific Gravity @ 25C: 1.09
Activity: 99.5
Percent Phosphorous Content: 4.0
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

L 13:
Class: Aliphatic
Acid Values: mg KOH/g Product: To pH 5.2: 90
To pH 9.5: 140
Specific Gravity @ 25C: 1.02
Activity: 99.5
Percent Phosphorous Content: 5.4
pH 1% Aqueous Solution: 2
Flashpoint PMCC F: >300

PPG/MAZER CHEMICALS: MAZEEN Alkoxylated Diamines:

MAZEEN 173, 174, and 174-75 are alkoxylated diamines which are exceptionally stable to heat. MAZEEN 175 and 176 exhibit very low foam, even below their cloud points.

173:
Form @ 25C: Liquid
Average Equivalent Weight: 292
Color Gardner: 1
Specific Gravity @ 25C: 1.01
Surface Tension Dynes/cm 0.1% Solution @ 25C: 51.4

174:
Form @ 25C: Liquid
Average Equivalent Weight: 292
Color Gardner: <1
Specific Gravity @ 25C: 1.00
Surface Tension Dynes/cm 0.1% Solution @ 25C: 51.4

174-75:
Form @ 25C: Liquid
Average Equivalent Weight: 292
Color Gardner: <1
Specific Gravity @ 25C: 1.00
Surface Tension Dynes/cm 0.1% Solution @ 25C: 54.2

175:
Form @ 25C: Liquid
Average Molecular Weight: 8900
Cloud Point 1% Aqueous Solution, C: 65
Viscosity @ 25C in cps: 1500
Surface Tension Dynes/cm 0.1% Solution @ 25C: 34.1
Pour Point C: 18
Dynamic Foam Height mm: 35

176:
Form @ 25C: Liquid
Average Molecular Weight: 5500
Cloud Point 1% Aqueous Solution, C: 63
Viscosity @ 25C in cps: 1000
Surface Tension Dynes/cm 0.1% Solution @ 25C: 40.3
Pour Point C: 18
Dynamic Foam Height mm: 600

PPG/MAZER CHEMICALS: MAZEEN Ethoxylated Amines:

MAZEEN Surfactants are a group of tertiary amines substituted with two or more polyoxyethylene groups attached to the nitrogen. These products are essentially cationic in nature; however, with increasing ethylene oxide content, these products become nonionic in character.

MAZEEN:

C-2:
Form @ 25C: Liquid
Average Equivalent Weight: 285
Color Gardner: 10
Specific Gravity @ 25C: 0.874
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 28

C-5:
Form @ 25C: Liquid
Average Equivalent Weight: 425
Color Gardner: 10
Specific Gravity @ 25C: 0.976
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 33

C-10:
Form @ 25C: Liquid
Average Equivalent Weight: 645
Color Gardner: 11
Specific Gravity @ 25C: 1.017
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 39

C-15:
Form @ 25C: Liquid
Average Equivalent Weight: 860
Color Gardner: 9
Specific Gravity @ 25C: 1.042
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 41

DBA-1:
Form @ 25C: Liquid
Average Equivalent Weight: 172
Color Gardner: 2
Specific Gravity @ 25C: 0.860
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 41

S-2:
Form @ 25C: Liquid
Average Equivalent Weight: 350
Color Gardner: 14
Specific Gravity @ 25C: 0.911
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 26

PPG/MAZER CHEMICALS: MAZEEN Ethoxylated Amines (Continued):

S-5:
Form @ 25C: Liquid
Average Equivalent Weight: 500
Color Gardner: 11
Specific Gravity @ 25C: 0.951
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 33

S-10:
Form @ 25C: Liquid
Average Equivalent Weight: 710
Color Gardner: 11
Specific Gravity @ 25C: 1.020
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 40

S-15:
Form @ 25C: Liquid
Average Equivalent Weight: 930
Color Gardner: 11
Specific Gravity @ 25C: 1.040
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 43

T-2:
Form @ 25C: Liquid
Average Equivalent Weight: 350
Color Gardner: 7
Specific Gravity @ 25C: 0.916
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 29

T-5:
Form @ 25C: Liquid
Average Equivalent Weight: 500
Color Gardner: 14
Specific Gravity @ 25C: 0.966
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 34

T-15:
Form @ 25C: Liquid
Average Equivalent Weight: 925
Color Gardner: 10
Specific Gravity @ 25C: 1.028
Surface Tension Dynes/Cm 0.1% Solution @ 25C: 41

PPG/MAZER CHEMICALS: MAZON Proprietary Surfactants:

MAZON Proprietary Surfactants are a group of products that have been formulated for specific applications.

18 A:
Form @ 25C: Liquid
Specific Gravity @ 25C: 0.998
Activity: 100
Flashpoint PMCC F: >350
Nonionic Viscosity Booster in Aqueous Systems

21:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.04
Activity: 100
Flashpoint PMCC F: >350
Anionic Emulsifier for Emulsion Degreasers

23:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.08
Activity: 70
Flashpoint PMCC F: >350
Formulated Detergent Base for Light Duty Hard Surface Cleaning

27:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.00
Activity: 60
Flashpoint PMCC F: >350
Wetting Agent for Light Duty Cleaning Applications

29:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.07
Flashpoint PMCC F: >350
Formulated Cleaner Concentrate for Soils and Oily Residues

40:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.15
Activity: 70
Flashpoint PMCC F: >350
Caustic Coupling Surfactant Soluble in Highly Alkaline Systems

40A:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.07
Activity: 76
Flashpoint PMCC F: >350
Low Foam version of MAZON 40.

PPG/MAZER CHEMICALS: MAZON Proprietary Surfactants (Continued):

41:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.065
Activity: 60
Flashpoint PMCC F: None
Ammonium Salt of an Alkylphenol Ethoxylate for Use in Cleaning Formulations

43 & 43LF:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.110
Activity: 97
Flashpoint PMCC F: >300
Low Foaming Deinking Aid for Recycled Paper and Board which is highly stable to salts, pH changes, and temperature.

60T:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.08
Activity: 60
Flashpoint PMCC F: >350
Alkylaryl Sulfonate Triethanol Amine Salt Solution for Cleaning Formulations

61:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.058
Activity: 96
Flashpoint PMCC F: >300
Deinking Aid

70:
Form @ 25C: Liquid
Specific Gravity @ 25C: 1.05
Activity: 100
Flashpoint PMCC F: >350
Amine/Amide Surfactant for Use in Cleaners

114:
Form @ 25C: Liquid
Specific Gravity @ 25C: .99
Activity: 100
Flashpoint PMCC F: >350
Amphoteric Surfactant with Corrosion Inhibiting Properties

PPG/MAZER CHEMICALS: MAZOX Amine Oxides:

MAZOX Amine Oxides are nonionic surfactants at neutral or alkaline pH ranges. In acidic solutions, amine oxides are mildly cationic. They are also fully biodegradable and compatible with all types of surfactants, such as anionics, cationics, nonionics and amphoterics.

MAZOX CAPA:
Form @ 25C: Liquid
Percent: Amine Oxide: 30
Free Amine: 1.0
Peroxide Value: 100 max.
Flash Point F: >200
Specific Gravity: 1.02

MAZOX CDA:
Form @ 25C: Liquid
Percent: Amine Oxide: 30
Free Amine: 1.0
Peroxide Value: 100 max.
Flash Point F: >200
Specific Gravity: 0.96

MAZOX KCAO:
Form @ 25C: Liquid
Percent: Amine Oxide: 33
Free Amine: 1.0
Peroxide Value: 100 max.
Flash Point F: >200
Specific Gravity: 1.003

MAZOX LDA:
Form @ 25C: Liquid
Percent: Amine Oxide: 30
Free Amine: 1.0
Peroxide Value: 100 max.
Flash Point F: >200
Specific Gravity: 0.96

MAZOX MDA:
Form @ 25C: Liquid
Percent: Amine Oxide: 30
Free Amine: 1.0
Peroxide Value: 100 max.
Flash Point F: >200
Specific Gravity: 0.96

MAZOX ODA:
Form @ 25C: Liquid
Percent: Amine Oxide: 50
Free Amine: 1.0
Peroxide Value: 150 max.
Specific Gravity: 0.90

MAZOX SDA:
Form @ 25C: Paste
Percent: Amine Oxide: 25
Free Amine: 1.0
Peroxide Value: 100 max.
Specific Gravity: 0.99

PPG/MAZER CHEMICALS: S-MAZ Sorbitan Fatty Acid Esters:

The S-MAZ Sorbitan Fatty Acid Esters are nonionic, lipophilic surfactants used for preparing excellent water in oil emulsions. They find use as antistats, textile softeners, lubricants, process defoamers, opacifiers and co-emulsifiers.

S-MAZ Sorbitan Fatty Acid Esters:

20:
Sorbitan: Monolaurate
Form @ 25C: Liquid
Color: 7
Saponification Value: 158-170
Hydroxyl Value: 330-358
Maximum Acid Value: 7
HLB Value: 8.0

40:
Sorbitan: Monopalmitate
Form @ 25C: Flake
Color: 4
Saponification Value: 140-150
Hydroxyl Value: 275-305
Maximum Acid Value: 7.5
HLB Value: 6.5

60:
Sorbitan: Monostearate
Form @ 25C: Flake
Color: 3
Saponification Value: 147-157
Hydroxyl Value: 235-260
Maximum Acid Value: 10
HLB Value: 4.7

60K:
Sorbitan: Monostearate
Form @ 25C: Flake
Color: 3
Saponification Value: 147-157
Hydroxyl Value: 235-260
Maximum Acid Value: 10
HLB Value: 4.7

60KHM*:
Sorbitan: Monostearate
Form @ 25C: Flake
Color: 3
Saponification Value: 147-157
Hydroxyl Value: 235-260
Maximum Acid Value: 10
HLB Value: 4.7

* KHM denotes Kosher high melt point.

PPG/MAZER CHEMICALS: S-MAZ Sorbitan Fatty Acid Esters (Continued):

65K:
Sorbitan: Tristearate
Form @ 25C: Flake
Color: 3
Saponification Value: 176-188
Hydroxyl Value: 66-80
Maximum Acid Value: 15
HLB Value: 2.2

80:
Sorbitan: Monooleate
Form @ 25C: Liquid
Color: 7
Saponification Value: 149-160
Hydroxyl Value: 193-209
Maximum Acid Value: 8
HLB Value: 4.6

80K:
Sorbitan: Monooleate
Form @ 25C: Liquid
Color: 6
Saponification Value: 149-160
Hydroxyl Value: 193-209
Maximum Acid Value: 8
HLB Value: 4.6

83R:
Sorbitan: Sesquioleate
Form @ 25C: Liquid
Color: 5
Saponification Value: 145-160
Hydroxyl Value: 185-215
Maximum Acid Value: 12
HLB Value: 4.6

85:
Sorbitan: Trioleate
Form @ 25C: Liquid
Color: 6
Saponification Value: 172-186
Hydroxyl Value: 56-68
Maximum Acid Value: 14
HLB Value: 2.1

PPG/MAZER CHEMICALS: S-MAZ Sorbitan Fatty Acid Esters (Continued):

85K:
Sorbitan: Trioleate
Form @ 25C: Liquid
Color: 6
Saponification Value: 172-186
Hydroxyl Value: 56-68
Maximum Acid Value: 14
HLB Value: 2.1

90:
Sorbitan: Monotallate
Form @ 25C: Liquid
Color: 9
Saponification Value: 145-160
Hydroxyl Value: 180-210
Maximum Acid Value: 10
HLB Value: 4.3

95:
Sorbitan: Tritallate
Form @ 25C: Liquid
Color: 9
Saponification Value: 168-186
Hydroxyl Value: 55-85
Maximum Acid Value: 15
HLB Value: 1.9

RHONE-POULENC: ALCODET High Performance Cleaning Surfactants:

ALCODET HSC-1000:
Tertiary Thioether
Active Content: 98%
Pour Point: -12C
Color-Gardner: 2
Cloud Point: 66F (1% aqueous solution)
Viscosity: 47 cps at 40C

Advantages:
* Requires less effort than NPEOs for equivalent cleaning
* Provides equivalent detergency at lower concentrations
* Superior emulsification of greases and oils
* Fast wetting on hard surfaces such as steel; soil virtually floats away
* Low viscosity
* Low foaming
* Low pour point
* Stability through a wide pH and temperature range
* Excellent performance in hard water and in the presence of alkaline builders
* Is considered non-toxic to aquatic life with the addition of an oxidizing agent
* No mercaptan odor

ALCODET IL-3500:
Tertiary Thioether
Active Content: 98%
pH: 6.5 (1% aqueous solution)
Pour Point: -12C
Viscosity: 47 cps @ 40C
Specific Gravity: 1.02 @ 25C
Color-Gardner: 2

Advantages:
* Excellent emulsification of all types of grease, oil and carbon
* Performs better without phosphate builders than NPEOs with phosphate builders
* Stability through a wide pH and temperature range
* Excellent performance in hard water and in the presence of alkaline builders.
* Stability in formulations containing cationic or anionic materials
* Fast wetting
* No mercaptan odor
* Is considered non-toxic to aquatic life with the addition of an oxidizing agent

RHONE-POULENC: ALCODET High Performance Cleaning Surfactants (Continued):

ALCODET MC-2000:
Tertiary Thioether
Active Content: 98%
Water, %W: 1.0-1.5%
Cloud Point: 66F (1% aqueous solution)
pH: 6.5 (1% aqueous solution)
Ross Miles Foam Test: 4 cm (0.1% by weight)
Glycol Content: <4.5%

Advantages:
* Requires less effort than NPEOs for equivalent cleaning
* Provides equivalent detergency at lower concentrations
* Emulsifies all types of grease, carbon and soil
* Superior engine degreaser
* Low glycol content
* Effective inhibitor during the acid pickling of steel
* Stability through a wide pH and temperature range
* Excellent performance in hard water and in the presence of alkaline builders
* Stability in formulations containing cationic or anionic materials
* Fast wetting
* Effective on extremely oily surfaces
* Superior detergency at lower temperatures
* Low foaming
* Retards corrosion
* Can be used in lower concentrations than competitive NPEOs
* Is considered non-toxic to aquatic life with the addition of an oxidizing agent
* No mercaptan odor

ALCODET TX-4000:
Tertiary Thioether
Active Content: 98%
Water, %W: 1.0-1.5%
Cloud Point: 66F (1% aqueous solution)
pH: 6.5 (1% aqueous solution)
Specific Gravity: 1.02 @ 25C

Advantages:
* Effectively removes soil with less solids for scouring
* Holds soil in suspension, preventing redeposition on fabric
* Stability through a wide pH and temperature range
* Excellent performance in hard water and in the presence of alkalinity builders
* Stability in formulations containing cationic or anionic materials
* Is considered non-toxic to aquatic life with the addition of an oxidizing agent
* No mercaptan odor

RHONE-POULENC: Surfactants for Agricultural Formulations:

Ionic Character: Anionic:

Alkylnaphthalene Sulfonate Salts:
- SUPRAGIL WP
- SUPRAGIL NS/90
- SUPRAGIL MNS/90
- SUPRAGIL NK
- BLANCOL N

Dioctylsulfosuccinates:
- GEROPON SDS
- PENTEX 99

Dodecylbenzene Sulfonate Salts:
- SIPONATE DDB-40
- SIPONATE DS-10
- SOPROPHOR 70/B
- SOPROPHOR 2283

Ethoxylated Tristyrlphenol Phosphates:
- SOPROPHOR FLK
- SOPROPHOR 3D33

Ethoxylated Tristyrlphenol Sulfates:
- SOPROPHOR 4D384

Oleoyltaurate Salts:
- IGEPON T-22A
- IGEPON T-77

Phosphate Esters:
- RHODAFAC LO-529
- RHODAFAC PE-510
- RHODAFAC RE-410
- RHODAFAC RE-610
- RHODAFAC RE-870
- RHODAFAC RM-510
- RHODAFAC RM-710
- RHODAFAC RD-510
- RHODAFAC RS-410
- RHODAFAC RS-610
- RHODAFAC RS-710

Polymeric Dispersants:
- GEROPON HB
- GEROPON DG
- GEROPON 111
- GEROPON 111-D

RHONE-POULENC: Surfactants for Agricultural Formulations (Continued):

Ionic Character: Anionic (Continued):

Specialty Sulfates/Sulfonates:
- ALIPAL CO-436
- ALIPAL EP-110
- ALIPAL EP-120
- SIPONATE DSB
- SIPONATE DSB-85

Ionic Character: Nonionic:

Ethoxylated Castor Oil:
- ALKAMULS EL-620
- ALKAMULS EL-620L
- ALKAMULS EL-719
- ALKAMULS EL-719L

Ethoxylated Dinonylphenols:
- IGEPAL DM-430
- IGEPAL DM-530
- IGEPAL DM-710
- IGEPAL DM-970

Ethoxylated Dodecylphenols:
- IGEPAL RC-520
- IGEPAL RC-620
- IGEPAL RC-630

Ethoxylated Fatty Acids:
- ALKAMULS A
- ALKAMULS AP

Ethoxylated Fatty Alcohols:
- RHODASURF 860/P
- RHODASURF ON-870

Ethoxylated Nonylphenols:
- IGEPAL CO-430
- IGEPAL CO-520
- IGEPAL CO-530
- IGEPAL CO-630
- IGEPAL CO-660
- IGEPAL CO-710
- IGEPAL CO-720
- IGEPAL CO-730
- IGEPAL CO-880
- IGEPAL CO-890
- IGEPAL CO-970
- IGEPAL CO-990

RHONE-POULENC: Surfactants for Agricultural Formulations (Continued):

Ethoxylated Octylphenols:
- IGEPAL CA-210
- IGEPAL CA-420
- IGEPAL CA-520
- IGEPAL CA-620
- IGEPAL CA-630
- IGEPAL CA-720
- IGEPAL CA-730

Ethoxylated Tridecylalcohol:
- RHODASURF BC-420
- RHODASURF BC-610
- RHODASURF BC-720
- RHODASURF BC-840

Ethoxylated Tristyrlphenols:
- SOPROPHOR BSU
- SOPROPHOR CY/8
- SOPROPHOR S/25
- SOPROPHOR S40-P

Ethoxylated/Propoxylated Block Copolymers:
- PEGOL F-68
- PEGOL F-108
- PEGOL L-10
- PEGOL L-61
- PEGOL P-104
- PEGOL P-105

Ethoxylated/Propoxylated Alkylphenol Block Copolymers:
- SOPROPHOR 461/P
- SOPROPHOR 487/P
- SOPROPHOR 497/P
- SOPROPHOR 724/P
- SOPROPHOR SC/167

Ethoxylated/Propoxylated Tristyrylphenols:
- SOPROPHOR 796/P

Ionic Character: Cationic/Misc.:

Emulsifier Blends, Adjuvants:
- Crop Oil Emulsifiers
- Matched Pair Emulsifiers
- Spreader/Stickers

Ethoxylated Fatty Amines:
- RHODAMEEN T-12
- RHODAMEEN T-30
- RHODAMEEN PN-430
- RHODAMEEN PN-810

RHONE-POULENC: Textile Specialties: Dyeing Products:

ALKASURF SS-0-75:

ALKASURF SS-0-75 is an aqueous sodium dioctyl sulfosuccinate ethanol blend. It exhibits superior wetting, foaming and re-wetting.

Diester Sulfosuccinate
Ionic Character: Anionic
Clear Liquid
Percent Solids: 70%
Water Solubility: Dispersible
pH (10% DW): 5.0-7.0
Density: 9.08 lbs/gal
Flash Point: 105F

CHEMCOGEN 133 Conc

CHEMCOGEN 133 Conc is a mild cationic surfactant designed to act as a retarding agent in the dyeing of acid dyes on nylon. It is especially effective at lower temperatures. CHEMCOGEN 133 Conc may be used with no concern of precipitation with any anionic agent in the dyebath.

Amber liquid
Activity: 54%
pH: 8.5
Weight per Gallon: 8.43 lbs
Refractive Index: 1.417
Ionic Nature: Cationic

CHEMCOGEN AC:

CHEMCOGEN AC is an anionic dyeing assistant used for the application of acid dyes on nylon yarns and fabrics.

Clear, amber liquid
Ionic Nature: Anionic
pH (1% Aqueous Solution): 7.0
Soluble in water
Excellent stability
Specific Gravity: 1.610
Weight per Gallon: 9.68 pounds

CHEMCOGEN SRI-B:

CHEMCOGEN SRI-B is an inexpensive anionic dye leveler.

Light Amber Liquid
Anionic
pH (1% Aqueous Solution): 6.5 to 9.5
Soluble in Water
Stability: Excellent
Specific Gravity: 1.068
Weight per Gallon: 8.9 pounds

RHONE-POULENC: Textile Specialties: Dyeing Products (Continued):

KARA WET 5GN:

KARA WET 5GN is a highly effective nonionic wetting agent developed specifically for the continuous processing 4th and 5th generation fluorocarbon treated nylon carpet. KARA WET 5GN provides uniform wet out and even dye penetration without "tippyness" at low application levels. It offers excellent lowering BOD and COD requirements through the reduction in usage amounts.

Nonionic
Clear Liquid
Activity: 100%
pH (1% distilled water): 5-8
Cloud point, C: 42

KARA WET DOSS:

KARA WET DOSS is a fast-wetting, highly active anionic surfactant having emulsifying and dispersing characteristics. Its active ingredient is sodium dioctyl sulfosuccinate which gives the fastest wetting obtainable among most commonly used surfactants.

Slightly viscous liquid
Clear, pale yellow
Anionic
pH (1% aqueous solution): 6.0
Readily soluble in water
Weight per gallon: 8.96 pounds
Minimum safe storage temperature: 0C
Flash point: >200F

KARA WET FS-100:

KARA WET FS-100 is a fast wetting, economical surfactant. It is nonionic in nature and may be used in any textile dyeing operation wherein a rapid wet-out is desired. KARA-WET FS-100 is of special interest in prewet for Kuster application.

Active Ingredient: 100%
Slight viscous liquid
Nonionic
Refractive Index: 1.4480
Weight per Gallon: 8.05
pH (1% Aqueous Solution): 5.5-6.5

RHONE-POULENC: Textile Specialties: Dyeing Products (Continued):

KARA WET LOG:

KARA WET LOG is a concentrated nonionic wetting agent which may be used in a multitude of applications on both natural and synthetic fibers. KARA WET LOG obtains wetting speeds which are comparable to many of the fastest wetting anionic products.

Clear, colorless liquid
Activity: 90%
pH of 5% solution: 6.2
Weight per Gallon: 8.31 pounds
Stability: Indefinite

PROGASOL MCX:

PROGASOL MCX is a versatile, fast-wetting nonionic surfactant. Due to its efficient reduction of surface tension, it has been found especially useful in the prewetting of fluorocarbon-treated carpets on continuous dyeing ranges.

Activity: 90%
Clear, water-white solution
Nonionic
pH of 1% Solution: 5.0-6.0
Freeze Point: Less than 20F
Weight per Gallon: 8.37 pounds

SUPRA WET D-4:

SUPRA WET D-4 is a fast-wetting, anionic surfactant developed specifically for nylon fibers. This product also has excellent emulsifying and dispersing characteristics. SUPRA-WET D-4 is compatible with other nonionic and anionic surfactants.

Slightly viscous liquid
Anionic
Flash Point: >200F
Freeze Point: <20F
Specific Gravity: 1.095

RHONE-POULENC: Textile Specialties: Fabric Preparation Products:

DIANOL RSP:

DIANOL RSP is a neutralized phosphate ester and alcohol blend. It is a fast wetting agent for use in bleaching operations. It exhibits low foam with high detergent and oil dispersant action.

Neutralized phosphate ester/alcohol blend
Anionic
Light yellow clear liquid
Percent Solids: 83%
Water Solubility: soluble
pH (neat): 9.0
Density: 8.4 lb/gal
Flash Point: 105 degrees F

KARA WET SB:

KARA WET SB is a phosphate co-ester surfactant. It exhibits good wetting and detergency properties and is stable under highly alkaline conditions. KARA WET SB is especially recommended for scouring and peroxide bleaching operations.

Clear, water white liqud
Activity: 50
Anionic
pH (as is): 8.2
Weight per Gallon: 9.0 pounds
Soluble in cold water
Stability: Indefinite under normal conditions

RUETGERS-NEASE CHEMICAL CO., INC.: NAXEL Surface Active Agents:

NAXEL AAS-45S:

NAXEL AAS-45S is an anionic linear alkyl aryl sulfonate and may be chemically described as sodium dodecylbenzene sulfonate. Its light color, good acid and alkaline stability, hard water stability and general economy make it an ideal product for a wide variety of uses.

Gold liquid
Active: 40-43%
Sodium Sulfate: 1.5% max.
Unsulfonated Oil: 1.5% max.
Color, Klett: 40

NAXEL AAS-60S:

NAXEL AAS-60S is an extremely light colored, viscous, liquid, surface active agent containing 55% active ingredient, and may be described as a linear triethanolamine dodecyl benzene sulfonate.

NAXEL AAS-60S has exceptional cold water solubility and generally is an excellent detergent and wetting agent.

Gold liquid
Active: 55%
Density (lbs./gal.): 9.3
Solids: 59%

NAXEL AAS Special 3:

NAXEL AAS Special 3 is an isopropylamine salt of linear dodecyl benzene sulfonic acid. It is produced via an SO3 process which yields uniform high quality, maximum activity, and minimum unsulfonated or free oil.

In general, NAXEL AAS Special 3 is the product of choice where stable solvent emulsions having high water carrying capacity and good detergency are sought. Its contribution to detergency makes it preferable to the widely used mahogany sulfonates.

Amber liquid
Active: 95%
Density (lbs./gal.): 8.4

RUETGERS-NEASE CHEMICAL CO., INC.: NAXONATE Hydrotropes:

NAXONATE Liquids:

NAXONATE 4L:
(Sodium xylenesulfonate, 40% Solution)
Crystallizing Temperature: 10C
Assay: 40%
Color %T: 75
Alcohol Insolubles: 2.0%
Centistokes @ 38C Viscosity: 4.49
Density (lbs/gal): 9.75

NAXONATE 5L:
(Sodium Xylenesulfonate, 50% solution)
Crystallizing Temperature: 30C
Assay: 50%
Color %T: 70
Alcohol Insolubles: 2.5%
Centistokes @ 38C Viscosity: 8.79
Density (lbs/gal): 10.0

NAXONATE 4ST:
(Sodium Toluenesulfonate, 40% solution)
Crystallizing Temperature: 10C
Assay: 40%
Color %T: 75
Alcohol Insolubles: 2.0%
Centistokes @ 38C Viscosity: 11.93
Density (lbs/gal): 9.63

NAXONATE 45SC:
(Sodium Cumenesulfonate, 45% Solution)
Crystallizing Temperature: 25C
Assay: 45%
Color %T: 65
Alcohol Insolubles: 2.0%
Centistokes @ 38C Viscosity: 2.27
Density (lbs/gal): 9.83

NAXONATE 4KT:
(Potassium Toluenesulfonate, 40% solution)
Crystallizing Temperature: 15C
Assay: 40%
Color %T: 75
Alcohol Insolubles: 1.5%
Density (lbs/gal): 10.2

RUETGERS-NEASE CHEMICAL CO., INC.: NAXONATE Hydrotropes (Continued):

NAXONATE LIquids (Continued):

NAXONATE 5KT:
(Potassium Toluenesulfonate, 50% Solution)
Crystallizing Temperature: 25C
Assay: 50%
Color %T: 70
Alcohol Insolubles: 2.0%
Centistokes @ 38C Viscosity: 2.98
Density (lbs/gal): 9.60

NAXONATE 4AX:
(Ammonium Xylenesulfonate, 40% Solution)
Crystallizing Temperature: 0C
Assay: 40%
Color %T: 75
Alcohol Insolubles: 2.0%
Centistokes @ 38C Viscosity: 13.08
Density (lbs/gal): 9.50

NAXONATE Powders:

NAXONATE:
(Sodium Xylenesulfonate, 93% Powder)
Assay: 93%
Color %T: Off White
Alcohol Insolubles: 5.0%
pH: 7-9

NAXONATE ST:
(Sodium Toluenesulfonate, 93% Powder)
Assay: 93%
Color %T: Off White
Alcohol Insolubles: 5.0%
pH: 7-9

NAXONATE KT:
(Potassium Toluenesulfonate, 93% Powder)
Assay: 93%
Color %T: Off White
Alcohol Insolubles: 4.0%
pH: 7-9

NAXONATE SC:
(Sodium Cumenesulfonate, 93% Powder)
Assay: 93%
Color %T: Off White
Alcohol Insolubles: 5.0%
pH: 7-9

RUETGERS-NEASE CHEMICAL CO., INC.: Surfactants:

NAXCHEM Emulsifier 700:

NAXCHEM Emulsifier 700 is a 100% active, nonionic anti-static base designed for use in emulsifying various low viscosity, pale mineral oils. A wide range of ratios are satisfactory depending upon the end use.

Due to outstanding anti-static properties of NAXCHEM Emulsifier 700, it may be added to any aqueous system where additional anti-static protection is desired.

Liquid
Active Matter Content: 100%
Specific Gravity: 1.02
Pounds/Gallon: 8.50

NAXCHEM N-Foam 802:

NAXCHEM N-Foam 802 is a blend of crosslinking and emulsifying agents. It has been specially formulated to provide long lasting foam.

Clear Yellow-gold liquid
Solids: 48-50%

NAXONOL CO:

NAXONOL CO is a 2:1 alkanolamide. It is manufactured from coconut fatty acid. NAXONOL CO is an excellent detergent, wetting agent and thickening agent. It is the lowest foaming of the alkanolamide series. NAXONOL CO is a highly economical product, and may be used in many different applications where normal amounts of the free fatty acid and diethanolamine are required.

Amber liquid
Specific gravity: 2.47 g/ml
Solubility in water: Good
Hard water stability: Good
Alkali stability: Good
Soap stability: Good
Acid stability: Good
Acid stability: Fair-poor

NAXONOL PO:

NAXONOL PO is a 1:1 coconut diethanolamide. It is a very versatile product which can function as an effective detergent, emulsifier, wetting agent, lubricant and dispersant. NAXONOL PO is an excellent thickening agent and has decided value as a viscosity aid in cosmetic and household products.

Light yellow viscous liquid
Specific gravity: 2.46 g/ml

SANDOZ CHEMICALS: SANDOPAN Carboxylated Surfactants:

SANDOZ DTC:
Sodium Trideceth-7-Carboxylate
Light yellow gel
% Solids: 75+-2%
Recommended Applications: Detergents, emulsifiers, wetting agents, solubilizer, cationic compatable

SANDOPAN DTC-100:
Sodium Trideceth-7-Carboxylate
Clear yellow liquid
% Solids: 70+-2%
Recommended Applications: Detergents, emulsifiers, wetting agents, pH stable, good for solvent cleaners

SANDOPAN DTC Acid:
Trideceth-7-Carboxylic Acid
Clear liquid
% Solids: 90+-2%
Recommended Applications: Detergents, emulsifiers, wetting agents. Free acid form, oil and solvent soluble

SANDOPAN DTC Linear P:
Sodium C12-15 Pareth-6-Carboxylate
White, opaque, semi-pourable gel
% Solids: 70+-5%
Recommended Applications: Detergents, emulsifiers, wetting agents, solubilizer, viscosity enhancer in certain systems

SANDOPAN DTC Linear P Acid:
C12-15 Pareth-6-Carboxylic Acid
Clear liquid
% Solids: 90+-5%
Recommended Applications: Detergents, emulsifiers, wetting agents. Good oil solubilizer and solvent systems

SANDOPAN LS-24:
Sodium Laureth-13-Carboxylate
Clear to slightly hazy gel
% Solids: 69+-2%
Recommended Applications: Mild detergent, emulsifiers, solubilizers. Good for baby shampoos and personal care products.

SANDOPAN JA-36:
Trideceth-19-Carboxylic Acid
Clear to slightly hazy liquid
% Solids: 90+-2%
Moderate foaming mild surfactant. Oil solubilizer, wetting agent

SANDOZ CHEMICALS: SANDOPAN Carboxylated Surfactants (Continued):

SANDOPAN RS-8:
Sodium C16-20 Ethoxylate Carboxylate
Physical Form: Off white, firm paste
% Solids: 70+-2%
Recommended Applications: Emulsifier, solubilizer. Water dispersible

SANDOPAN MA-18:
Alkylaryl Ethoxylate Carboxylic Acid
Physical Form: Clear liquid
% Solids: 90+-3%
Recommended Applications: Detergent, wetting agent, solubilizer. Oil soluble surfactant

SANDOPAN KST:
Sodium Ceteth-13-Carboxylate
Physical Form: Solid
% Solids: 97+-2%
Recommended Applications: Emulsifier, detergent, lime soap dispersant. Good for stick and soap preparations.

SANDOPAN B Liquid:
Carboxylated, C4 Paraffinic Ethoxylate
Physical Form: Clear light, amber liquid
% Solids: 40+-5%
Non-foaming industrial surfactant with caustic stability

SANDOZ CHEMICALS: SANDOXYLATE SX Surfactants:

SANDOXYLATE SX Surfactants are a new nonionic alkoxylates. They offer the formulator a combination of desirable properties, particularly, low foam with excellent wetting properties.

SANDOXYLATE SX Surfactants will find use in a variety of household and industrial applications, in particular hard surface cleaners, textile wet-processing and as novel intermediates to anionic surfactants, such as sulfates, carboxylates and phosphates.

SX-408:
Liquid
% Active: 98+-2
Gardner Color: <1
Solubility (25% C, in H2O): Hazy at 1,5 & 10%
Cloud Point C (1% Aqueous): 22+-2
Specific Gravity (25/25C): 0.9650
pH (1% Solution): 6.5+-1

SX-412:
Liquid
% Active: 98+-2
Gardner Color: <1
Solubility (25% C, in H2O): Clear At 1,5 & 10%
Cloud Point C (1% Aqueous): 38+-2
Specific Gravity (25/25C): 0.9822
pH (1% Solution): 6.5+-1

SX-418:
Liquid
% Active: 98+-2
Gardner Color: <1
Solubility (25C, in H2O): Clear At 1,5 & 10%
Cloud Point C (1% Aqueous): 65+-2
Specific Gravity (25/25C): 1.007
pH (1% Solution): 6.5+-1

SX-424:
Solid
% Active: 98+-2
Gardner Color: <1
Solubility (25C, in H2O): Clear At 1,5 & 10%
Cloud Point C (1% Aqueous): 89+-2
Specific Gravity (25/25C): 1.0267
pH (1% Solution): 6.5+-1

SCHER CHEMICALS, INC.: Amido-Amines:

SCHERCODINE L:
CTFA Adopted Name: Lauramidopropyl Dimethylamine
Fatty Acid Source: Lauric
Light Tan Solid
MW: 284
Melting Point, C: 35-40
Free Amine, % (max): 1
Alkali Value: 196-206
Amide, % (min): 98
Cationic surfactant, intermediate for betaine amphoterics.

SCHERCODINE C:
CTFA Adopted Name: Cocamidopropyl Dimethylamine
Fatty Acid Source: Coconut
Tan Soft Solid
MW: 304
Free Amine, % (max): 1
Alkali Value: 177-187
Amide, % (min): 98
Good foaming, cationic surfactant for hair and bath preparations.

SCHERCODINE M:
CTFA Adopted Name: Myristamidopropyl Dimethylamine
Fatty Acid Source: Myristic
Light Tan Wax
MW: 312
Melting Point, C: 45-50
Free Amine, % (max): 1
Alkali Value: 180-190
Amide, % (min): 98
Cationic O/W emulsifier. Good conditioner and viscosity builder.

SCHERCODINE S:
CTFA Adopted Name: Stearamidopropyl Dimethylamine
Fatty Acid Source: Stearic
Tan Hard Flakes
MW: 368
Melting Point, C: 65-70
Free Amine, % (max): 1
Alkali Value: 145-155
Amide, % (min): 98
Softener, emulsifier and conditioner in hair and skin preparations.

** A wide variety of other fatty acid sources is available.

SCHER CHEMICALS, INC.: Amido-Amines (Continued):

SCHERCODINE I:
CTFA Adopted Name: Isostearamidopropyl Dimethylamine
Fatty Acid Source: Isostearic
Light Amber Liquid
MW: 394
Free Amine, % (max): 1
Alkali Value: 150-160
Amide, % (min): 98
Versatile, liquid, O/W cationic emulsifier. Good lubricant, especially for hair rinses and conditioners.

SCHERCODINE O:
CTFA Adopted Name: Oleamidopropyl Dimethylamine
Fatty Acid Source: Oleic
Amber Liquid
MW: 366
Free Amine, % (max): 1
Alkali Value: 150-160
Amide, % (min): 98
An emollient conditioner for hair and skin preparations. Offers excellent lubricating and moisturizing properties.

SCHERCODINE T:
CTFA Adopted Name: Tallamidopropyl Dimethylamine
Fatty Acid Source: Tall Oil
Amber Liquid
MW: 366
Free Amine, % (max): 1
Alkali Value: 150-160
Amide, % (min): 98
Excellent conditioner for cationic emulsions. Offers good substantivity and thickening properties.

SCHERCODINE B:
CTFA Adopted Name: Behenamidopropyl Dimethylamine
Fatty Acid Source: Behenyl
Tan Hard Flakes
MW: 394
Melting Point C: 63-68
Free Amine, % (max): 1
Alkali Value: 135-145
Amide, % (min): 98
Cationic emulsifier offering good conditioning properties for skin and hair preparations.

SCHER CHEMICALS, INC.: Amine Oxides:

SCHERCAMOX DML:
CTFA Adopted Name: Lauramine Oxide
Fatty Amine Source: Lauryl Dimethyl
Clear Liquid
Free Amine, % (max): 0.5
Free Peroxide, % (max): 0.3
Amine Oxide, % (min): 29
Wetting agent, foamer and foam stabilizer in shampoos, bath preparations, and shave creams.

SCHERCAMOX DMC:
CTFA Adopted Name: Cocamine Oxide
Fatty Amine Source: Cocoyl Dimethyl
Clear Yellow Liquid
Free Amine, % (max): 1
Free Peroxide, % (max): 0.5
Amine Oxide, (min): 29
Wetting agent. Foam stabilizer and viscosity enhancer.

SCHERCAMOX DMM:
CTFA Adopted Name: Myristamine Oxide
Fatty Amine Source: Myristyl Dimethyl
Clear Liquid
Free Amine, % (max): 0.5
Free Peroxide, % (max): 0.3
Amine Oxide, % (max): 29
Wetting and foaming agent. Foam booster in shampoos, bubble baths and dishwashing compounds.

SCHERCAMOX DMA:
CTFA Adopted Name: Myristamine Oxide
Fatty Amine Source: Alkyl Dimethyl
Viscous Liquid
Free Amine, % (max): 0.5
Free Peroxide, % (max): 0.3
Amine Oxide, % (min): 29
Suggested Applications: Same as for DMM.

SCHERCAMOX C-AA:
CTFA Adopted Name: Cocamidopropylamine Oxide
Fatty Amine Source: Coco Amido Propyl Dimethyl
Clear to Hazy Liquid
Free Amine, % (max): 0.5
Free Peroxide, % (max): 0.5
Amine Oxide, (min): 35
Wetting agent, detergent, foam booster, conditioner and viscosity builder in shampoos, hair coloring systems and bath preparations.

SCHER CHEMICALS, INC.: Amine Oxides (Continued):

SCHERCAMOX DMS:
CTFA Adopted Name: Stearamine Oxide
Fatty Amine Source: Stearyl Dimethyl
White Paste
Free Amine, % (max): 1.5
Free Peroxide, % (max): 0.5
Amine Oxide, % (min): 25
Conditioner and softener in hair rinses and shampoos. Foam stabilizer.

SCHERCAMOX CMA:
CTFA Adopted Name: Dihydroxyethyl Cocamine Oxide
Fatty Amine Source: Coco-Bis Hydroxyethyl
Clear Liquid
Free Amine, % (max): 1.5
Free Peroxide, % (max): 0.5
Amine Oxide, % (min): 38
Conditioner and foam stabilizer.

SCHER CHEMICALS, INC.: Betaine Amphoterics:*

SCHERCOTAINE CAB-A:
CTFA Adopted Name: Cocamidopropyl Betaine (and) Ammonium Chloride
Fatty Acid Source: Coconut
Clear Light Yellow Liquid
Dry Solids, % (min): 45
Salt Content, % (max): 5
pH: 5-7
Mild surfactant with higher foam than the sodium counterpart and decreasing defatting properties.

SCHERCOTAINE CAB:
CTFA Adopted Name: Cocamidopropyl Betaine
Fatty Acid Source: Coconut
Clear Light Yellow Liquid
Dry Solids, % (min): 45
Salt Content, % (min): 6.5
pH: 5-7
Detergent, wetting agent, excellent foamer and cloud point depressant used in non-irritating shampoos and bubble baths.

SCHERCOTAINE CAB-K:
CTFA Adopted Name: Cocamidopropyl Betaine (and) Potassium Chloride
Fatty Acid Source: Coconut
Clear Light Yellow Liquid
Dry Solids, % (min): 45
Salt Content, % (max): 3.5
pH: 5-7
Surfactant with increased solubility and lower cloud point; viscosity stabilizer in natural soap systems.

SCHERCOTAINE SCAB-A:
CTFA Adopted Name: Cocamidopropyl Hydroxy Sultaine (and) Ammonium Chloride
Fatty Acid Source: Coconut
Clear Light Yellow Liquid
Dry Solids, % (min): 50
Salt Content, % (max): 5.0
pH: 5-7
Low cloud point surfactant with higher foam and decreased defatting properties.

* Betaines from a wide variety of vegetable oils are available upon request.
Dry Solids, % (min): Lower concentrations are available.

SCHER CHEMICALS, INC.: Betaine Amphoterics (Continued):

SCHERCOTAINE SCAB:
CTFA Adopted Name: Cocamidopropyl Hydroxy Sultaine
Fatty Acid Source: Coconut
Clear Light Amber Liquid
Dry Solids, % (min): 50
Salt Content, % (max): 6.0
pH: 5-7
Very low cloud point detergent, wetting agent and excellent foamer.

SCHERCOTAINE SCAB-K:
CTFA Adopted Name: Cocamidopropyl Hydroxy Sultaine (and) Potassium Chloride
Fatty Acid Source: Coconut
Clear Light Yellow Liquid
Dry Solids, % (min): 50
Salt Content, % (max): 6.0
pH: 5-7
Low cloud point surfactant; viscosity stabilizer in natural soap systems.

SCHERCOTAINE MAB:
CTFA Adopted Name: Myristamidopropyl Betaine
Fatty Acid Source: Myristic
Clear Light Yellow Liquid
Dry Solids, % (min): 30
Salt Content, % (max): 5.0
pH: 5-7
Detergent, wetting agent, and thickening agent with anti-static properties for cosmetic and toiletry preparations.

SCHERCOTAINE PAB:
CTFA Adopted Name: Palmitamidopropyl Betaine
Fatty Acid Source: Palmitic
Soft Light Yellow Gel
Dry Solids, % (min): 35
Salt Content, % (max): 5.5
pH: 5-7
Thickening agent, good hair and skin conditioner for lotions and cream rinses.

SCHER CHEMICALS, INC.: Betaine Amphoterics (Continued):

SCHERCOTAINE IAB:
CTFA Adopted Name: Isostearamidopropyl Betaine
Fatty Acid Source: Isostearic
Soft Amber Gel
Dry Solids, % (min): 35
Salt Content, % (max): 4.5
pH: 5-7
Detergent with excellent conditioning properties. Recommended for mild shampoos and emollient body treatments.

SCHERCOTAINE UAB:
CTFA Adopted Name: Undecylenamidopropyl Betaine
Fatty Acid Source: Undecylenic
Clear Amber Liquid
Dry Solids, % (min): 35
Salt Content, % (max): 5.5
pH: 5-7
Surfactant with possible germicidal/bactericidal activity; recommended for shampoos.

SCHERCOTAINE APAB:
CTFA Adopted Name: Apricotamidopropyl Betaine
Fatty Acid Source: Apricot Kernel Oil
Clear Amber Liquid
Dry Solids, % (min): 35
Salt Content, % (max): 4.0
pH: 5-7
Mild detergent with good conditioning and emolliency properties. Viscosity enhancer.

SCHERCOTAINE WOAB:
CTFA Adopted Name: Wheatgermamidopropyl Betaine
Fatty Acid Source: Wheat Germ Oil
Clear Amber Liquid
Dry Solids, % (min): 35
Salt Content, % (max): 4.0
pH: 5-7
Mild surfactant derived from a natural source. Good conditioner; imparts good body to hair.

SCHER CHEMICALS, INC.: Imidazolines:

SCHERCOZOLINE L:
CTFA Adopted Name: Lauryl Hydroxyethyl Imidazoline
Fatty Acid Source: Lauric
Cream-Colored Solid
MW: 268
Melting Point, C: 38-42
Free Amine, % (max): 3
Alkali Value: 204-214
Imidazoline, % (min): 90
Detergent, wetting agent and antistat. Intermediate for quaternary ammonium compounds.

SCHERCOZOLINE C:
CTFA Adopted Name: Cocoyl Hydroxyethyl Imidazoline
Fatty Acid Source: Coconut
Tan Semi-Solid
MW: 278
Free Amine, % (max): 3
Alkali Value: 200-214
Imidazoline, % (min): 90
Suggested Applications: Same as for L.

SCHERCOZOLINE I:
CTFA Adopted Name: Isostearyl Hydroxyethyl Imidazoline
Fatty Acid Source: Isostearic
Clear Amber Liquid
MW: 378
Free Amine, % (max): 3
Alkali Value: 150-160
Imidazoline, % (min): 90
Suggested Applications: Same as for S.

SCHERCOZOLINE O:
CTFA Adopted Name: Oleyl Hydroxyethyl Imidazoline
Fatty Acid Source: Oleic
Clear Dark Amber Liquid
MW: 350
Free Amine, % (max): 3
Alkali Value: 160-170
Imidazoline, % (min): 90
W/O emulsifier, corrosion inhibitor, Intermediate for quaternary ammonium compounds.

SCHER CHEMICALS, INC.: Imidazolinium Amphoterics:*

SCHERCOTERIC CY-2:
CTFA Adopted Name: Disodium Capryloamphodiacetate
Fatty Acid Source: Caprylic
Hydrophilic Group (Carboxylate): Di
Clear Amber Liquid
Dry Solids, % (min): 50
Salt Content, % (max): 11
Low-foaming surfactant with good cleaning properties for household and industrial cleaners.

SCHERCOTERIC MS:
CTFA Adopted Name: Sodium Cocoamphoacetate
Fatty Acid Source: Coconut
Hydrophilic Group (Carboxylate): Mono
Clear Amber Viscous Liquid
Dry Solids, % (min): 45
Salt Content, % (max): 9
Mild detergent, excellent foam height and stability. For shampoos and industrial cleaners.

SCHERCOTERIC MS-2:
CTFA Adopted Name: Disodium Cocoamphodiacetate
Fatty Acid Source: Coconut
Hydrophilic Group (Carboxylate): Di
Clear Amber Viscous Liquid
Dry Solids, % (min): 45
Salt Content, % (max): 10
Suggested Applications: Same as for MS.

SCHERCOTERIC MS-EP:
CTFA Adopted Name: Sodium Cocoamphohydroxypropyl Sulfonate
Fatty Acid Source: Coconut
Hydrophilic Group (Carboxylate): Mono (Sulfonate)
Clear Amber Liquid
Dry Solids, % (min): 45
Salt Content, % (max): 6
Excellent surfactant. Remarkable flash foam with low skin irritation and low cloud point.

* Amphoterics from a wide variety of other fatty acid homologs are available.

SCHER CHEMICALS, INC.: Imidazolinium Amphoterics (Continued):

SCHERCOTERIC I-AA:
CTFA Adopted Name: Sodium Isostearoamphopropionate
Fatty Acid Source: Isostearic
Hydrophilic Group (Carboxylate): Mono
Amber Viscous Liquid
Dry Solids, % (min): 34
Salt Content, % (max): 0
Specialty surfactant for cosmetic and industrial cleaners.

SCHERCOTERIC O-AA:
CTFA Adopted Name: Sodium Oleoamphopropionate
Fatty Acid Source: Oleic
Hydrophilic Group (Carboxylate): Mono
Clear Amber Liquid
Dry Solids, % (min): 80
Salt Content, % (max): 0
Specialty surfactant for dry-cleaning industry, applicable for other industrial cleaners.

SCHER CHEMICALS INC.: Specialty Quats (Mono):*

SCHERCOQUAT CAS:
CTFA Adopted Name: Cocamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Coconut
Hydrophilic Group: Ethyl Sulfate
MW: 445
Amber Viscous Liquid
Dry Solids, % (min): 98
Concentrated liquid cationic surfactant with excellent water solubility and foam height. Static control properties.

SCHERCOQUAT SAS:
CTFA Adopted Name: Stearamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Stearic
Hydrophilic Group: Ethyl Sulfate
MW: 508
Yellow Liquid
Dry Solids, % (min): 80
An excellent conditioner for hair rinses. Provides body and bounce to hair; improves shine.

SCHERCOQUAT IAS:
CTFA Adopted Name: Isostearamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Isostearic
Hydrophilic Group: Ethyl Sulfate
MW: 550
Amber Viscous Liquid
Dry Solids, % (min): 90
Highly concentrated liquid quaternary. Good compatibility with most anionic surfactants and good water solubility. Recommended for clear conditioning shampoos where it contributes body, combability, and antistatic properties.

SCHERCOQUAT IEP:
CTFA Adopted Name: Quaternium-62 or Isostearamidopropyl Epoxypropyldimonium Chloride
Fatty Acid Source: Isostearic
Hydrophilic Group: Epoxypropyl Chloride
MW: 486
Amber Viscous Liquid
Dry Solids, % (min): 80
A unique type of specialty quaternary. Good water solubility due to the epoxide ring. Good compatibility with many anionic surfactants.

* Scher is able to supply many other amido-amine quaternaries based on a wide variety of vegetable oils.

SCHER CHEMICALS, INC.: Specialty Quats (Mono) (Continued):

SCHERCOQUAT IIS:
CTFA Adopted Name: Isostearyl Ethyl Imidonium Ethosulfate
Fatty Acid Source: Isostearic
Hydrophilic Group: Ethyl Sulfate
MW: 532
Dark Amber Viscous Liquid
Dry Solids, % (min): 98
Very highly concentrated quaternary. Extremely effective conditioner. Recommended for all skin and hair products where it enhances softness to skin and fullness and body to hair.

SCHERCOQUAT DAS:
CTFA Adopted Name: Quaternium-61
Fatty Acid Source: Dimer
Hydrophilic Group: Ethyl Sulfate
MW: 1050
Amber Viscous Liquid
Dry Solids, % (min): 90
Highly concentrated liquid quaternary of the unique dimer acid, which enhances its performance as a hair and skin conditioner, especially in low irritation cosmetic preparations. Possesses the ability to exhaust from dilute solutions to negatively charged substrates due to its double positive charge.

SCHERCOQUAT SOAS:
CTFA Adopted Name: Soyamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Soya Oil
Hydrophilic Group: Ethyl Sulfate
MW: 516
Amber Viscous Liquid
Dry Solids, % (min): 90
Low-cost, highly concentrated liquid quaternary. Effective in hair conditioners, offering good slip, shine and combability.

SCHERCOQUAT FOAS:
CTFA Adopted Name: Safflowerami dopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Safflower Oil
Hydrophilic Group: Ethyl Sulfate
MW: 520
Amber Viscous Liquid
Dry Solids, % (min): 90
Applications: Similar to SOAS.

SCHER CHEMICALS, INC.: Specialty Quats (Mono) (Continued):

SCHERCOQUAT ROAS:
CTFA Adopted Name: Rapeseedamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Rapeseed Oil
Hydrophilic Group: Ethyl Sulfate
MW: 560
Amber Viscous Liquid
Dry Solids, % (min): 90
An excellent, low-cost conditioning agent, especially for dry and over-processed hair. In anionic systems it often acts as a viscosity builder.

SCHERCOQUAT ROEP:
CTFA Adopted Name: Rapeseedamidopropyl Epoxypropyl Dimonium Chloride
Fatty Acid Source: Rapeseed Oil
Hydrophilic Group: Epoxypropyl Chloride
MW: 533
Dark Amber Viscous Liquid
Dry Solids, % (min): 80
A low-cost, water-soluble liquid conditioner with good compatibility with anionic and nonionic surfactants. Recommended for use in conditioning shampoos and hair sprays.

SCHERCOQUAT BAS:
CTFA Adopted Name: Behenamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Behenic
Hydrophilic Group: Ethyl Sulfate
MW: 548
Amber Liquid
Dry Solids, % (min): 50
Strong conditioning properties due to long chain length. Excellent for dry and over-processed hair.

SCHERCOQUAT APAS:
CTFA Adopted Name: Apricotamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Apricot Kernel Oil
Hydrophilic Group: Ethyl Sulfate
MW: 515
Amber Viscous Liquid
Dry Solids, % (min): 90
Natural, mild conditioner; imparts good slip and shine.

SCHER CHEMICALS, INC.: Specialty Quats (Mono) (Continued):

SCHERCOQUAT WOAS:
CTFA Adopted Name: Wheatgermamidopropyl Ethyldimonium Ethosulfate
Fatty Acid Source: Wheat Germ Oil
Hydrophilic Group: Ethyl Sulfate
MW: 528
Amber Viscous Liquid
Dry Solids, % (min): 90
Mild conditioner from a natural source which has Vitamin E.

SCHERCOQUAT COAS:
Fatty Acid Source: Canola Oil
Hydrophilic Group: Ethyl Sulfate
MW: 529
Amber Viscous Liquid
Natural, mild hair and skin conditioner; imparts good slip and velvety feel.

SCHER CHEMICALS, INC.: Sulfosuccinates:

SCHERCOPOL LPS:
CTFA Adopted Name: Disodium Laureth-sulfosuccinate
Fatty Acid Source: Lauric
Clear Yellow Liquid
Dry Solids, % (min): 39
Sodium Bisulfite, % (max): 0.3
pH: 5-7
Mild, high-foaming surfactant; viscosity enhancer when used with alkylsulfates and sulfonates.

SCHERCOPOL CMS-Na:
CTFA Adopted Name: Disodium Cocamido MEA Sulfosuccinate
Fatty Acid Source: Coconut
Clear Yellow Liquid
Dry Solids, % (min): 29
Sodium Bisulfite, % (max): 0.3
pH: 5-7
Mild detergent for shampoos, bubble baths, liquid dishwashing compounds, rug and upholstery shampoos.

SCHERCOPOL OMS-Na:
CTFA Adopted Name: Disodium Oleamido MEA Sulfosuccinate
Fatty Acid Source: Oleic
Light Amber Liquid
Dry Solids, % (min): 34
Sodium Bisulfite, % (max): 0.3
pH: 5-7
Non-irritating, high-foaming surfactant for facial scrubs, bubble baths, and mild shampoos.

SCHERCOPOL DOS-70:
CTFA Adopted Name: Dioctyl Sodium Sulfosuccinate
Fatty Acid Source: Succinic
Viscous Liquid
Dry Solids, % (min): 70
Sodium Bisulfite, % (max): 0.3
pH: 6-8
Good wetting agent and surface tension depressant.

SCHERCOPOL DOS-PG-85:
CTFA Adopted Name: Dioctyl Sodium Sulfosuccinate
Fatty Acid Source: Succinic
Viscous Liquid
Dry Solids, % (min): 85
Sodium Bisulfite, % (max): 0.3
pH: 6-8
Suggested Applications: Same as for DOS-70.

SCHER CHEMICALS, INC.: 1:1 Fatty Acid Diethanolamides*:

SCHERCOMID SL-Extra:
CTFA Adopted Name: Lauramide DEA
Fatty Acid Source: Lauric
White Crystalline Solid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 20-40
Amide, % (min): 87
Good thickener, foam stabilizer, wetting agent and detergent used in shampoos, lotions, liquid dishwashing compounds.

SCHERCOMID SLM-S:
CTFA Adopted Name: Lauramide DEA
Fatty Acid Source: Lauric-Myristic
White Crystalline Solid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 20-40
Amide, % (min): 87
Very good thickener, foam stabilizer, wetting agent and detergent used in cosmetic and toiletry products.

SCHERCOMID SLM-LC:
CTFA Adopted Name: Lauramide DEA
Fatty Acid Source: Lauric-Myristic
Clear Amber Liquid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 30-50
Amide, % (min): 85
A concentrated liquid amide with good wetting properties. Also a good thickener and foam stabilizer.

SCHERCOMID SL-ML:
CTFA Adopted Name: Lauramide DEA
Fatty Acid Source: Modified Lauric-Myristic
Clear Light Amber Liquid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 20-40
Amide, % (min): 87
Detergent, auxiliary skin and hair conditioner, foam stabilizer. Excellent foam-building characteristics.

* Many additional amides are available based on a variety of vegetable oils.

SCHER CHEMICALS, INC.: 1:1 Fatty Acid Diethanolamides (Continued):

SCHERCOMID SCE:
CTFA Adopted Name: Cocamide DEA
Fatty Acid Source: Coconut
Clear Light Amber Liquid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 20-40
Amide, % (min): 87
Detergent, low-irritating thickener and foam stabilizer for cosmetic preparations and household cleaners.

SCHERCOMID SCO-Extra:
CTFA Adopted Name: Cocamide DEA
Fatty Acid Source: Coconut Oil
Clear Light Amber Liquid
Ionic Nature: N
Acid Value (max): 3
Alkali Value: 20-40
Amide, % (min): 80
Emulsifier, foam stabilizer, wetting agent for household and industrial detergents.

SCHERCOMID SO-A:
CTFA Adopted Name: Oleamide DEA
Fatty Acid Source: Oleic
Clear Amber Liquid
Ionic Nature: N/A
Acid Value (max): 5
Alkali Value: 40-60
Amide, % (min): 85
W/O emulsifier, lubricant, and conditioner.

SCHERCOMID SO-T:
CTFA Adopted Name: Tallamide DEA
Fatty Acid Source: Tall Oil
Clear Amber Liquid
Ionic Nature: N/A
Acid Value (max): 15
Alkali Value: 40-50
Amide, % (min): 85
W/O emulsifier.

SCHER CHEMICALS, INC.: 1:1 Fatty Acid Diethanolamides (Continued):

SCHERCOMID SLE:
CTFA Adopted Name: Linoleamide DEA
Fatty Acid Source: Linoleic
Clear Amber Liquid
Ionic Nature: N
Acid Value (max): 1
Alkali Value: 20-40
Amide, % (min): 87
Good W/O emulsifier and emulsion stabilizer for O/W emulsions, and outstanding thickener.

SCHERCOMID SLS:
CTFA Adopted Name: Soyamide DEA
Fatty Acid Source: Soya Oil
Clear Amber Liquid
Ionic Nature: N
Acid Value (max): 2
Alkali Value: 20-40
Amide, % (min): 82
Suggested Applications: Same as for SLE.

SCHERCOMID SAP:
CTFA Adopted Name: Apricotamide DEA
Fatty Acid Source: Apricot Kernel Oil
Clear Amber Liquid
Ionic Nature: N
Acid Value (max): 3
Alkali Value: 20-40
Amide, % (min): 80
Thickener and foam stabilizer for natural and herbal shampoos.

SCHERCOMID SWG:
CTFA Adopted Name: Wheatgermamide DEA
Fatty Acid Source: Wheat Germ Oil
Clear Amber Liquid
Ionic Nature: N
Acid Value (max): 3
Alkali Value: 20-40
Amide Value, % (min): 80
Suggested Applications: Same as for SAP.

SHELL CHEMICAL CO.: NEODOL Alcohols:

91:
Carbon chains present: C9/C10/C11
Molecular weight: 160
Active content, %w: 100
Melting range, F: 3-25
Pour point, F: 10
Color, APHA (Pt-Co): 0-5
Sp. gravity, 77/77F: 0.829
Viscosity, cSt @ 100F: 9
Acid value, eq/100g: <0.001
Carbonyl value, ppm as C=O: 25
Hydroxyl value, eq/100g: 0.62
Hydroxyl number, mgKOH/g: 350
Flash point, PMCC, F: 228
Water, %w: 0.02

1:
Carbon chains present: C11
Molecular weight: 173
Active content, %w: 100
Melting range, F: 42-57
Pour point, F: 52
Color, APHA (Pt-Co): 0-5
Sp. gravity, 77/77F: 0.831
Viscosity, cSt @ 100F: 11
Acid value, eq/100g: <0.001
Carbonyl value, ppm as C=O: 25
Hydroxyl value, eq/100g: 0.58
Hydroxyl number, mgKOH/g: 324
Flash point, PMCC, F: 250
Water, %w: 0.02

23:
Carbon chains present: C12/C13
Molecular weight: 194
Active content, %w: 100
Melting range, F: 45-72
Pour point, F: 63
Color, APHA (Pt-Co): 0-5
Sp. gravity, 77/77F: 0.833
Viscosity, cSt @ 100F: 14
Acid value, eq/100g: <0.001
Carbonyl value, ppm as C=O: 37
Hydroxyl value, eq/100g: 0.52
Hydroxyl number, mgKOH/g: 289
Flash point, PMCC, F: 279
Water, %w: 0.02

SHELL CHEMICAL CO.: NEODOL Alcohols (Continued):

25:

Carbon chains present: C12/C13/C14/C15
Molecular weight: 203
Active content, %w: 100
Melting range, F: 54-77
Pour point, F: 66
Color, APHA (Pt-Co): 0-5
Sp. gravity, 77/77F: 0.834
Viscosity, cSt @ 100F: 15
Acid value, eq/100g: <0.001
Carbonyl value, ppm as C=O: 41
Hydroxyl value, eq/100g: 0.49
Hydroxyl number, mgKOH/g: 276
Flash point, PMCC, F: 286
Water, %w: 0.02

45:

Carbon chains present: C14/C15
Molecular weight: 218
Active content, %w: 100
Melting range, F: 59-97
Pour point, F: 84
Color, APHA (Pt-Co): 0-5
Sp. gravity, 77/77F: 0.820
Viscosity, cSt @ 100F: 18
Acid value, eq/100g: <0.001
Carbonyl value, ppm as C=O: 50
Hydroxyl value, eq/100g: 0.46
Hydroxyl number, mgKOH/g: 257
Flash point, PMCC, F: 315
Water, %w: 0.02

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates:

91-2.5:
EO groups/alcohol, mole/mole, avg.: 2.7
Molecular weight: 281
Active content, %w: 100
EO content, %w: 42.3
Melting range, F: -31 to -2
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.925
Viscosity, cSt @ 100F: 12
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.36
Hydroxyl number, mgKOH/g: 200
HLB No.: 8.5
Flash point, PMCC, F: 255
Cloud point, 1% aq. soln., F: 35.8
Pour point, F: 9
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

91-6:
EO groups/alcohol, mole/mole, avg.: 6.1
Molecular weight: 428
Active content, %w: 100
EO content, %w: 62.7
Melting range, F: 21-52
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.984
Viscosity, cSt @ 100F: 23
Acid Value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.23
Hydroxyl number, mgKOH/g: 131
HLB No.: 12.5
Flash point, PMCC, F: 289
Cloud point, 1% aq. soln., F: 12.5
Pour point, F: 43
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

91-8:
EO groups/alcohol, mole/mole, avg.: 8.2
Molecular weight: 519
Active content, %w: 100
EO content, %w: 69.5
Melting range, F: 45-68
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 1.008
Viscosity, cSt @ 100F: 39
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.19
Hydroxyl number, mgKOH/g: 108
HLB No.: 13.9
Flash point, PMCC, F: 318
Cloud point, 1% aq. soln., F: 176
Pour Point, F: 59
pH, 1% aq. soln.: 6.0

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates (Continued):

23-1:
EO groups/alcohol, mole/mole, avg.: 1.0
Molecular weight: 238
Active content, %w: 100
EO content, %w: 18.5
Melting range, F: 27-48
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.873
Viscosity, cSt @ 100F: 13
Acid Value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.42
Hydroxyl number, mgKOH/g: 236
HLB No.: 3.7
Flash point, PMCC, F: 289
Cloud point, 1% aq. soln., F: 13.6
Pour point, F: 41
pH, 1% aq. soln.: 10.1
Water, %w: 0.02

23-3:
EO groups/alcohol, mole/mole, avg.: 2.9
Molecular weight: 322
Active content, %w: 100
EO content, %w: 39.6
Melting range, F: 19-37
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.922
Viscosity, cSt @ 100F: 14
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.31
Hydroxyl number, mgKOH/g: 174
HLB No.: 7.9
Flash point, PMCC, F: 306
Cloud point, 1% aq. soln., F: 33.1
Pour point, F: 34
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

23-5:
EO groups/alcohol, mole/mole, avg.: 5.0
Molecular weight: 413
Active content, %w: 100
EO content, %w: 53.3
Melting range, F: 27-61
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.965
Viscosity, cSt @ 100F: 23
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.24
Hydroxyl number, mgKOH/g: 136
HLB No.: 10.7
Flash point, PMCC, F: 315
Pour point, F: 45
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates (Continued):

23-6.5:
EO groups/alcohol, mole/mole, avg.: 6.7
Molecular weight: 488
Active content, %w: 100
EO content, %w: 60.4
Melting range, F: 39-70
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.984
Viscosity, cSt @ 100F: 29
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.20
Hydroxyl number, mgKOH/g: 115
HLB No.: 12.1
Flash point, PMCC, F: 334
Cloud point, 1% aq. soln., F: 113
Pour point, F: 59
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

23-6.5T:
EO groups/alcohol, mole/mole, avg.: 7.6
Molecular weight: 529
Active content, %w: 100
EO content, %w: 63.2
Melting range, F: 36-66
Color, APHA (Pt-Co): 10-15
Sp. gravity, 77/77F: 0.993
Viscosity, cSt @ 100F: 33
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.19
Hydroxyl number, mgKOH/g: 106
HLB No.: 12.6
Flash point, PMCC, F: 448
Cloud point, 1% aq. soln., F: 147
Pour point, F: 61
pH, 1% aq. soln.: 6.5
Water, %w: 0.02

23-12:
EO groups/alcohol, mole/mole, avg.: 11.9
Molecular weight: 719
Active content, %w: 100
EO content, %w: 72.8
Melting range, F: 63-90
Color, APHA (Pt-Co): 10-20
Sp. gravity, 77/77F: 1.006
Viscosity, cSt @ 100F: 53
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.14
Hydroxyl number, mgKOH/g: 78
HLB No.: 14.6
Flash point, PMCC, F: 399
Cloud point, 1% aq. soln., F: 177
Pour point, F: 79
pH, 1% aq. soln.: 10.1

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates (Continued):

25-3:
EO groups/alcohol, mole/mole, avg.: 3.0
Molecular weight: 338
Active content, %w: 100
EO content, %w: 39.0
Melting range, F: 27-45
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.921
Viscosity, cSt @ 100F: 19
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.30
Hydroxyl number, mgKOH/g: 166
HLB No.: 7.8
Flash point, PMCC, F: 315
Cloud point, 1% aq. soln., F: 30
Pour point, F: 37
pH, 1% aq. soln.: 7.1
Water, %w: 0.02

25-7:
EO groups/alcohol, mole/mole, avg.: 7.3
Molecular weight: 524
Active content, %w: 100
EO content, %w: 61.3
Melting range, F: 36-70
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.965
Viscosity, cSt @ 100F: 34
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.19
Hydroxyl number, mgKOH/g: 12.3
HLB No.: 367
Flash point, PMCC, F: 367
Cloud point, 1% aq. soln., F: 121
Pour point, F: 66
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

25-9:
EO groups/alcohol, mole/mole, avg.: 8.9
Molecular weight: 597
Active content, %w: 100
EO content, %w: 65.6
Melting range, F: 57-77
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.982
Viscosity, cSt @ 100F: 41
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.17
Hydroxyl number, mgKOH/g: 94
HLB No.: 13.1
Flash point, PMCC, F: 370
Cloud point, 1% aq. soln., F: 163
Pour point, F: 70
pH, 1% aq. soln.: 6.0

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates (Continued):

25-12:
EO groups/alcohol, mole/mole, avg.: 11.9
Molecular weight: 729
Active content, %w: 100
EO content, %w: 71.8
Melting range, F: 68-86
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.999
Viscosity, cSt @ 100F: 53
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.14
Hydroxyl number, mgKOH/g: 77
HLB No.: 14.4
Flash point, PMCC, F: 433
Cloud point, 1% aq. soln., F: 173
Pour point, F: 81
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

45-2.25:
EO groups/alcohol, mole/mole, avg.: 2.29
Molecular weight: 319
Active content, %w: 100
EO content, %w: 31.6
Melting range, F: 48-68
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.903
Viscosity, cSt @ 100F: 19
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.31
Hydroxyl number, mgKOH/g: 176
HLB No.: 6.3
Flash point, PMCC, F: 336
Cloud point, 1% aq. soln., F: 21
Pour point, F: 59
Water, %w: 0.02

45-7:
EO groups/alcohol, mole/mole, avg.: 7.1
Molecular weight: 529
Active content, %w: 100
EO content, %w: 59.0
Melting range, F: 48-75
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 0.959
Viscosity, cSt @ 100F: 35
Acid value, eq/100g: <0.001
Hydroxyl value, eq./100g: 0.19
Hydroxyl number, mgKOH/g: 106
HLB No.: 11.8
Flash point, PMCC, F: 365
Cloud point, 1% aq. soln., F: 112
Pour point, F: 66
pH, 1% aq. soln.: 6.0
Water, %w: 0.02

SHELL CHEMICAL CO.: NEODOL Alcohol Ethoxylates (Continued):

45-7T:
EO groups/alcohol, mole/mole, avg.: 7.9
Molecular weight: 567
Active content, %w: 100
EO content, %w: 61.3
Melting range, F: 46-73
Color, APHA (Pt-Co): 10-15
Sp. gravity, 77/77F: 0.966
Viscosity, cSt @ 100F: 39
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.18
Hydroxyl number, mgKOH/g: 99
HLB No.: 12.3
Flash point, PMCC, F: 441
Cloud point, 1% aq. soln., F: 131
Pour point, F: 66
pH, 1% aq. soln.: 6.8
Water, %w: 0.02

45-13:
EO groups/alcohol, mole/mole, avg.: 13.0
Molecular weight: 790
Active content, %w: 100
EO content, %w: 72.4
Melting range, F: 77-93
Color, APHA (Pt-Co): 5-10
Sp. gravity, 77/77F: 1.003
Viscosity, cSt @ 100F: 59
Acid value, eq/100g: <0.001
Hydroxyl value, eq/100g: 0.13
Hydroxyl number, mgKOH/g: 71
HLB No.: 14.5
Flash point, PMCC, F: 480
Cloud point, 1% aq. soln., F: 178
Pour point, F: 86
pH, 1% aq. soln.: 6.4
Water, %w: 0.02

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants:

Alkanolamides:
1:1 Monoethanolamides:

VARAMIDE C-212:
Coco Monoethanolamide
Flake
% Solids: 100
Foam stabilizers, degreasers, and viscosity boosters.

1:1 Diethanolamides:

VARAMIDE MA-1:
Coconut Diethanolamide
Liquid
% Solids: 100
General purpose foam stabilizer, degreaser, and viscosity builder.

VARAMIDE ML-1:
Lauric Diethanolamide
Wax
% Solids: 100
VARAMIDE ML-4:
Lauric/Myristic Diethanolamide
Wax
% Solids: 100
Excellent foam stabilizers and viscosity builders for high-foam, quality aqueous surfactant systems.

2:1 Diethanolamides:

VARAMIDE A-2:
Coconut Diethanolamide
Liquid
% Solids: 100
Standard 2:1 Coco Diethanolamide. Excellent for custom modification.

VARAMIDE A-7:
Oleic Diethanolamide
Liquid
% Solids: 100
Excellent base for oil emulsions, degreasers, and anti-corrosive cleaners.

VARAMIDE A-10:
Modified Coco Diethanolamide
Liquid
% Solids: 100
General purpose detergent and viscosity builder with salt.

SHEREX CHEMICALS CO., INC.: Household & Industrial Surfactants (Continued):

Alkanolamides (Continued):
2:1 Diethanolamides (Continued):

VARAMIDE A-12:
Modified Coco Diethanolamide
Liquid
% Solids: 100
Used instead of A-10 at high-salt or high-phosphate levels.

VARAMIDE A-83:
Modified Coco Diethanolamide
Liquid
% Solids: 100
Excellent detergent base for super-concentrated formulations.

VARAMIDE AC-28:
Modified mixed Diethanolamide
Liquid
% Solids: 100
Emulsifier and anti-corrosive for formulations contacting metal.

Ethoxylated Alkanolamides:

VARAMIDE T-55:
Tallow Monoethanolamide Ethoxylate
Paste
% Solids: 100
Ethoxylated detergent base which is tolerant to high builder levels and hard water.

Amphoterics:
Glycinates:

REWOTERIC AM 2C W:
Disodium Coco Amphodiacetate
Liquid
% Solids: 50
High foaming, mild surfactant for liquid soaps and hand cleaners.

REWOTERIC AM 2L-40:
Disodium Coco Amphodiacetate
Liquid
% Solids: 50
High foaming, mild surfactant with narrowed chain length distribution.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Amphoterics (Continued):
Glycinates (Continued):

REWOTERIC AM TEG:
Tallow Glycinate
Liquid
% Solids: 50
Thickens acid systems.

REWOTERIC AM V:
Caprylic Glycinate
Liquid
% Solids: 35
Good coupler for use in wetting hydrophobic soils such as soap scum.

Betaines:

REWOTERIC AM B-13:
Cocamidopropyl Dimethyl Betaine
Liquid
% Solids: 35
Mild foam booster, viscosity builder, and lime-soap dispersant. Made from whole coconut oil.

REWOTERIC AM B-14:
Cocamidopropyl Dimethyl Betaine
Liquid
% Solids: 35
Mild foam booster, viscosity builder, and lime-soap dispersant. Made from whole coconut oil.

REWOTERIC AM B-15:
Cocamidopropyl Dimethyl Betaine
Liquid
% Solids: 35
Liquid soaps, all-purpose cleaners.

REWOTERIC AM DLM-35:
Lauryl Betaine
Liquid
% Solids: 35
Foaming agent in acid systems.

Low-Salt Betaines:
REWOTERIC AM B-14 LS:
Cocamidopropyl Betaine
Liquid
% Solids: 35
Low-salt version of AM B-15.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Amphoterics (Continued):
Sultaines:

REWOTERIC AM CAS:
Cocamidopropyl Hydroxy Sultaine
Liquid
% Solids: 50
CAS-15 made from whole coconut oil.

REWOTERIC AM CAS-15:
Cocamidopropyl Hydroxy Sultaine
Liquid
% Solids: 50
Oil field surfactants with good salt compatibility. Best solubility of all sultaines, excellent cleaner.

REWOTERIC AM HC:
Coco Hydroxy Sultaine
Liquid
% Solids: 50
Wetting agent which is stable in 40% sodium hydroxide, and an excellent coupler.

Salt-Free Propionates:
REWOTERIC AM LP:
Sodium Lauryliminodipropionate
Liquid
% Solids: 40
High-foaming surfactant for personal hygiene products.

REWOTERIC AM KSF-40:
Coco Amphopropionate
Liquid
% Solids: 40
Heavy-duty and truck-wash cleaners, where coupling ability with foam and detergency are needed in high-electrolyte/surfactant systems.

REWOTERIC AM 2CSF:
Coco Amphodipropionate
Liquid
% Solids: 40
Excellent coupler and detergent in high-electrolyte formulations.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Transportation Cleaners:
Car Rinse Emulsifiers:

CARSPRAY #2:
Dicoco Quat
Liquid
% Solids: 100
Emulsifier plus glycol ether.

CARSPRAY 205:
Nonionic Emulsifier
Liquid
% Solids: 100
Car rinse emulsion aid and co-emulsifier.

CARSPRAY 300:
Dicoco Quat
Liquid
% Solids: 75
Standard high-beading emulsifier for car rinse.

CARSPRAY 300HF:
Dicoco Quat
Liquid
% Solids: 100
High-flash version of CS300.

CARSPRAY 400:
Quat Emulsifier
Liquid
% Solids: 80
Cost-effective emulsifier, promotes water sheeting.

CARSPRAY 500:
Quat Blend
Liquid
% Solids: 60
Silicone-based rinse aid and clear-coat protection.

CARSPRAY 650:
Quat Blend
Liquid
% Solids: 53
Premium car rinse with silicone and Carnauba wax for maximum finish protection.

CARSPRAY 700:
Quat Blend
Liquid
% Solids: 61
High-foaming rinse aid.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Transportation Cleaners (Continued):
Specialty Auto Products:

CARNAUBA Spray 200:
Quat Blend
Liquid
% Solids: 63
Carnauba wax-based commercial car wax.

CARSPRAY CW:
Quat/Surfactant Blend
Liquid
% Solids: 58
"Wash and Wax" concentrate.

Ethoxylated Alcohols:

AROSURF 66-E2:
PEG-2 Isostearyl Ether
HLB: 4.6
Liquid
% Solids: 100
Emulsion stabilizer, perfume stabilizer.

AROSURF 66-E10:
PEG-10 Isostearyl Ether
HLB: 12.0
Paste
% Solids: 100
Emulsifier, emollient.

AROSURF 66-E20:
PEG-20 Isostearyl Ether
HLB: 18.0
Paste
% Solids: 100
Emulsifier.

AROSURF 66-PE12:
PPG-3 PEG-9 Isostearyl Ether
HLB: 12.2
Liquid
% Solids: 100
Low cloud point emulsifier and emollient, and perfume solubilizer.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Ethoxylated Alcohols (Continued):

VARONIC 32-E20:
Ethoxylated Oleyl Alcohol
HLB: 11.3
Paste
% Solids: 100
Emulsifier, detergent, solubilizer.

VARONIC MT 65:
Methyl Capped Alkoxylated Fatty Alcohol
Liquid
% Solids: 100
Low foam detergent, textile spinning lubricant.

VARONIC 63-E20:
Ethoxylated Cetearyl Alcohol
HLB: 15.7
Flake
% Solids: 100
Emulsifier, detergent, solubilizer.

Ethoxylated Amines:

Coconut Amine Ethoxylates:

VARONIC K202:
PEG-2 Cocamine
HLB: 6.2
Liquid
% Solids: 100

VARONIC K205:
PEG-5 Cocamine
HLB: 11.0
Liquid
% Solids: 100
Emulsifiers, textile lubricants, oil field emulsification needs.

VARONIC K210:
PEG-10 Cocamine
HLB: 13.8
Liquid
% Solids: 100
Dye leveling agent, dispersant in paper industry.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Ethoxylated Amines (Continued):
Coconut Amine Ethoxylates (Continued):

VARONIC K215:
PEG-15 Cocamine
HLB: 15.4
Liquid
% Solids: 100
Rayon spinning baths, textile finishing.

VARONIC K215LC:
PEG-15 Cocamine
HLB: 15.4
Liquid
% Solids: 100
Low-color K215

Tallow Amine Ethoxylates:

VARONIC T202 SR:
PEG-2 Tallow Amine
HLB: 5.1
Paste
% Solids: 100
Special grade for optimum viscosity control in acid cleaners.

VARONIC T202:
PEG-2 Tallow Amine
HLB: 5.1
Paste
% Solids: 100
VARONIC T205:
PEG-5 Tallow Amine
HLB: 9.2
Liquid
% Solids: 100
VARONIC T210:
PEG-10 Tallow Amine
HLB: 12.6
Liquid
% Solids: 100
VARONIC T215:
PEG-15 Tallow Amine
HLB: 14.4
Liquid
% Solids: 100

SHEREX CHEMICAL CO.: Household & Industrial Surfactants (Continued):

Ethoxylated Amines (Continued):
Tallow Amine Ethoxylates (Continued):

VARONIC T215LC:
PEG-15 Tallow Amine
HLB: 14.4
Liquid
% Solids: 100
Textile amine ethoxylates are most widely used in the textile industry as lubricants, scouring aids, dye levelers, etc. They are also used in the polymer industry as process modifiers and as raw materials for quaternary and amphoteric surfactants.

Miscellaneous Amine Ethoxylates:

VARONIC Q202:
PEG-2 Oleylamine
HLB: 4.7
Liquid
% Solids: 100
Anti-corrosive emulsifier for metal working.

VARONIC S202:
PEG-2 Stearylamine
HLB: 5.0
Solid
% Solids: 100
Polymer additive and emulsifier.

Ethoxylated Monodiglycerides:

VARONIC LI-63:
PEG-30 Glyceryl Cocoate
HLB: 15.9
Paste/MP=27C
% Solids: 100
VARONIC LI-67:
PEG-80 Glyceryl Cocoate
HLB: 18.0
Solid/MP=42C
% Solids: 100
VARONIC LI-67-75%:
PEG-80 Glyceryl Cocoate
HLB: 18.0
Liquid
% Solids: 75

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Ethoxylated Monodiglycerides (Continued):

VARONIC LI-42:
PEG-20 Glyceryl Tallowate
HLB: 13.0
Paste/MP=27C
% Solids: 100

VARONIC LI-48:
PEG-80 Glyceryl Tallowate
HLB: 18.0
Solid/MP=42C
% Solids: 100

VARONIC LI-420 (70%):
PEG-200 Glyceryl Tallowate
HLB: 19.0
Paste/MP=53C
% Solids: 70
Recommended for low-irritation shampoos and cleaners with alkyl sulfates, alkylether sulfates, and olefin sulfonates. Viscosity builder and modifier. Moisturizer, emulsifier, and stabilizer for creams and lotions. LI-67 (75%) solvent is water. Low foaming.

Imidazolines:

VARINE O:
Oleic Imidazoline
Liquid
% Solids: 100
Anti-corrosive for automotive body panels, etc.

VARINE O Acetate:
Oleic Imidazoline Acetate
Liquid
% Solids: 100
Anti-corrosive.

VARINE T:
Tall Oil Imidazoline
Liquid
% Solids: 100
Anti-corrosive for automobile industry.

VARINE C:
Coconut Imidazoline
Paste
% Solids: 100
Anti-corrosive and raw material for surfactant production.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Multipurpose Quats:

VARIQUAT 638:
Alkoxylated Quat
Liquid
% Solids: 75
Detergent booster, emulsifier, and antistat for hard-surface cleaners and other liquid detergents. High foaming.

VARIQUAT 66:
Alkoxylated Quat
Liquid
% Solids: 72
Antistat and degreaser for many aqueous cleaning systems.

Solvents:

VARONIC DM 55:
Methyl Capped Glycol Ether
Liquid
% Solids: 100
Water dilutable solvent with low vapor pressure, suitable for hard-surface cleaners.

Sulfosuccinates:

VARSULF SBF-12:
Lauryl Alcohol Sulfosuccinate
Paste
% Solids: 40
Detergents, fine fabric wash systems.

VARSULF SBL-203:
Fatty Acid Alkanolamide Sulfosuccinate
Paste
% Solids: 40
Carpet shampoo, liquid soaps, light-duty detergents.

VARSULF SBFA-30-40%:
Fatty Alcohol Polyglycol Sulfosuccinate
Liquid
% Solids: 40
Liquid soaps, fine fabric wash, liquid dish detergents.

VARSULF S-1333:
Ricinoleic Sulfosuccinate
Liquid
% Solids: 40
Refatting agent for liquid dish detergents or liquid soaps.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Amine Oxides:

VAROX 365:
Lauryl Dimethylamine Oxide
Liquid
% Solids: 30
Hypochlorite-stable foam booster, and stabilizer.

VAROX 1770:
Coco Amidopropyl Dimethylamine Oxide
Liquid
% Solids: 35
Mild foam booster and grease cutter for liquid soap, dish-washing liquid, and shampoos.

VAROX 270:
Lauric/Myristic Amine Oxide
Liquid
% Solids: 35
Low-irritation foam booster.

Bactericidal Quats:

*VARIQUAT 50MC:
Benzyl Chloride Quat
Liquid
% Solids: 50
Germicidal concentrate for disinfection and sanitization.

*VARIQUAT 50ME:
Benzyl Chloride Quat
Liquid
% Solids: 50
Germicidal concentrate for disinfection and sanitization.

*VARIQUAT 80MC:
Benzyl Chloride Quat
Liquid
% Solids: 80
Germicidal concentrate for disinfection and sanitization.

*VARIQUAT 80ME:
Benzyl Chloride Quat
Liquid
% Solids: 80
Germicidal concentrate for disinfection and sanitization.

* These products are registered pesticides with the E.P.A.

SHEREX CHEMICAL CO., INC.: Household & Industrial Surfactants (Continued):

Bactericidal Quats (Continued):

*VARIQUAT 80LC:
Benzyl Chloride Quat
Liquid
% Solids: 80
Algicide concentrate for swimming pools.

*VARIQUAT 60LC:
Benzyl Chloride Quat
Liquid
% Solids: 60
Algicide concentrate for swimming pools.

* These products are registered pesticides with the E.P.A.

STEPAN CO.: Agricultural Products Surfactants:

TOXIMUL D:
Sulfonate nonionic blend
HLB: 10.5
Liquid
Solubility: Xylene
TOXIMUL H-HF:
Sulfonate nonionic blend
HLB: 13.5
Liquid
Solubility: Xylene
Emulsifier pair for pesticides.

TOXIMUL R-HF:
Sulfonate nonionic blend
HLB: 10.5
Liquid
Solubility: Xylene
TOXIMUL S-HF:
Sulfonate nonionic blend
HLB: 13.0
Liquid
Solubility: Xylene
Emulsifier pair for herbicides.

TOXIMUL 500 (TOXIMUL 600):
Sulfonate nonionic blend
HLB: 10.5
Liquid
Solubility: Xylene
Emulsifier for insecticides
TOXIMUL MP:
Sulfonate nonionic blend
HLB: 11.0
Liquid
Solubility: Xylene
Emulsifier for insecticides
TOXIMUL MP-10:
Sulfonate nonionic blend
HLB: 12.0
Liquid
Solubility: Xylene
Emulsifier for insecticides. Use with TOXIMUL D and H-HF.
TOXIMUL MP-26:
Sulfonate nonionic blend
HLB: 12.5
Liquid
Solubility: Xylene, water
Emulsifier for high poundage organophosphates.

STEPAN CO.: Agricultural Products Surfactants (Continued):

TOXIMUL 709:
Sulfonate nonionic blend
HLB: 10.5
Amber liquid
Solubility: Xylene

TOXIMUL 710:
Sulfonate nonionic blend
HLB: 13.0
Amber liquid
Xylene, water
Emulsifier pair for dinitro herbicides

TOXIMUL 715:
Sulfonate nonionic blend
HLB: 10.5
Liquid
Solubility: Xylene

TOXIMUL 716:
Sulfonate nonionic blend
HLB: 12.0
Liquid
Solubility: Xylene
Emulsifier pair for dinitroaniline herbicides.

TOXIMUL 804:
Anionic blend
HLB: 11.0
Amber liquid
Solubility: Xylene
Emulsifier for propanil.

TOXIMUL 811:
Sulfonate anionic blend
HLB: 13.5
Amber liquid
Solubility: Xylene, water
Emulsifier for betasan.

TOXIMUL 8240:
Castor oil, POE-36
HLB: 13.0
Amber liquid
Solubility: Xylene, water
Emulsifier component.

TOXIMUL 8241:
Castor oil, POE-30
HLB: 12.0
Amber liquid
Solubility: Xylene, water
Emulsifier component.

STEPAN CO.: Agricultural Products Surfactants (Continued):

TOXIMUL 8242:
Castor oil, POE-40
HLB: 13.0
Amber liquid
Solubility: Xylene, water
Emulsifier component.

TOXIMUL 8320:
Butyl EO/PO block copolymer
HLB: 12.0
Light amber liquid
Solubility: Xylene, water
Emulsifier component flowable surfactant.

TOXIMUL 8321:
Block copolymer
HLB: 5.5
Amber liquid
Solubility: Xylene
Emulsifier component wetting agent.

TOXIMUL 8322:
Block copolymer
HLB: 14.0
Amber liquid to paste
Solubility: Xylene, water
Emulsifier component.

TOXIMUL 8323:
Block copolymer
HLB: 17.0
Amber liquid to paste
Solubility: Xylene, water
Emulsifier component flowable surfactant.

TOXIMUL SEE-340:
Sorbital tritallate, POE-20
HLB: 11.0
Liquid
Solubility: Xylene
Emulsifier component.

STEPAN CO.: Agricultural Products Surfactants (Continued):

TOXIMUL TA-2:
Tallow amine, POE-2
HLB: 5.0
Amber liquid
Solubility: Xylene
Emulsifier component.

TOXIMUL TA-5:
Tallow amine, POE 5
HLB: 9.0
Amber liquid
Solubility: Xylene
Emulsifier component.

TOXIMUL TA-15:
Tallow amine, POE 15
HLB: 14.5
Amber liquid
Solubility: Xylene
Emulsifier component.

NINATE 401-A:
Calcium alkylbenzene sulfonate
Liquid
Solubility: Xylene
NINATE 411:
Amine alkylbenzene sulfonate
Liquid
Solubility: Xylene
Emulsifier component.

NIPOL 2782:
Block polymer
HLB: 14.0
Tan solid
Solubility: Xylene, water
NIPOL 4472:
Block polymer
HLB: 12.5
Tan solid
Solubility: Xylene, water
NIPOL 5595:
Block polymer
HLB: 15.0
Tan solid
Solubility: Xylene, water
Emulsifier component.

STEPAN CO.: Agricultural Products Surfactants (Continued):

STEPFAC 8170:
Anionic, acid form
Clear, pale yellow liquid
Solubility: Xylene, water
Compatibility agent for liquid fertilizers, 100%.

STEPFAC 8171:
Anionic, acid form
Clear, pale yellow liquid
Solubility: Xylene
Compatibility agent.

STEPFAC 8172:
Anionic, acid form
Clear, pale yellow liquid
Solubility: Xylene

STEPFAC 8173:
Anionic, acid form
Clear, pale yellow liquid
Solubility: Xylene

MICRO-STEP H-301:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Solubility: Xylene, water
Emulsifier for microemulsions.

MICRO-STEP H-302:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Solubility: Xylene, water

MICRO-STEP H-303:
Nonionic blend
HLB: 13.0
Hazy liquid
Solubility: Xylene, water

MICRO-STEP H-304:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Solubility: Xylene, water

MICRO-STEP H-305:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Solubility: Xylene, water

STEPAN CO.: Agricultural Products Surfactants (Continued):

MICRO-STEP H-306:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Xylene, water

MICRO-STEP H-307:
Sulfonate, nonionic blend
HLB: 12.0
Amber liquid
Xylene, water

STEP-FLOW 21:
Nonionic dispersant
HLB: 15.0
Light amber liquid
Solubility: Xylene, water
Surfactant for aqueous flowables.

STEP-FLOW 22:
Nonionic dispersant
HLB: 17.0
Off-white paste
Solubility: Xylene, water

STEP-FLOW 23:
Nonionic dispersant
HLB: 12.0
Off-white paste
Solubility: Xylene, water

STEP-FLOW 24:
Nonionic dispersant
HLB: 13.0
Clear liquid
Solubility: Xylene, water

STEP-FLOW 25:
Nonionic dispersant
HLB: 14.0
Off-white paste
Solubility: Xylene, water

STEP-FLOW 26:
Nonionic dispersant
HLB: 13.0
Off-white paste
Solubility: Xylene, water

STEPAN CO.: Agricultural Products Surfactants (Continued):

STEP-FLOW 41:
Anionic dispersant
Dark liquid
Solubility: Water

STEP-FLOW 42:
Anionic dispersant
Clear yellow liquid
Solubility: Xylene, water

STEP-FLOW 61:
Anionic stabilizing surfactant
Clear, pale yellow liquid
Solubility: Xylene, water

STEP-FLOW 63:
Nonionic stabilizing surfactant
HLB: 11.0
Clear, pale yellow liquid
Solubility: Water

STEPSPERSE DF-100:
Anionic/nonionic dispersant
Dark brown powder
Solubility: Water
Surfactant for flowables and dry flowables.

STEPSPERSE DF-200:
Anionic dispersant
Brown powder
Solubility: Water

STEPSPERSE DF-300:
Anionic dispersant
Brown powder
Solubility: Water

STEPSPERSE DF-400:
Anionic/nonionic dispersant
Dark brown powder
Solubility: Water
Surfactant for flowables and dry flowables.

STEPWET DF-60:
Anionic wetting agent
Brown powder
Solubility: Water
Surfactant for flowables and dry flowables.

STEPWET DF-90:
Anionic wetting agent
Pale yellow ground flake
Solubility: Water

STEPAN CO.: Detergent Industry Surfactants:

Alpha Sulfo Methyl Esters:

ALPHA-STEP ML-40:
Alpha sulfo methyl laurate, sodium salt
Active %: 37
Clear yellow liquid
Biodegradable surfactants exhibiting good detergency, mildness and foam properties, especially in hard water.

ALPHA-STEP MC-48:
Alpha sulfo methyl cocoate, sodium salt
Active %: 39
Clear yellow liquid
Used in laundry and dishwashing detergent, bathroom cleaners, and all-purpose cleaners. Suitable for bubble baths.

ALPHA-STEP ML-A:
Blend of ALPHA-STEP ML-40 and lauric/myristic monoethanolamide (LMMEA)
Active %: 44
Opaque yellow liquid
Used in dishwashing liquids and may be used to partially replace ether sulfate. Excellent foam boosting and stabilizing action.

ALPHA-STEP LD-200:
Formulated detergent base
Active %: 50
Clear liquid
Completely formulated, biodegradable liquid dishwash concentrate. Can be used for fine fabric wash, carwash, and general purpose cleaners.

Alkylbenzene Sulfonates:

BIO-SOFT D-40:
Sodium alkylbenzene sulfonate, linear
Active %: 40
Liquid
BIO-SOFT D-53:
Sodium alkylbenzene sulfonate, linear
Active %: 53
Slurry
BIO-SOFT D-62:
Sodium alkylbenzene sulfonate, linear
Active %: 60
Slurry
Basic surfactants for household, industrial and institutional cleaners. Offer good detergency, high foam, biodegradability, and economy.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Alkylbenzene Sulfonates (Continued):

BIO-SOFT N-300:
TEA alkylbenzene sulfonate, linear
Active %: 60
Liquid
Base detergent, salt free sulfonate for liquid formulations.

NACCONOL 40G:
Sodium alkylbenzene sulfonate, linear
Active %: 40
Solid, ground flake
General detergent and wetting agent. General purpose surfactant. Dry products.

NACCONOL 90G:
Sodium alkylbenzene sulfonate, linear
Active %: 90
Solid, ground flake
General detergent and wetting agent. High concentration. Dry products.

NINATE 401:
Calcium alkylbenzene sulfonate, branched
Active %: 60
Liquid
Emulsifier. Used in combination with nonionics as emulsifiers in self-dispersing liquids for agriculture.

NINATE 411:
Amine alkylbenzene sulfonate, branched
Active %: 90
Liquid
Emulsifier, solvent degreaser, drycleaning detergent. Oil-soluble sulfonate capable of forming clear blends of water and kerosene.

Sulfonic Acids:

BIO-SOFT S-100:
Alkylbenzene sulfonic acid, linear
Active %: 97
Dark viscous liquid
Detergent intermediate. Neutralized, a high foaming, economical surfactant widely used in products such as dishwashing liquids, all-purpose cleaners, degreasers, acid cleaners, and a multitude of industrial cleaner applications. Effective in acidic cleaners.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Sulfonic Acids (Continued):

BIO-SOFT S-130:
Alkylbenzene sulfonic acid, linear
Active %: 97
Dark viscous liquid
Detergent intermediate. Used in laundry detergents.

STEPAN H-100:
Alkylbenzene sulfonic acid, branched
Active %: 97
Dark viscous liquid
Detergent, emulsifier intermediate

Hydrotropes:

STEPANATE SXS:
Sodium xylene sulfonate
Active %: 40
Liquid
Solubilizer or coupling agent, cloud point depressant, viscosity reducer.

STEPANATE AXS:
Ammonium xylene sulfonate
Active %: 40
Liquid
Coupling agent in neutral detergents.

STEPANATE SCS:
Sodium cumene sulfonate
Active %: 45
Liquid
Coupling agent, cloud point depressant.

Amine Oxides:

AMMONYX LO:
Lauramine oxide
Active %: 30
Liquid
AMMONYX DMCD-40:
Lauramine oxide
Active %: 40
Liquid
AMMONYX CO:
Cetamine oxide
Active %: 30
Paste
Foam enhancers, stabilizers and viscosity builders. Used in hard surface cleaners containing acids or bleach, and dishwashing liquids.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Alkanolamides:

NINOL LMP:
Lauric/myristic monoethanolamide
Active %: 100
White beads
NINOL CMP:
Coconut monoethanolamide
Active %: 100
White beads
Excellent foam booster and viscosity enhancer for liquid detergents. Also useful in detergent blocks or bars, may be melted and molded.

NINOL 96-SL:
Lauric diethanolamide
Active %: 100
Light color solid
Foam boosters and viscosity enhancers for liquid detergents.
NINOL 40-CO:
Coconut diethanolamide
Active %: 100
Light color liquid
NINOL 49-CE:
Coconut diethanolamide
Active %: 100
Light color liquid
NINOL 30-LL:
Lauric diethanolamide
Active %: 100
Clear amber liquid

NINOL 201:
Oleic diethanolamide
Active %: 100
Clear amber liquid
Oil soluble emulsifier for degreasers and soluble oils. Outstanding viscosity builder.

NINOL 1281:
Fatty alkanolamide, modified
Active %: 100
Amber liquid
Detergent base for synthetic and soap-synthetic floor cleaners, giving viscous non-rusting solutions.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Alkanolamides (Continued):

NINOL 1285:
Fatty alkanolamide, modified
Active %: 100
Light straw liquid
Detergent base for synthetic cleaners, high alkali strippers and degreasers.

NINOL 1301:
Fatty alkanolamide, modified
Active %: 100
Light color paste
Detergent base for germicidal floor cleaners, liquid cleaners offering quaternary compatibility.

NINOL 11-CM:
Coconut diethanolamide, modified
Active %: 100
Light color liquid
Economical detergent base for synthetic cleaners.

NINOL 5024:
Fatty diethanolamide, modified
Active %: 100
Dark amber liquid
Highly salt tolerant, viscosity building base for hard surface cleaners.

NINOL SR-100:
Coconut/oleic diethanolamide, modified
Active %: 100
Liquid
Low foaming viscosity builder for hard surface cleaners.

Phosphate Esters:

CEDEPHOS FA600:
Alkyl ether phosphate
Active %: 100
Clear, straw colored liquid
CEDEPHOS RA600:
Alkyl ether phosphate
Active %: 100
Clear, amber liquid
STEPFAC 8170:
Alkyl ether phosphate
Active %: 100
Clear amber liquid
Acid form of complexed phosphate esters. Excellent hydrotropes for nonionic surfactants in alkali cleaners; emulsifiers for agricultural emulsion systems, emulsion polymerization and oil emulsification, lubricants, corrosion inhibitors.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Specialties:

BIO-TERGE PAS-85:
Sodium alkane sulfonate
Active %: 38
Clear liquid
Hydrotrope and detergent for highly alkaline, acidic, or high electrolyte and bleach containing solutions. Low, fast breaking foam with moderate wetting. Used in acid cleaners and is excellent for carpet steam extraction cleaners and automatic liquid dishwash.

Alkyl Sulfates:

STEPANOL WA-Extra:
Sodium lauryl sulfate
Active %: 29
Clear liquid
For use in rug shampoos, light duty liquid detergents, fine fabric wash. WA-Extra offers low salt content and low free oil. ME-Dry is a high active powder form.

STEPANOL WAC:
Sodium lauryl sulfate
Active %: 29
Clear liquid

STEPANOL WA-Special:
Sodium lauryl sulfate
Active %: 29
Clear liquid

STEPANOL ME-Dry:
Sodium lauryl sulfate
Active %: 93
White powder

STEPANOL MG:
Magnesium lauryl sulfate
Active %: 28
Clear liquid
High foaming product used in rug and upholstery shampoos.

STEPANOL AM:
Ammonium lauryl sulfate
Active %: 29
Viscous liquid
Ammonium salt versions of lauryl sulfate offer increased solubility and mildness. High foaming product used in rug and upholstery shampoos.

STEPANOL AM-V:
Ammonium lauryl sulfate
Active %: 28
Viscous liquid to gel
STEPANOL AM-V is similar to STEPANOL AM but higher viscosity

STEPAN CO.: Detergent Industry Surfactants (Continued):

Alkyl Ether Sulfates:

STEOL 4N:
Sodium lauryl ethoxysulfate
Active %: 28
Clear liquid
STEOL CS-460:
Sodium lauryl ethoxysulfate
Active %: 60
Clear liquid
STEOL CA-460:
Ammonium lauryl ethoxysulfate
Active %: 60
Clear liquid
STEOL KS-460:
Sodium lauryl ethoxysulfate, modified
Active %: 60
Clear liquid
STEOL KA-460:
Ammonium lauryl ethoxysulfate, modified
Active %: 60
Clear liquid
Detergent, emulsifier, foaming agent, wetting agent. For use in liquid detergents, car wash, dishwash, textile detergent and industrial foaming applications. In general, ether sulfates offer excellent flash foaming and good grease cutting properties. The K series dissolves easily without gelling.

Blends:

BIO-SOFT LD-150:
Formulated detergent concentrate
Active %: 48
Liquid
BIO-SOFT LD-95:
Formulated detergent concentrate
Active %: 60
Liquid
Completely formulated, biodegradable liquid dishwash concentates. Can be used for fine fabric wash, carwash, and general purpose cleaners.

BIO-SOFT LD-190:
Formulated detergent concentrate
Active %: 91
Liquid
Highly concentrated blend for liquid laundry, liquid dishwash and general purpose cleaners.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Blends (Continued):

BIO-SOFT LD-47:
Formulated detergent concentrate
Active %: 47
Liquid
High foaming blend for liquid hand dishwash formulations.

Emulsifier WHC:
Formulated emulsifier
Active %: 100
Liquid
Emulsifier and detergent for "waterless" hand cleaners and degreasers.

Nonionics:

MAKON 4:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 6:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 8:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 10:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 12:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 14:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
MAKON 30:
Alkylphenoxypolyoxyethylene ethanol
Active %: 100
Liquid to solid
Detergents and emulsifiers differing in ethylene oxide content. MAKON 4 most oil-soluble. MAKON 30 least oil-soluble.

STEPAN CO.: Detergent Industry Surfactants (Continued):

Nonionics (Continued):

MAKON NF-5:
Polyalkoxylated aliphatic base
Active %: 98
Liquid
MAKON NF-12:
Polyalkoxylated aliphatic base
Active %: 98
Liquid
Non-foaming wetting agents for mechanical dishwasher detergents and metal cleaning.

AMIDOX L-2:
Ethoxylated alkanolamides
Active %: 100
Liquid to paste
AMIDOX L-5:
Ethoxylated alkanolamides
Active %: 100
Liquid to paste
AMIDOX C-2:
Ethoxylated alkanolamides
Active %: 100
Liquid to paste
AMIDOX C-5:
Ethoxylated alkanolamides
Active %: 100
Liquid to paste
Emulsifiers, detergents, wetting agents. The series "C" for coconut and "L" for lauric possess some of the properties of both alkanolamide and nonionic type surfactant.

BIO-SOFT EA-4:
Fatty alcohol ethoxylates, modified
Active %: 100
Liquid
BIO-SOFT EA-8:
Fatty alcohol ethoxylates, modified
Active %: 100
Liquid
BIO-SOFT EA-10:
Fatty alcohol ethoxylates, modified
Active %: 100
Liquid
Emulsifiers and detergents differing in ethylene oxide content.

NEUTRONYX 656:
Nonyl phenol polyglycol ether
Active %: 100
Liquid
Detergent and emulsifier for hard surface detergents.

STEPAN CO.: Emulsion Polymerization Surfactants:

Sulfonates:

POLYSTEP A-4:
Linear sodium dodecylbenzene sulfonate
% Concentration: 50
Yellow, turbid liquid
POLYSTEP A-7:
Linear sodium dodecylbenzene sulfonate
% Concentration: 39
Yellow slurry
POLYSTEP A-11:
Isopropyl amine branched dodecylbenzene sulfonate
% Concentration: 88
Pale, clear viscous liquid
POLYSTEP A-15:
Linear sodium dodecylbenzene sulfonate
% Concentration: 22
Pale, clear to hazy liquid
POLYSTEP A-15-30K:
Linear potassium dodecylbenzene sulfonate
% Concentration: 30
Hazy slurry
POLYSTEP A-16:
Branched sodium dodecylbenzene sulfonate
% Concentration: 30
Pale, turbid liquid
POLYSTEP A-16-22:
Branched sodium dodecylbenzene sulfonate
% Concentration: 22
Pale, turbid liquid
POLYSTEP A-18:
Linear sodium alpha olefin sulfonate
% Concentration: 40
Pale, clear liquid
These surfactants are used in making styrene-butadiene latexes and in vinyl chloride and vinylidene chloride latexes. They exhibit excellent thermal and hydrolytic stability.

Sulfonic Acids:

POLYSTEP A-13:
Linear dodecylbenzene sulfonic acid
% Concentration: 97
Dark viscous liquid
POLYSTEP A-17:
Branched dodecylbenzene sulfonic acid
% Concentration: 97
Dark viscous liquid
Use of the acids permits the choice of a variety of cations. The acids also function as catalysts in acid catalyzed reactions.

STEPAN CO.: Emulsion Polymerization Surfactants (Continued):

Alkyl Sulfates:

POLYSTEP B-3:
Sodium lauryl sulfate
% Concentration: 97.5
White powder
POLYSTEP B-5:
Sodium lauryl sulfate
% Concentration: 30
Pale, clear liquid
POLYSTEP B-7:
Ammonium lauryl sulfate
% Concentration: 30
Pale, clear liquid
POLYSTEP B-24:
Sodium lauryl sulfate
% Concentration: 30
Pale, clear liquid
POLYSTEP B-25:
Sodium decyl sulfate
% Concentration: 38
Pale, clear liquid
POLYSTEP B-29:
Sodium octyl sulfate
% Concentration: 32
Clear liquid
POLYSTEP B-LCP:
Sodium alkyl sulfate
% Concentration: 30
Pale, clear liquid
While of value in most polymer systems, the alkyl sulfates are especially useful with vinyl chloride. Particle size control can be achieved by varying the alkyl chain length.

Alkyl Ethoxylate Sulfates:

POLYSTEP B-11:
Ammonium lauryl ether sulfate, 4 EO
% Concentration: 60
Pale, clear liquid
POLYSTEP B-12:
Sodium lauryl ether sulfate, 4 EO
% Concentration: 60
Pale, clear liquid
POLYSTEP B-19:
Sodium lauryl ether sulfate, 30 EO
% Concentration: 26
Pale, clear liquid

STEPAN CO.: Emulsion Polymerization Surfactants (Continued):

Alkyl Ethoxylate Sulfates (Continued):

POLYSTEP B-20:
Ammonium lauryl ether sulfate, 30 EO
% Concentration: 30
Pale, clear liquid
POLYSTEP B-22:
Ammonium lauryl ether sulfate, 12 EO
% Concentration: 30
Pale, clear liquid
POLYSTEP B-23:
Sodium lauryl ether sulfate, 12 EO
% Concentration: 60
Amber, hazy liquid
Useful with acrylics, styrene-acrylics, and vinyl acrylics. Increasing ethylene oxide content enhances the nonionic character and improves properties such as mechanical and freeze-thaw stability, usually obtained from blends of anionics with nonionics.

Alkylphenol Ethoxylate Sulfates:

POLYSTEP B-1:
Ammonium nonyl phenol ethoxylate sulfate, 4 EO
% Concentration: 60
Yellow viscous liquid
POLYSTEP B-27:
Sodium nonyl phenol ethoxylate sulfate, 4 EO
% Concentration: 30
Pale, clear liquid
POLYSTEP C-OP3S:
Sodium octyl phenol ethoxylate sulfate, 3 EO
% Concentration: 20
White, viscous dispersion
Same as above generally. The C-Series can be employed in specialty copolymers of vinyl acetate.

Nonionics:

POLYSTEP F-1:
Nonyl phenol ethoxylate, 4 EO
% Concentration: 100
Pale, clear liquid
POLYSTEP F-2:
Nonyl phenol ethoxylate, 6 EO
% Concentration: 100
Pale, clear liquid

STEPAN CO.: Emulsion Polymerization Surfactants (Continued):

Nonionics (Continued):

POLYSTEP F-3:
Nonyl phenol ethoxylate, 8 EO
% Concentration: 100
Pale, clear liquid
POLYSTEP F-4:
Nonyl phenol ethoxylate, 10 EO
% Concentration: 100
Pale, clear liquid
POLYSTEP F-5:
Nonyl phenol ethoxylate, 12 EO
% Concentration: 100
Clear to turbid liquid
POLYSTEP F-6:
Nonyl phenol ethoxylate, 14 EO
% Concentration: 100
Clear to turbid liquid
POLYSTEP F-9:
Nonyl phenol ethoxylate, 30 EO
% Concentration: 70
Clear to hazy liquid or gel
POLYSTEP F-10:
Nonyl phenol ethoxylate, 40 EO
% Concentration: 70
Clear to hazy liquid or gel
POLYSTEP F-95B:
Nonyl phenol ethoxylate, 34 EO
% Concentration: 70
Liquid
Nonionic surfactants contribute mechanical stability and freeze-thaw stability to latexes. They are useful as components of blends with various anionic surfactants and allow contol of particle size.

Other Surfactants:
A variety of specialty surfactants is also available for specific applications.

STEPAN CO.: Foamer Specialties Surfactants:

Sulfonates:

ALPHA-STEP ML-40:
Sodium alpha sulfo methyl laurate
% Active: 37
Clear liquid
Versatile foaming agent displaying hydrotropic characteristics. Naturally derived and readily biodegradable.

STEPANTAN DS-40:
Sodium alkylbenzene sulfonate
% Active: 40
Clear liquid
Excellent foaming, wetting and emulsification. Used specifically in dust control applications.

STEPANTAN DT-60:
Triethanolamine alkylbenzene sulfonate
% Active: 60
Clear, yellow liquid
High active, foaming and wetting agent. Used specifically as an air entraining agent in concrete applications.

NACCONOL 90G:
Sodium alkylbenzene sulfonate
% Active: 90
Solid, ground flake
Powdered surfactant for foaming and wetting.

NINATE 401:
Calcium alkylbenzene sulfonate
% Active: 60
Amber liquid
Emulsifier, compatible with nonionics.

NINATE 411:
Amine alkylbenzene sulfonate
% Active: 90
Viscous amber liquid
Oil-soluble emulsifier and detergent.

Sulfonic Acids:

STEPANTAN H-100:
Branched alkylbenzene sulfonic acid
% Active: 97
Dark viscous liquid
Emulsifier intermediate. Alkali metal salts are water soluble. Amine salts are oil soluble.

STEPAN CO.: Foamer Specialties Surfactants (Continued):

Sulfonic Acids (Continued):

BIO-SOFT S-100:
Alkylbenzene sulfonic acid
% Active: 97
Dark viscous liquid
Detergent intermediate. Neutralized, it becomes a high foamer.

Alkyl Ether Sulfates:

CEDEPAL FA-406:
Ammonium ether sulfate
% Active: 60
Clear yellow liquid
Excellent foaming and wetting. Used specifically in gypsum board production.

STEOL KA-460:
Ammonium ether sulfate
% Active: 60
Clear liquid
Excellent foamer for soft and hard waters.

STEPANFLOTE 85L:
Sodium alkyl ether sulfate
% Active: 30
Clear liquid
Flotation reagent for molybdenum ore.

STEPANFLOTE 97A:
Sodium alkyl ether sulfate
% Active: 42
Clear liquid
Flotation reagent for non-metallic ores.

STEPOSOL CA-60H:
High flash point ammonium ether sulfate
% Active: 60
Clear amber liquid
Excellent foamer for heavy brine conditions. Non-regulated under DOT classification.

STEPOSOL CA-207:
Ammonium ether sulfate
% Active: 60
Clear yellow liquid
Excellent foamer for heavy brine conditions. Used specifically in oil field applications.

STEPAN CO.: Foamer Specialties Surfactants (Continued):

Alkyl Ether Sulfates (Continued):

STEPOSOL CA-319:
Ammonium ether sulfate
% Active: 60
Clear yellow liquid
Excellent foamer for heavy brine and hydrocarbon conditions. Used specifically in oil field applications.

Olefin Sulfonates:

STEPANTAN AS-12:
Sodium alpha olefin sulfonate
% Active: 40
Clear amber liquid
Excellent foamer for soft and hard waters, fresh water and moderate brine conditions.

STEPANTAN AS-12 Flake:
Sodium alpha olefin sulfonate
% Active: 97
Amber flakes
Flaked surfactant. Developed for use in soapstick applications.

STEPANTAN AS-40:
Sodium alpha olefin sulfonate
% Active: 40
Clear yellow liquid
Excellent foamer for fresh water. Used specifically as air entrainer in concrete applications.

STEPANTAN AS-90 Beads:
Sodium alpha olefin sulfonate
% Active: 90
Solid beads
Beaded surfactant for foaming in fresh water.

Blends:

STEPANFORM 1050:
Anionic blend
% Active: 47
Clear liquid
Versatile foamer. Used specifically in drilling applications.

STEPAN CO.: Foamer Specialties Surfactants (Continued):

Blends (Continued):

STEPANFORM 1440:
Anionic blend
% Active: 37
Clear liquid
Foaming agent used specifically as air entrainer in concrete applications.

STEPANFORM 1750:
Anionic blend
% Active: 50
Clear liquid
Versatile foamer. Used specifically in drilling applications.

STEPANFORM 1850:
Anionic blend
% Active: 50
Clear liquid
Versatile foamer. Used specifically in drilling applications.

STEPANFORM 2160:
Anionic blend
% Active: 55
Clear liquid
Versatile foamer. Used specifically in drilling applications.

STEPANFORM 3040:
Anionic blend
% Active: 35
Clear liquid
High expansion foamer for use in dust control applications.

STEPANFORM 5012:
Anionic blend
% Active: 30
Clear amber liquid
High expansion foamer which is very stable. Low cloud point.

STEPANFORM 5040:
Anionic blend
% Active: 30
Clear liquid
High expansion foamer which is very stable.

STEPAN CO.: Foamer Specialties Surfactants (Continued):

Blends (Continued):

STEPANFORM HP-95:
Anionic-nonionic blend
% Active: 98
Clear viscous liquid
Emulsifier for vegetable oils in non-edible applications.

STEPANFORM HP-116:
Anionic-nonionic blend
% Active: 98
Clear viscous liquid
Emulsifier for hydrocarbon liquids.

Amphoterics:

STEPANON CG:
Amphoteric surfactant
% Active: 30
Clear liquid
Brine tolerant foamer for acid or alkaline media.

Other Surfactants:

ONYXIDE 200:
Hexahydro-1,3,5-tris(2-hydroxyethyl)s-triozone
% Active: 79
Liquid
A preservative for soluble cutting fluids and coolants. A highly active bactericide for oil field drilling and completion fluids, fracturing fluids and enhanced oil recovery applications.

A variety of speicialty surfactants are also available for specific applications.

STEPAN CO.: Metalworking Surfactants:

Alkanolamide:

NINOL 201:
Oleic diethanolamide
Fatty Acid: Oleic
% Free Fatty Acid: 7.5
% Free Amine: 26.0
Liquid

NINOL 1281:
Modified fatty alkanolamide
Fatty Acid: Proprietary
% Free Fatty Acid: 19.0
% Free Amine: 19.0
Liquid

NINOL 1301:
Modified fatty alkanolamide
Fatty Acid: Proprietary
Paste

NINOL 11-CM:
Coconut diethanolamide
HLB: 14.5
Fatty Acid: Coconut
% Free Fatty Acid: 16.0
% Free Amine: 27.0
Liquid

NINOL SR-100:
Oleic diethanolamide
Fatty Acid: Oleic
% Free Fatty Acid: 50.0
% Free Amine: 20.0
Liquid

These products are either water soluble or dispersable and are normally used as emulsifier and corrosion inhibitors in cutting fluids, drawing compounds, and cleaners. NINOL 1301 does not contain excess fatty acids or amine soaps.

Nonionics:

MAKON NF-5:
Polyalkoxylated aliphatic base
% Actives: 97
pH 1%: 10.5
Liquid

MAKON NF-12:
Polyalkoxylated aliphatic base
% Actives: 100
pH 1%: 10.0
Cloud Point: 15C
Liquid

STEPAN CO.: Metalworking Surfactants (Continued):

Nonionics (Continued):

MAKON 8240:
Polyoxyethylated (36) castor oil
HLB: 13.0
% Actives: 100
pH 1%: 5-7
Liquid
These products are used due to their superior wetting, lubricity, coupling and defoaming properties for the manufacture of cutting fluids, drwaing compounds, and corrosion inhibitors.

Anionics:

NINATE 411:
Amine alkylbenzene sulfonate
% Actives: 92
Liquid
BIO-TERGE PAS-85:
Sodium 1-octane sulfonate
% Actives: 35
pH 1%: 6.0
Cloud Point: 15C
Liquid
STEPFAC 8170:
Ethoxylated nonyl phenol phosphate
% Actives: 99
pH 1%: 2.0
Liquid
ALPHA-STEP ML-40:
Sodium alpha sulfdo methyl laurate
% Actives: 37
pH 1%: 7.0
Liquid
Emulsion, oil-soluble sulfonate. Effective wetting, surface tension reducer and defoamer over a wide pH range.

Methyl Esters:

STEPAN C-40:
Methyl laurate
Iodine value: 0.1
Acid Value: 0.5
Sap. Value: 264
Liquid
STEPAN C-65:
Methyl palmitate/oleate
Iodine Value: 50.0
Acid Value: 2.0
Sap. Value: 203
Liquid

STEPAN CO.: Metalworking Surfactants (Continued):

Methyl Esters (Continued):

STEPAN C-68:
Methyl oleate
Iodine Value: 75.0
Acid Value: 2.0
Sap. Value: 197
Liquid
These esters are recommended as lubricity additives for the metalworking market and are oil soluble; water emulsifiable. Especially as a replacement for mineral oil in cutting fluids and drawing compounds. STEPAN C-40 finds application in the formulation of aluminum beverage can drawing lubricants.

EO/PO Esters:

KESSCO 891:
Polyoxyethylene/Polyoxypropylene monooleate
HLB: 12.8
Acid Value: 1.0
Sap. Value: 65
Liquid
KESSCO 894:
Polyoxyethylene/Polyoxypropylene dioleate
HLB: 8.8
Acid Value: 1.0
Sap. Value: 100
Liquid
These esters are excellent lubricity additives and coupling agents. Recommended as a replacement for mineral oil in cutting fluids, drawing compounds, high water base and fire resistant hydraulic fluids. They are water and oil soluble.

Fatty Esters:

KESSCO GMO:
Glycerol monooloeate
HLB: 3.8
Acid Value: 3.0
Liquid
KESSCO 653:
Cetyl palmitate
Acid Value: 2.0
Flake
Effective water in oil emulsifiers and lubricity additives for the cutting fluid and drawing compounds manufacturer. Effective sperm oil replacement.

STEPAN CO.: Metalworking Surfactants (Continued):

Polyethylene Glycol Esters:

KESSCO PEG 200 DL:
PEG 200 dilaurate
HLB: 5.9
Iodine Value: 9.0
Acid Value: 10
Liquid

KESSCO PEG 400 DS:
PEG 400 distearate
HLB: 8.5
Acid Value: 10
Solid

KESSCO PEG 600 DS:
PEG 600 distearate
HLB: 10.7
Acid Value: 10
Solid

KESSCO PEG 600 DL:
PEG 600 dilaurate
HLB: 11.7
Acid Value: 10
Liquid

KESSCO PEG 600 ML:
PEG 600 monolaurate
HLB: 14.6
Iodine Value: 5.0
Acid Value: 5
Liquid

KESSCO PEG 6000 DS:
PEG 6000 distearate
HLB: 18.4
Acid Value: 9
Wax

PEG Series of esters in a wide range of hydrophilic and lipophilic values. This wide range permits their use as primary emulsifiers and as solubilizers in clear micro-emulsions. Several esters of lauric and stearic acids are utilized as lubricants for the formulation of drawing and forming compounds especially for the aluminum industry.

Biocide:

ONYXIDE 200 (79% active):
Hexahydro-1,3,5-tris(2-hydroxyethyl) triazine
Liquid

A preservative for cutting fluids formulations and tank side maintenance.

STEPAN CO.: Personal Care Products Surfactants:

Cationics:

Cetyl Trimethyl Ammonium Chloride:

AMMONYX CETAC:
Cetrimonium chloride
Active %: 26
Liquid
AMMONYX CETAC-30:
Cetrimonium chloride
Active %: 30
Liquid
These products possess pronounced conditioning, softening, and emolliency characteristics. Suggested applications include hair rinses, skin creams and lotions. They may also be used as cationic emulsifiers.

Stearyl Dimethyl Benzyl Ammonium Chloride:

AMMONYX 4:
Stearalkonium chloride
Active %: 18
Paste
AMMONYX 4B:
Stearalkonium chloride
Active %: 18
Paste
AMMONYX CA-Special:
Stearalkonium chloride
Active %: 22
Paste
AMMONYX 485:
Stearalkonium chloride
Active %: 85
Powder
AMMONYX 4002:
Stearalkonium chloride
Active %: 95
Powder
These products provide pronounced conditioning, softening, and emolliency characteristics. Suggested applications include hair rinses, skin creams and lotions. They may also be used as cationic emulsifiers.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Cationics (Continued):

Oleyl Dimethyl Benzyl Ammonium Chloride:

AMMMONYX KP:
Olealkonium chloride
Active %: 50
Liquid
AMMONYX LKP:
Olealkonium chloride
Active %: 50
Liquid
These products can be used in clear hair rinses exhibiting excellent conditioning and antistatic properties. AMMONYX LKP is an extremely light colored version for use in water white conditioners.

Methosulfate:

STEPANQUAT 6585:
Dipalmethyl hydroxyethylmonium methosulfate
Active %: 85
White soft paste
Mild cationic surfactant designed for cream rinses and conditioners.

Anionics:

Alkyl Sulfates:

STEPANOL AM:
Ammonium lauryl sulfate
Active %: 28
Liquid
STEPANOL AM-V:
Ammonium lauryl sulfate
Active %: 28
Liquid
STEPANOL AM and AM-V are used in shampoos, handsoaps and bath products. They are excellent foamers and give high and consistent viscosity response. STEPANOL AM and AM-V are especially suitable in porducts which require a low pH and low temperature clarity. STEPANOL AM-V offers higher finished product viscosities and is an excellent choice for gel products. STEPANOL AM provides improved handling properties.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Anionics (Continued):

Alkyl Sulfates (Continued):

STEPANOL WA-Extra:
Sodium lauryl sulfate
Active %: 29
Liquid
STEPANOL WAC:
Sodium lauryl sulfate
Active %: 29
Liquid
STEPANOL WA-Special:
Sodium lauryl sulfate
Active %: 29
Liquid
STEPANOL WAQ:
Sodium lauryl sulfate
Active %: 29
Liquid
STEPANOL WA-Paste:
Sodium lauryl sulfate
Active %: 29
Liquid
These products are used in shampoo, handsoaps, bath products, shaving creams and medicated ointments. Sodium lauryl sulfates are excellent foamers and provide good viscosity response. They are especially suited for opaque, pearlescent, or cream products. The various grades of sodium lauryl sulfate offer a wide variety of choices in developing optimum formulations.

STEPANOL ME-Dry:
Sodium lauryl sulfate
Active %: 93
White powder
STEPANOL WA-100:
Sodium lauryl sulfate
Active %: 97
White powder
These products are used in dentifrices, tablets, powdered baths, and cleansing preparations. STEPANOL WA-100 is USP NF Grade and is used in toothpastes where minimal taste contribution is important.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Anionics (Continued):

STEPANOL WAT:
TEA lauryl sulfate
Active %: 40
Liquid
STEPANOL DEA:
DEA lauryl sulfate
Active %: 34
Liquid
STEPANOL DEA and TEA are used in shampoos, bubble baths and liquid handsoaps. Both are excellent foamers and can be used in clear products where low temperature clarity is important.

Alkyl/Ether Sulfates:

STEOL CA-130:
Ammonium laureth sulfate
Active %: 26
Liquid
STEOL CA-230:
Ammonium laureth sulfate
Active %: 25
Liquid
STEOL CA-330:
Ammonium laureth sulfate
Active %: 28
Liquid
STEOL CA-460:
Ammonium laureth sulfate
Active %: 60
Liquid
Excellent surfactants for low pH, clear, gel or liquid shampoos, bath and cleansing preparations. These products are excellent foamers and give high and consistent viscosity response. Ammonium laureth sulfate is especially suitable for children's products due to low skin irritation properties.

STEOL CS-130:
Sodium laureth sulfate
Active %: 26
Liquid
STEOL CS-230:
Sodium laureth sulfate
Active %: 25
Liquid
STEOL CS-330:
Sodium laureth sulfate
Active %: 28
Liquid

STEPAN CO.: Personal Care Products Surfactants (Continued):

Anionics (Continued):

Alkyl Ether Sulfates (Continued):

STEOL CS-460:
Sodium laureth sulfate
Active %: 60
Liquid
Sodium laureth sulfates are used in shampoos and bath products. These products are excellent foamers regardless of water hardness. Sodium laureth sulfate has low skin irritation properties making it suitable for mild cleansing, as well as baby products.

CEDEPAL TD-403:
Sodium trideceth sulfate
Active %: 30
Liquid
CEDEPAL TD-407:
Sodium trideceth sulfate
Active %: 73
Liquid
CEDEPAL TD-484:
Sodium trideceth sulfate
Active %: 32
Liquid
Mild branched chain alkyl ether sulfates for use in shampoo and bath products. These products have excellent wetting and foaming properties. Their mildness is ideal for use in baby products.

Alpha Olefin Sulfonate:

BIO-TERGE AS-40:
Sodium C14-16 olefin sulfonate
Active %: 40
Liquid
Alpha Olefin Sulfonate is used in shampoos, hand soaps and bath products. It is more stable than alcohol sulfates over a broad pH range. Provides excellent flash foam.

Linear Alkylbenzene Sulfonate:

BIO-SOFT N-300:
TEA-Dodecylbenzenesulfonate
Active %: 60
Liquid
BIO-SOFT N-300 was developed for oily hair shampoos. Provides effective removal of oil without stripping hair.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Anionics (Continued):

Alpha Sulfo Methyl Ester:

ALPHA-STEP ML-40:
Sodium methyl 2-sulfolaurate (and) Sodium ethyl 2-sulfolaurate
Active %: 38
Liquid
Mild surfactant exhibiting good detergency and foaming properties. Particularly suitable for bubble baths and other products having relatively low formulated viscosities.

Sarcosinate:

MAPROSYL 30:
Sodium lauroyl sarcosinate
Active %: 30
Liquid
A soap-like detergent with excellent wetting and foaming properties. Its low cloud point and improved mildness makes it an excellent candidate for personal care and mild products.

Sulfoacetate:

LATHANOL LAL:
Sodium lauryl sulfoacetate
Active %: 65
White powder
LATHANOL LAL is a versatile product for use in powder bubble baths, shampoos, cleansing creams, cream and paste shampoos, and syndet bars. This product provides excellent foaming and viscosity response.

Sulfosuccinates:

ANIONYX 12S:
Disodium oleamido PEG-2 sulfosuccinate
Active %: 20
Liquid
ANIONYX 12S is an excellent choice for low irritation shampoos and cleansing products. It is very mild to the skin and eyes and can reduce the irritating properties of other surfactants.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Sulfosuccinates (Continued):

STEPAN-MILD SL3:
Disodium laureth sulfosuccinate
Active %: 32
Liquid
STEPAN-MILD SL3 is used in low irritation shampoos, bubble baths, and handsoaps. It is a good foamer and can be used in formulations as a primary or secondary surfactant.

STEPAN-MILD LSB:
Disodium laureth sulfosuccinate (and) Sodium lauryl sulfoacetate
Active %: 25
Liquid
STEPAN-MILD LSB is a specialty blend combining excellent foaming with viscosity building and mildness.

Blends:

BIO-TERGE 804:
Sodium C14-16 olefin sulfonate/Sodium laureth sulfate/Lauramide DEA
Active %: 50
Liquid
STEPANOL AEG:
Ammonium lauryl sulfate/Ammonium laureth sulfate/Cocamidopropyl betaine/Cocamide DEA
Active %: 42
Liquid
STEPANOL AEM:
Ammonium laureth sulfate/Cocamide MEA
Active %: 48
Liquid
STEPANOL LX:
DEA lauryl sulfate/DEA lauraminopropionate/Sodium lauraminopropionate
Active %: 36
Liquid
STEPANOL 360:
Sodium lauryl sulfate/Lauramide DEA
Active %: 40
Liquid
Surfactant concentrates for shampoo and bath products. These products offer ease of handling and simple mixing and dilution attributes.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Nonionics:

Alkanolamides:

NINOL 30-LL:
Lauramide DEA
Active %: 100
Liquid
NINOL 40-CO:
Cocamide DEA
Active %: 100
Liquid
NINOL 49-CE:
Cocamide DEA
Active %: 100
Liquid
NINOL 55-LL:
Lauramide DEA
Active %: 100
Liquid
NINOL 70-SL:
Lauramide DEA
Active %: 100
Solid
NINOL 96-SL:
Lauramide DEA
Active %: 100
Solid
NINOL GR:
Cocamide DEA
Active %: 100
Liquid
NINOL L-9:
Lauramide DEA
Active %: 100
Solid
Stepan's Alkanolamides are excellent foam boosters, stabilizers and viscosity builders/modifiers for shampoos, hand soaps and bath products. NINOL 30-LL is a liquid lauramide designed specifically for viscosity building and foam enhancement. NINOL 40-CO is derived from whole coconut and contains glycerin for added conditioning properties. NINOL 55-LL is a liquid lauric designed for foam enhancement. NINOL 70-SL and 96-SL are efficient foam boosters.
NINOL LMP:
Lauramide MEA
Active %: 100
Prilled powder
Rapid viscosity and salt response may be obtained with NINOL LMP.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Nonionics (Continued):

Ethoxylated Amides:

AMIDOX C-2:
PEG-3 Cocamide
Active %: 100
Liquid
AMIDOX C-5:
PEG-6 Cocamide
Active %: 100
Liquid
AMIDOX L-5:
PEG-6 Lauramide
Active %: 100
Solid
Mild, effective emulsifiers for fragrances and essential oils. They impart viscosity and foam enhancement in shampoos, hand soaps, and bath products.

Amphoterics:

Amine Oxides:

AMMONYX LO:
Lauramine oxide
Active %: 30
Liquid
AMMONYX DMCD-40:
Lauramine oxide
Active %: 40
Liquid
AMMONYX MO:
Myristamine oxide
Active %: 30
Liquid
AMMONYX MCO:
Myristamine oxide
Active %: 30
Liquid
AMMONYX CO:
Cetamine oxide
Active %: 30
Liquid
AMMONYX OAO:
Oleamine oxide
Active %: 50
Liquid

STEPAN CO.: Personal Care Products Surfactants (Continued):

Amphoterics (Continued):

AMMONYX SO:
Stearamine oxide
Active %: 25
Paste
AMMONYX CDO:
Cocamidopropylamine oxide
Active %: 30
Liquid
Amine oxides can be formulated with anionic, nonionic, and cationic products and are mildly cationic under acidic conditions. They are used in shampoos, bubble baths, handsoaps and conditioners for their conditioning, foam stabilizing and viscosity building properties. The lower alkyl distribution products provide foam boosting and stabilization. Those of a higher molecular weight provide softness and conditioning. They develop a wide range of viscosities with or without the use of electrolytes. They are good wetting agents in concentrated electrolyte solutions.

Betaines:
AMPHOSOL CA:
Cocamidopropyl betaine
Active %: 30
Liquid
AMPHOSOL CG:
Cocamidopropyl betaine
Active %: 30
Liquid
Used in shampoos, bubble baths and liquid handsoaps. Provide good foaming and stabilization with excellent wetting properties. Compatible with anionic, cationic, and nonionic surfactants.

Esters:
Emollients:

KESSCO IPM:
Isopropyl myristate
Acid Value (Max.): 1.0
Color (APHA) (Max.): 20
Liquid
Melting Point C: -3
KESSCO IPP:
Isopropyl palmitate
Acid Value (Max.): 1.0
Color (APHA) (Max.): 20
Liquid
Melting Point C: 13
Isopropyl Myristate and Isopropyl Palmitate are outstanding emollients, blending agents, solubilizers and good liquid vehicles for highly pigmented products.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Esters (Continued):
Emollients (Continued):

KESSCO IBS:
Isobutyl stearate
Acid Value (Max.): 1.0
Color (APHA) (Max.): 35
Liquid
Melting Point C: 15
Isobutyl Stearate imparts good slip properties to formulations containing mineral oil and can function as a wetting agent for pigments. It is used in lipsticks, bath oils, nail polishes and removers, skin cleansers, creams and lotions.

KESSCO Octyl Isononanoate:
Octyl isononanoate
Acid Value (Max.): 1.0
Color (APHA) (Max.): 20
Liquid
Melting Point C: -30
Octyl Isononanoate has the driest, non-oily skin feel properties of the emollient esters. Its dry-feel emollient and skin breathing properties find application in creams, lotions, make-up, lipsticks, and anti-perspirants.

KESSCO Octyl Palmitate:
Octyl palmitate
Acid Value (Max.): 1.5
Color (APHA) (Max.): 25
Liquid
Melting Point C: 0
Octyl Palmitate enhances the gloss in stick make-up and hair grooming products. It is used in suntan and bath oil formulas, as a binder for pressed powders, and as an emollient in all types of creams and lotions.

KESSCO 653:
Cetyl palmitate
Acid Value (Max.): 2.0
Color (APHA) (Max.): White
White flake
Melting Point C: 52
Cetyl Palmitate is a waxy ester that imparts good skin feel properties to cosmetics. It is used as a base material in stick cosmetic products and as an emollient thickener in creams and lotions.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Esters (Continued):
Emollients (Continued):

KESSCO ICS:
Isocetyl stearate
Acid Value (Max.): 2.0
Color (APHA) (Max.): 200
Liquid
Melting Point C: 0
Isocetyl Stearate is a very rich emollient recommended for use in make-up formulations.

NEOBEE M-5:
Caprylic/Capric triglyceride
Acid Value (Max.): 0.10
Color (APHA) (Max.): 125
Liquid
Melting Point C: -5
NEOBEE-20:
Propylene glycol dicaprylate/dicaprate
Acid Value (Max.): 0.10
Color (APHA) (Max.): 50
Liquid
Melting Point C: -20
The NEOBEE oils are a series of high quality vegetable derived emollient oils. Their safety, excellent stability, and controlled range of lubricities have made them widely used in the cosmetic and pharmaceutical fields in applications such as bath oils, creams, lotions, lipsticks and glosses, make-up bases, pre- and after-shave lotions, flavor and fragrance carriers and extenders, and vehicles for vitamins, antibiotics and medicinals.

Base:

WECOBEE M:
Hydrogenated vegetable oil
Acid Value (Max.): 0.20
Color (APHA) (Max.): 400
Solid
Melting Point C: 36
WECOBEE S:
Hydrogenated vegetable oil
Acid Value (Max.): 0.20
Color (APHA) (Max.): 400
Flake
Melting Point C: 45
The WECOBEE oils are a series of triglycerides derived from edible vegetable oils. They exhibit most of the desirable features of cocoa butter, but few of its shortcomings. The WECOBEEs are extremely uniform in composition and exhibit excellent mold release characteristics. They have been widely used as cocoa butter replacements.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Esters (Continued):
Emulsifiers, Opacifiers (Continued):

KESSCO GMS:
Glyceryl stearate
HLB Value: 3.8
Acid Value (Max.): 3.0
Color (APHA) (Max.): White
Flake
Melting Point C: 56
Emulsifier-opacifier and bodying agent. Used in creams, lotions, anti-perspirants, hair care products and sunscreens.

KESSCO GDS 386F:
Glyceryl distearate
HLB Value: 2.4
Acid Value (Max.): 5.0
Color (APHA) (Max.): White
Flake
Melting Point C: 56
Alternative to Glycerol Monostearate Pure, offering lower HLB value.

KESSCO GMS S.E.:
Glyceryl stearate S.E.
Acid Value (Max.): 20
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 56
Anionic modified for broader emulsification properties. Recommended for use in oil-in-water emulsions that are in the pH range of 5 to 9.

KESSCO GMS S.E. A.S.:
Glyceryl stearate (and) PEG-100 stearate
HLB Value: 11.2
Acid Value (Max.): 3.0
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 53
Nonionic modified for broader emulsification properties. Recommended for low pH (3 to 5). Used as emulsifier, self-emulsifying cream base, hair and skin conditioner. Provides good electrolyte stability.

KESSCO GMO:
Glyceryl oleate
HLB Value: 3.8
Acid Value (Max.): 3.0
Color (APHA) (Max.): Yellow
Liquid
Melting Point C: 20
Effective water-in-oil emulsifier.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Esters (Continued):
Emulsifiers, Opacifiers (Continued):

KESSCO GML:
Glyceryl laurate
HLB Value: 4.9
Acid Value (Max.): 4.0
Color (APHA) (Max.): White
Solid
Melting Point C: 46
Glycerol Monolaurate functions as a primary emulsifier for water-in-oil emulsions. In addition to its emulsifier function, Glycerol Monolaurate can impart a lasting emollient feel to formulations.

KESSCO GDL:
Glyceryl dilaurate
HLB Value: 4.0
Acid Value (Max.): 5.0
Color (APHA) (Max.): White
Solid
Melting Point C: 30
Glycerol Dilaurate is a semi-solid ester recommended for use in free-flowing lotions where the glycerol laurate emolliency is desired.

Pearlescent Agents, Auxiliary Emulsifiers:

KESSCO GMC-8:
Glyceryl caprylate/caprate
HLB Value: 8.3
Acid Value (Max.): 1.5
Color (APHA) (Max.): Light yellow
Liquid
KESSCO GMC-8 is an effective, emulsified short chain ester used as a solubilizer and emulsifier for vitamins, flavors, and medicaments.

KESSCO EGMS:
Glycol stearate
HLB Value: 2.9
Acid Value (Max.): 2.0
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 58
Pearlescent agent in shampoos and liquid hand soaps. It also functions as a bodying agent and emulsion stabilizer in those systems.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Esters (Continued):
Pearlescent Agents, Auxiliary Emulsifiers (Continued):

KESSCO EGDS:
Glycol distearate
HLB Value: 1.5
Acid Value (Max.): 10.0
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 61
Pearlizer, emollient and emulsifier. Suggested for use when no additional viscosity response is desired such as high-solids formulations.

KESSCO EGAS:
Glycol stearate (and) Stearamide AMP
Acid Value (Max.): 5.0
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 57
Pearlescent and bodying agent in shampoos and liquid hand soaps. Also imparts a soft, smooth skin feel to formulations.

KESSCO PGMS:
Propylene glycol stearate
HLB Value: 3.4
Acid Value (Max.): 3.0
Color (APHA) (Max.): White to cream
Flake
Melting Point C: 35
Melting point near that of body temperature and is used in suppositories, lipsticks, and sunscreens. Also functions as auxiliary emulsifier and opacifier.

KESSCO PGML:
Propylene glycol laurate
HLB Value: 3.2
Acid Value (Max.): 3.0
Color (APHA) (Max.): Clear
Liquid
Melting Point C: 10
Light color and low odor liquid emollient and auxilliary emulsifier. Imparts a soft, velvety skin feel to cosmetic products.

STEPAN CO.: Personal Care Products Surfactants (Continued):

Emulsifiers, Viscosity Builders:

KESSCO PEG 200-6000 Mono and Dilaurates:
PEG-4 to PEG-150 laurate and dilaurate
HLB Value: 5.9-19.3
Acid Value: 5-10
Color (APHA) (Max.): Light yellow to cream
Liquids, Soft solids, Waxes
Melting Point C: 5-61

KESSCO PEG 200-6000 Mono and Dioleates:
PEG-4 to PEG-150 oleate and dioleate
HLB Value: 5.0-19.1
Acid Value (Max.): 5-10
Color (APHA) (Max.): Light amber to cream
Liquids, Soft solids, Waxes
Melting Point C: 15-59

KESSCO PEG 200-6000 Mono and Distearates:
PEG-4 and PEG-150 stearate and distearate
HLB Value: 4.8-19.1
Acid Value (Max.): 5-10
Color (APHA) (Max.): White to cream
Solids, Waxes
Melting Point C: 28-61

Nonionic emulsifiers covering a wide HLB range. Non-toxic and non-irritating. Viscosity modifiers, emollients, opacifiers, spreading agents, wetting and dispersing agents. Can be used in lotions, creams, make-up, bath oils, ointments, shampoos, conditioners, suppositories, and sunscreen products.

DREWPOL 3-1-0:
Polyglyceryl-3 oleate
HLB Value: 7.0
Acid Value (Max.): 5.0

DREWPOL 6-1-0:
Polyglyceryl-6 oleate
HLB Value: 8.5
Acid Value (Max.): 6.0

DREWPOL 10-4-0:
Polyglyceryl-10 tetraoleate
HLB Value: 6.0
Acid Value (Max.): 8.0

DREWPOL 10-10-0:
Polyglyceryl-10 decaoleate
HLB Value: 3.0
Acid Value (Max.): 10.0

The DREWPOL polyglycerol esters comprise a relatively new class of emulsifiers offered to the cosmetic and pharmaceutical industries. They are prepared by the esterification of polyglycerols with specific fatty acids. These range from hydrophilic monoesters to lipophilic decoesters. The polyglyceryl esters are effective nonionic emulsifiers in both oil-and-water and water-in-oil emulsions. They are non-toxic and are degraded by the body to glycerine and fatty acid.

STEPAN CO.: Textiles Surfactants:

Alkyl Sulfates:

STEPANOL AM:
Ammonium lauryl sulfate
% Activity: 30
Viscous liquid
STEPANOL WA-100:
Sodium lauryl sulfate
% Activity: 97
White powder
STEPANOL WAC:
Sodium lauryl sulfate
% Activity: 30
Clear liquid
STEPANOL lauryl sulfates are excellent detergents, foamers and also useful as wetting agents and penetrants.

STEPANTEX B-29:
Sodium octyl sulfate
% Activity: 32
Clear liquid
STEPANTEX B-29 is a good wetting and mercerizing agent.

Alkyl Ester Sulfonates:

ALPHA-STEP ML-40:
Sodium sulfo methyl laurate
% Activity: 37
Clear liquid
Scouring, leveling, coupling and foaming agent.

Alkyl Ether Sulfates:

STEOL CS-460:
Sodium lauryl ethoxy sulfate
% Activity: 60
Clear liquid
STEOL CA-460:
Ammonium lauryl ethoxy sulfate
% Activity: 60
Clear liquid
STEOL 4N:
Sodium lauryl ethoxy sulfate
% Activity: 28
Clear liquid
STEOLS are excellent foaming agents and detergents.

STEPAN CO.: Textiles Surfactants (Continued):

Sulfonates:

BIO-SOFT D-40:
Sodium dialkylbenzene sulfonate
% Activity: 40
Liquid
BIO-SOFT D-62:
Sodium alkylbenzene sulfonate
% Activity: 60
Slurry
BIO-SOFT AS-40:
Sodium olefin sulfonate
% Activity: 40
Liquid
BIO-TERGE PAS-8S:
Octane sulfonate salt
% Activity: 35
Liquid
NINATE 411:
Alkylamine alkylbenzene sulfonate
% Activity: 90
Yellow liquid
Anionic emulsifiers, penetrants and dye dispersants.
Alkyl aryl sulfonates are excellent wetting agents.

Sulfonic Acid:

BIO-SOFT S-100:
Alkylbenzene sulfonic acid
% Activity: 97
Dark viscous liquid
Scouring, wetting, bleaching, dyeing assistant.

Alkanolamides:

NINOL 11-CM:
Coconut diethanolamide
% Activity: 100
Light color liquid
NINOL 201:
Oleic diethanolamide
% Activity: 100
Clear amber liquid
NINOLS are emulsifiers and lubricants. Exhibit antistat properties.
NINOL 40-CO:
Coconut diethanolamide
% Activity: 100
Yellow liquid
NINOL 40-CO is an excellent foam stabilizer and thickener.

STEPAN CO.: Textile Surfactants (Continued):

Alkanolamides (Continued):

NINOL 1301:
Fatty alkanolamide, modified
% Activity: 100
Light tan paste

AMIDOX C-2:
Ethoxylated cocoamide
% Activity: 100
Liquid to paste
AMIDOX C-5:
Ethoxylate cocoamide
% Activity: 100
Liquid to paste
AMIDOX series are excellent wetting and leveling agents. They possess properties of both the alkanolamides and nonionic alkoxylates.

Amine Oxides:

AMMONYX CO:
Cetamine oxide
% Activity: 30
Liquid
AMMONYX LO:
Lauramine oxide
% Activity: 30
Liquid
AMMONYX MO:
Myristamine oxide
% Activity: 30
Liquid
AMMONYX SO:
Stearamine oxide
% Activity: 25
Paste
Amine oxides are lubricants, emulsifiers, wetting agents and dye dispersants.

Alcohol Alkoxylates:

STEPANTEX DA-6:
Alcohol ethoxylate
% Activity: 100
Liquid
Scouring, wetting, leveling agent, penetrant and a low foamer.

STEPAN CO.: Textile Surfactants (Continued):

Alcohol Esters:

KESSCO IPP:
Isopropyl palmitate
% Activity: 100
Liquid
KESSCO IPM:
Isopropyl myristate
% Activity: 100
Liquid
KESSCO OP:
Octyl palmitate
% Activity: 100
Liquid
KESSCO BS:
Butyl stearate
% Activity: 100
Liquid
STEPAN C-68:
Methyl oleate/stearate
% Activity: 100
Liquid
Esters are biodegradable replacements for mineral oil. Useful as lubricants in spin finish, coning oils, carding, and dye bath.

Polyalkoxy Esters:

KESSCO 891:
Alkoxy monooleate/stearate
% Activity: 100
Yellow liquid
Water soluble lubricant and emulsifier for finishing application.

KESSCO 894:
Alkoxy dioleate/stearate
% Activity: 100
Yellow liquid
Water dispersible lubricant and emulsifier..

STEPAN CO.: Textile Surfactants (Continued):

Polyol Esters:

KESSCO 874:
Pentaerythritol tetracaprylate/caprate
% Activity: 100
Clear liquid
KESSCO 887:
Trimethylolpropane tricaprylate/caprate
% Activity: 100
Clear liquid
High temperature stable lubricant bases. Suitable where high smoke point, low viscosity and low varnish properties are required.

PEG Esters:

KESSCO PEG 200 DL:
PEG 200 dilaurate
% Activity: 100
Liquid
KESSCO PEG 400 DS:
PEG 400 distearate
% Activity: 100
Solid
KESSCO PEG 600 DL:
PEG 600 dilaurate
% Activity: 100
Liquid
KESSCO PEG 600 DS:
PEG 600 distearate
% Activity: 100
Solid
KESSCO PEG 600 ML:
PEG 600 monolaurate
% Activity: 100
Liquid
KESSCO PEG 6000 DS:
PEG 6000 distearate
% Activity: 100
Wax
PEG esters are lubricants, emulsifiers and softeners.

Tall Oil Esters:

STEPANTEX TM10:
Tall oil esters
% Activity: 100
Liquid

STEPAN CO.: Textile Surfactants (Continued):

Tall Oil Esters (Continued):

STEPANTEX TM15:
Tall oil esters
% Activity: 100
Liquid
STEPANTEX TD14:
Tall oil esters
% Activity: 100
Liquid
Series of biodegradable nonphenolic ethoxylates.

Alkoxylates:

MAKON NF-5:
Polyalkoxylated aliphatic base
% Activity: 97
Yellow liquid
NF-5 is a low foaming wetter and penetrant. Useful in scouring and dye baths.
MAKON NF-12:
NF-12 is a low foaming, alkaline stable wetter and penetrant.
MAKON 4:
MAKON 6:
MAKON 8:
MAKON 10:
Alkoxyphenoxypolyoxyethylene-ethanols
% Activity: 100
Liquid
MAKONs function as all-purpose emulsifiers, detergents, wetters and desizing agents for fiber finish and wet processing.
STEPANTEX CO-30:
STEPANTEX CO-36:
STEPANTEX CO-40:
Castor oil ethoxylates
% Activity: 100
Liquid
Castor oil ethoxylates are lubricants and emulsifiers for fiber finish and wet processing. These are shown in the order of increasing hydrophilicity.

Blend:
STEPANTEX 130:
Anionic/nonionic blend — % Activity: 40
Liquid — High caustic scouring agent.

Hydrotrope:
STEPANTEX SXS:
Sodium xylene sulfonate — % Activity: 40
Liquid — Solubilizer, coupling agent

TEXACO CHEMICAL CO.: SURFONIC N-Series Surface-Active Agents:

The SURFONIC N-Series of nonionic surface-active agents, Chemical Abstracts Service Registry Number 09016-45-9, are reaction products or adducts of nonyl-phenol and ethylene oxide. These products are useful as emulsifiers, wetting agents, detergents, penetrants, solubilizing agents, and dispersants.

SURFONIC N-Series HLB Values:

Product:	HLB Value
N-10	3.4
N-31.5	7.7
N-40	8.9
N-60	10.9
N-85	12.6
N-95	12.9
N-100	13.2
N-102	13.4
N-120	14.1
N-150	15.0
N-200	15.8
N-300	17.1

SURFONIC N-10:
Color, Pt-Co scale: 400 max.
Cloud Point, ml of water or C: 11.5 ml min./13.5 ml max.

SURFONIC N-31.5:
Color, Pt-Co scale: 300 max.
Cloud Point, ml of water or C: 24 ml min./27 ml max.

SURFONIC N-40:
Color, Pt-Co scale: 200 max.
Cloud Point, ml of water or C: 30 ml min./36 ml max.

SURFONIC N-60:
Color, Pt-Co scale: 200 max.
Cloud Point, ml of water or C: 68 ml min./89 ml max.

SURFONIC N-85:
Color, Pt-Co scale: 100 max.
Cloud Point, ml of water or C: 40C min./46C max.

SURFONIC N-95:
Color, Pt-Co scale: 100 max.
Cloud Point, ml of water or C: 52C min./56C max.

SURFONIC N-100:
Color, Pt-Co scale: 100 max.
Cloud Point, ml of water or C: 63C min./67C max.

TEXACO CHEMICAL CO.: SURFONIC N-Series Surface-Active Agents (Continued):

SURFONIC N-102:
Color, Pt-Co scale: 100 max.
Cloud Point, ml of water or C: 69C min./73C max.

SURFONIC N-120:
Color, Pt-Co scale: 100 max.
Cloud Point, ml of water or C: 50C min./54C max.

SURFONIC N-150:
Color, Pt-Co scale: 200 max.
Cloud Point, ml of water or C: 63C min./67C max.

SURFONIC N-200:
Color, Pt-Co scale: 200 max.
Cloud Point, ml of water or C: 72C min./73C max.

SURFONIC N-300:
Color, Pt-Co scale: 200 max.
Viscosity, SUS 210F: 150 min./170 max.

SURFONIC NB-5:
Color, Pt-Co scale: 200 max.
Water, wt. %: 30+-2

SURFONIC HDL:
Color, Pt-Co scale: 100 max.
Water, wt. %: 1.0 max.

Applications:
* Paints
* Agricultural Chemicals
* Paper
* Removal of Wallpaper
* Photographic Film Developing
* Petroleum Production
* Ceramics and Concrete
* Dust Control
* Metal Cleaning
* Acid Cleaners
* Floor Cleaners and Wax Strippers
* Carpet Cleaners
* Waterless Hand Cleaner
* Industrial and Institutional Laundries
* Dry Cleaning Detergent
* Heavy-Duty Detergents, Softeners, and Prespotters
* Lime Soap Dispersion
* Textiles
* Emulsion Polymerization
* Food Additives
* Germicidal Detergents
* Sanitizers
* Other Uses

TEXACO CHEMICAL CO.: SURFONIC Surfactants:

SURFONIC HDL:

SURFONIC HDL is a 6:1 by weight blend of SURFONIC N-85 with triethanolamine. It has a 20F pour point and does not gel when mixed in all proportions with water at 77F or above.

Color, Pt-Co: 100 max.
Water, wt. %: 1.0 max.
Composition, wt. %:
Triethanolamine: 14+-2
SURFONIC N-85: 86+-2

SURFONIC JL-80X Surfactant:

SURFONIC JL-80X is a fluid, water soluble, biodegradable, nonionic surface-active agent which combines into one product good detergency and wetting properties and low freeze and pour points. It is non-gelling in water at 25C and higher.

Cloud Point, 1% aqueous, C: 56 min./63 max.
Color, Pt-Co, 25C: 100 max.

SURFONIC LF-17 Surfactant:

SURFONIC LF-17 is an ethoxylated and propoxylated linear primary 12-14 carbon number alcohol.

Cloud Point, 1% aqueous, C: 32 min./37 max.
Color, Pt-Co scale: 100 max.

SURFONIC L12-3 Surfactant:

SURFONIC L12-3 surfactant is the three-mole ethylene oxide adduct of linear, primary 10-12 carbon number alcohol.

Color, Pt-Co: 50 max.
Hydroxyl No., mg KOH/g: 190+-5

SURFONIC L12-6 Surfactant:

SURFONIC L12-6 surfactant is the six-mole ethylene oxide adduct of linear, primary 10-12 carbon number alcohol.

Cloud Point, C (1% aqueous): 50+-2
Color, Pt-Co: 50 max.

TEXACO CHEMICAL CO.: SURFONIC Surfactants (Continued):

SURFONIC L12-8 Surfactant:
SURFONIC L12-8 is blend of 8-mole ethoxylate of linear primary 10-12 carbon number alcohol.

Cloud Point, 1% Aqueous, C: 80+-2
Color, Pt-Co: 50 max.

SURFONIC L24-2 Surfactant:
SURFONIC L24-2 surfactant is the 1.6 mole ethylene oxide adduct of linear, primary 12-14 carbon number alcohol.

Color, Pt-Co: 50 max.
Hydroxyl No., mg KOH/g: 210+-5

SURFONIC L24-3 Surfactant:
SURFONIC L24-3 surfactant is the three-mole ethylene oxide adduct of linear, primary 12-14 carbon number alcohol.

Color, Pt-Co: 50 max.
Hydroxyl No., mg KOH/g: 170+-5

SURFONIC L24-7 Surfactant:
SURFONIC L24-7 surfactant is the seven-mole ethylene oxide adduct of linear, primary 12-14 carbon number alcohol.

Cloud Point, C (1% aqueous): 50+2
Color, Pt-Co: 50 max.

SURFONIC L24-9 Surfactant:
SURFONIC L24-9 surfactant is the nine-mole ethylene oxide adduct of linear, primary 12-14 carbon number alcohol.

Cloud Point, C (1% aqueous): 75+-2
Color, Pt-Co, 50C: 50 max.

SURFONIC L24-12 Surfactant:
SURFONIC L24-12 surfactnt is the 11.5-mole ethylene oxide adduct of linear, primary 12-14 carbon number alcohol.

Cloud Point, C (10% NaCl): 68+-3
Color, Pt-Co, 50C: 50 max.

SURFONIC L46-7 Surfactant:
SURFONIC L46-7 surfactant is the seven-mole ethylene oxide adduct of linear, primary 14-16 carbon number alcohol.
Cloud Point, C (1% aqueous): 50+-2
Color, Pt-Co, 50C: 50 max.

TEXACO CHEMICAL CO.: Surfactants:

Dinonylphenol (Flashed):

Dinonylphenol-flashed, a viscous liquid possessing a slight phenolic odor, is a mixture of dinonylphenols, predominantly ortho-para-substitited. The side chains are random branched nonyl-radicals. It is insoluble in water and soluble in oil and most organic solvents. Applications for Dinonylphenol include nonionic surfactants, lube oil additives, stabilizers, demulsifiers, fungicides, antioxidants for plastics and rubber, and plasticizers in varnishes, resins, lacquers, and plastics.

Appearance: Clear and substantially free of suspended matter
Boiling Range, C, 5%: 305 min.
95%: 380 max.
Color, Gardner: 6 max.
Specific Gravity, 20/20C: 0.900 min./0.940 max.
Molecular Wt. (theory): 346
Dinonylphenol, wt %: 90-97
Monononylphenol, wt %: 4-8
Pour Point, C: 0
Flash Point, PMCC, F: 340
Weight, 20C, lb/gal: 7.7
CAS Number: 1323655

Nonylphenol:

Nonylphenol, a viscous liquid with a slight phenolic odor, is a mixture of monononylphenols, predominantly para-substituted. It is insoluble in water and soluble in oil and most organic solvents. Applications for Nonylphenol include epoxy resin systems, nonionic surfactants, lube oil additives, stabilizers, demulsifiers, fungicides, antioxidants for plastics and rubber, and plasticizers in varnishes, resins, lacquers, and plastics.

Appearance: Clear and substantially free of suspended matter
Boiling Range, C, IBP: 288 min.
95%: 302 max.
Color, Pt-Co: 100 max.
Hydroxyl No., mg KOH/g: 244 min./255 max.
Specific Gravity, 20/20C: 0.948 min./0.958 max.
Molecular Wt. (theory): 220
Pour Point, C: 2
Flash Point, PMCC, F: 310
Weight, 20C, lb/gal: 7.9
Viscosity, cs, 25C: 1135
100C: 6
CAS Number: 84852153

3M Industrial Chemical Products Division: FLUORAD Fluorochemical Surfactants:

FLUORAD Fluorochemical Surfactants FC-95 and FC-98:
FLUORAD Brand Fluorochemical Surfactants FC-95 and FC-98 are anionic fluorochemical surfactants of exceptional chemical and thermal stability, particularly useful as wetting and foaming agents in acidic solutions.

FC-95:
Free-flowing powder
Composition: 100% active
Type: Anionic
pH (0.1% Aqueous Soln.): 7.5
Melting Point, C: Decomposes at 390C

FC-98:
Free-flowing powder
Composition: 100% active
Type: Anionic
pH (0.1% Aqueous Soln.): 7.0
Melting Point, C: Decomposes at 390C

FLUORAD Fluorochemical Surfactant FC-99:
FLUORAD fluorochemical surfactant FC-99 is an aqueous solution of an anionic fluorochemical surfactant. It has excellent chemical and thermal stability and is particularly useful as a wetting and foaming agent in acidic systems.
FC-99 is a 25% active solution of amine perfluoroalkyl sulfonates in water.
Clear, light colored solution
Type: Anionic
Density: 1.1
pH (as Supplied): 5-7

FLUORAD Fluorochemical Surfactant FC-100:
FLUORAD Surfactant FC-100 is a general purpose amphoteric surfactant characterized by outstanding surface activity and solubility in aqueous solutions over a wide pH range. It is highly effective in solutions having a neutral pH, particularly those with a high electrolyte content.
Dark Amber Viscous Liquid
Type: Amphoteric
Specific Gravity: 1.1
Flash Point: >200F (93C)
Composition: 25% Fluoroalkyl Sulfonate, Sodium Salt
25% Diethylene Glycol Monobutyl Ether
50% Water
Pour Point: 10F (12C)

3M INDUSTRIAL CHEMICAL PRODUCTS DIVISION: FLUORAD Fluorochemical Surfactants (Continued):

FLUORAD Flourochemical Surfactant FC-120:

FLUORAD fluorochemical surfactant FC-120 is an anionic fluorochemical surface active agent that has been especially designed to impart excellent wetting and leveling properties to various aqueous coating systems, particularly clear polishes based on alkali soluble polymers.

Clear light amber to amber liquid
Composition: 25% active in 37.5% 2-Butoxyethanol/37.5% Water
Type: Anionic
pH: 8.5-9.5
Flash Point: 136F
Specific Gravity: 1.0

FLUORAD Fluorochemical Acid Salt FC-124:

FLUORAD Fluorochemical Acid Salt FC-124 is the lithium salt of trifluoromethane sulfonic salt. It is a white powder developed for use as a battery electrolyte.

Molecular Weight: 156
White free flowing powder
Bulk Density (gms./cc): 0.6
Melting Point C: 423
pH (1 Mol. Aqueous): 8.0

FLUORAD Fluorochemical Surfactant FC-126:

FLUORAD Fluorochemical Surfactant FC-126 is an anionic fluorochemical surface active agent particularly useful as an emulsifier in the polymerization of fluorinated monomers where its surface activity and the highly fluorinated nature of micelles formed in aqueous media combine to give this unique utility. FC-126 is classified as an ammonium perfluoroalkane carboxylate. It shows excellent surface activity in alkaline media.

Anionic Fluorochemical
Light colored, free-flowing powder
Composition: 100% active
pH (of a 2% aqueous solution): 6.0
Melting point: Decomposes at 120C

FLUORAD Fluorochemical Surfactant FC-129:

FLUORAD fluorochemical surfactant FC-129 is an anionic surfactant consisting of 50% active solids dissolved in 2-butoxyethanol, ethyl alcohol and water. It is characterized by outstanding surface activity, - illustrated by the improved wetting and leveling it confers to a wide variety of systems.

Yellow to amber liquid
Specific gravity @ 25C: 1.3
Flashpoint: 115F
pH (0.8% solids in aqueous solution): 9.5
Type: Anionic
Composition: 50% Potassium Fluoroalkyl Carboxylates/32% Water/
14% 2-Butoxyethanol/4% Ethyl alcohol

3M INDUSTRIAL CHEMICAL PRODUCTS DIVISION: FLUORAD Fluorochemical Surfactants (Continued):

FLUORAD Flurochemical Surfactant FC-135:

FLUORAD fluorochemical surfactant FC-135 is a cationic surfactant consisting of 50% active solids dissolved in a solution of water and isopropanol. It is characterized by outstanding surface activity, - illustrated by the improved wetting and leveling it confers to many systems--and a substantivity to a variety of metal and siliceous surfaces. These characteristics enable FC-135 to find uses in cleaning and polishing products.

The active solids in FC-135 may be described as fluorinated alkyl quaternary ammonium iodides.

Dark, amber liquid
Specific gravity @ 25C: 1.2
Flashpoint: 53F
pH (2% solids in aqueous solution): 4
Type: Cationic
Composition: 50% active solids/33% isopropyl alcohol/17% water

FLUORAD Fluorochemical Surfactant FC-143:

FLUORAD Fluorochemical Surfactant FC-143 is an anionic fluorochemical surfactant particularly useful as an emulsifier in the polymerization of fluorinated monomers where its surface activity and the highly fluorinated nature of micelles formed in aqueous media combine to give this unique utility. It is also an effective wetting agent in alkaline media. FC-143 may be described chemically as ammonium perfluorooctanoate.

Light Colored Powder
Composition: 100% Ammonium Perfluoroalkyl Carboxylates
pH (0.5 Aqueous Soln): 5
Melting Point: Decomposes at 130C (266F)
Bulk Density (Grams/cc): 0.4-0.5

FLUORAD Fluorochemical Surfactant FC-170C:

FLUORAD fluorochemical surfactant FC-170C is a general purpose nonionic fluorinated surfactant which is characterized by its ability to contribute excellent wetting, spreading and leveling properties to a variety of systems, often with a minimum of foaming.

FC-170C is an 80% active, amber colored, nonionic surfactant. It can be described chemically as fluorinated alkyl polyoxyethylene ethanols.

Amber, viscous liquid
Specific Gravity @ 25C: 1.3
pH (of 1% aqueous solution): 7.0
Cloud Point: <0C
Flash Point: >300F (148.8C)

3M INDUSTRIAL CHEMICAL PRODUCTS DIVISION: FLUORAD Fluorochemical Surfactants (Continued):

FLUORAD Fluorchemical Surfactant FC-171:

FLUORAD fluorochemical surfactant FC-171 is a general purpose nonionic fluorinated surfactant which contributes excellent wetting, spreading and leveling properties to a variety of systems. Some typical application areas include floor polishes, cleaners, high solids coatings, water reducible coatings and radiation curable coatings.

FC-171 is a nonionic surfactant which can be described chemically as fluorinated alkyl alkoxylates.

Amber
Liquid
% Activity: 100%
Specific Gravity @ 25C: 1.4
Flash Point: >300F (148.8C)
Pour Point: 20F (-7C)

FLUORAD Fluorochemical Surfactant FC-740:

FLUORAD fluorochemical surfactant FC-740 is a nonionic fluorochemical surfactant characterized by outstanding activity in low polarity organic solvents, such as toluene, kerosene, and perchloroethylene. It has the unique ability to sustain a foam on various organic liquids.

The active solids in FC-740 may be described as fluoroaliphatic polymeric esters.

Nonionic
Light Amber Liquid
Composition: 50% solids
Solvent: Aromatic Naphtha (C8-C11/B.P.345-425F)
Specific Gravity at 25C: 1.0
Flash Point: 132F (56C)
Pour Point: 10F (-12C)
Viscosity at 25C: 150 cps

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TERGITOL Specialty Surfactants:

TERGITOL Nonionic Surfactant TMN-3:

A clear, oil-soluble liquid which is ideally suited for applications requiring a low-HLB emulsifier. The CAS# is 60828-78-6.

End-use features, including:

* Low pour point.
* Low neat viscosity.
* Low odor.
* High degree of solubility in organic solvents.

Typical Chemical and Physical Properties:

Hydroxyl Number (mg KOH/g): 180
Molecular Weight (calculated from OH#): 312
Degree of Ethoxylation (mole/mole, avg): 2.9
Degree of Ethoxylation (wt%): 41
Actives Content (wt%): 100
Water (wt%): 0.03
Cloud Point (1% in 1:1 propanol/water, ml of water): 14.1

Product Specifications:

Molecular Weight: 278-318
Water (wt%, maximum): 0.5
pH (10% in 10:6 isopropanol/water at 25C): 5.0-8.0

TERGITOL Nonionic Surfactant TMN-6 (90% Aqueous):

Manufactured through the reaction 2,6,8-trimethyl-4-nonanol with ethylene oxide. The CAS # is 60828-78-6.

Advantageous end-use features, including:

* Outstanding wetting and spreading properties.
* Outstanding penetrating properties.
* Excellent solvency and grease-cutting abilities.
* Outstanding oily-soil detergency.
* High degree of solubility in organic solvents.
* Low aqueous viscosities.
* Narrow aqueous gel range.
* Rapid dissolution rate.
* Low odor.

Typical Chemical and Physical Properties:

Hydroxyl Number (mg KOH/g for neat product): 103
Molecular Weight (calculated from OH#): 543
Degree of Ethoxylation (mole/mole, avg): 8
Degree of Ethoxylation (wt%): 65
Actives Content (wt%): 90
Cloud Point (0.5% aqueous solution): 37

Product Specifications:

Cloud Point (0.5% aqueous solution, C): 34-38
pH (10% aqueous solution at 25C): 5.0-8.0
Water (wt%): 8-10
Color, APHA (Pt-Co, maximum): 150
Odor: Mild and Pleasant
Suspended Matter: Substantially Free
Ash (wt%, maximum): 0.05

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TERGITOL Specialty Surfactants (Continued):

TERGITOL Nonionic Surfactant TMN-10 (90% Aqueous):
Manufactured through the reaction of 2,6,8-trimethyl-4-nonanol with ethylene oxide. The CAS# is 60828-78-6.
End-use features, including:
* Outstanding wetting and spreading properties at elevated temperatures.
* High degree of water solubility at elevated temperatures.
* Water solubility in the presence of electrolytes.
* Excellent solvency at elevated temperatures.
* Very low odor.
* Low aqueous viscosities.
* Narrow aqueous gel range.

Typical Chemical and Physical Properties:
Hydroxyl Number (mg KOH/g for neat product): 82
Molecular Weight (calculated from OH#): 683
Degree of Ethoxylation (mole/mole, avg): 11

Product Specifications:
Cloud Point (1% aqueous solution, C): 72-80
pH (10% aqueous solution at 25C): 5.0-8.0
Water (wt%): 8-10
Ash (wt%, maximum): 0.05
Color, APHA (Pt-Co, maximum): 200
Suspended Matter: Substantially Free

TERGITOL Nonionic Surfactant Min-Foam 1X:
A mixture of 11-15 carbon, linear secondary alcohols reacted with ethylene oxide and propylene oxide. The CAS# is 68551-14-4.
Advantageous end-use features, including:
* High degree of surface activity.
* Excellent oily-soil detergency.
* Excellent wetting efficiency.
* Very low pour point.
* Low neat viscosity.
* Very low aqueous solution viscosities.
* Non-gelling in water.
* Very rapid dissolution rate.
* Very low odor.
* High degree of solubility in organic solvents.
* Low and unstable foams.
* Excellent rinseability.

Typical Chemical and Physical Properties:
Hydroxyl Number (mg KOH/g): 87
Molecular Weight (calculated from OH#): 645
Actives Content (wt%): 100
Water (wt%): 0.05

Product Specifications:
Cloud Point (1% aqueous solution): 38-42
pH (1% aqueous solution at 25C): 5-8
Water (wt%, maximum): 0.5
Ross-Miles Foam Test (initial, 5-min, maximum in mm): 25,10

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TERGITOL Specialty Surfactants (Continued):

TERGITOL Nonionic Surfactant Min-Foam 2X:

A mixture of 11-15 carbon, linear secondary alcohols reacted with ethylene oxide and propylene oxide. The CAS# is 68551-14-4.

Advantageous end-use features, including:

* Very low and unstable foams.
* Efficient surface tension reduction.
* Very low pour point.
* Low neat viscosity.
* Very low aqueous solution viscosities.
* Non-gelling in water.
* Very rapid dissolution rate.
* Very low odor.
* High degree of solubility in organic solvents.
* Excellent rinseability.

Typical Chemical and Physical Properties:

Hydroxyl Number (mg KOH/g): 89
Molecular Weight (calculated from OH#): 630
Actives Content (wt%): 100

Product Specifications:

Cloud Point (1% aqueous solution C): 19-23
pH (1% aqueous solution at 25C): 5-8
Water (wt%, maximum): 0.5
Foam Test (initial, 5-minutes, maximum, mm): 15,5
Color (APHA, Pt-Co, maximum): 150

TERGITOL Nonionic Surfactant XJ:

Unique end-use properties, including:

* Extremely low critical micelle concentration.
* Very high aqueous viscosities.
* Very broad aqueous gel range.
* Solubility in aromatic and chlorinated solvents.
* High melting point.

TERGITOL XJ is a high molecular weight copolymer of ethylene oxide and propylene oxide. The CAS# is 9038-95-3.

Typical Chemical and Physical Properties:

Hydroxyl Number (mg KOH/g): 22
Molecular Weight (calculated from OH#): 2550
Actives Content (wt%): 100
Water (wt%): 0.14
Cloud Point (1% aqueous solution): 50
Pour Point (C): 26
pH (1% aqueous solution): 6.5
Viscosity (cP at 50C): 149
Color, APHA (Gardner): 1
Appearance (50C): Hazy Liquid

Product Specifications:

Water (wt%, maximum): 0.25
Color of Melt (Gardner, maximum): 2
Cloud Point (1% aqueous solution, C): 47-52
Odor: Mild and Pleasant

UNION CARBIDE CHEMICALS AND PLASTICS, INC.: TERGITOL Specialty Surfactants (Continued):

TERGITOL Nonionic Surfactant XD:
Unique end-use properties, including:
* Extremely low critical micelle concentration.
* Very high aqueous viscosities.
* Very broad aqueous gel range.
* Solubility in aromatic and chlorinated solvents.
* High melting point.

TERGITOL XD is a high molecular weight copolymer of ethylene oxide and propylene oxide. The CAS# is 9038-95-3.
Product Specifications:
pH (20% aqueous solution at 25C): 5.0-7.0
Water (wt%, maximum): 0.25
Color of Melt (APHA, Pt-Co, maximum): 100
Cloud Point (1% aqueous solution, C): 72-77

TERGITOL Nonionic Surfactant XH:
Unique end-use properties, including:
* Low critical micelle concentration.
* High aqueous viscosities.
* Broad aqueous gel range.
* Solubility in aromatic and chlorinated solvents.
* High melting point.
* Rapid solidification rate.

TERGITOL XH is a high molecular weight copolymer of ethylene oxide and propylene oxide. The CAS# is 9038-95-3.
Product Specifications:
pH (10% aqueous solution at 25C): 4.0-7.0
Water (wt%, maximum): 0.25
Color of Melt (APHA, Pt-Co, maximum): 100

TERGITOL Nonionic Surfactant D-683:
Alkoxylated alkylphenol.
Features include:
* Compatibility with organic solvents.
* Low cloud point.
* High thermal stability.
* Low residual ash.
* Low pour point.
* Rapid dissolution rates.
* Very low odor.
* Low and unstable foams.
* Excellent rinseability.

CAS# is 37251-69-7.
Molecular Weight: 940-1040
Product Specifications:
Cloud Point (5% aqueous solution): 20-24
pH (1% aqueous solution at 25C): 5-7
Color (APHA, Pt-Co, maximum): 200

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Hydrotropes H-55, H-66, and QS-44:

TRITON Hydrotropes are anionic phosphate ester compounds that are highly efficient at solubilizing conventional and low-foam nonionic and anionic surfactants. In addition, these compounds function as highly efficient anionic surfactants in alkaline builder solutions.

TRITON Hydrotrope H-55:
TRITON H-55 solubilizes conventional nonionic and anionic surfactants in built in liquid concentrates.

TRITON Hydrotrope H-66:
TRITON H-66 is unique in its ability to solubilize low-foam nonionic surfactants in built liquid concentrates without increasing the foaming tendency of the system at use concentrations.

TRITON Hydrotrope QS-44:
TRITON QS-44 is recommended primarily as a solubilizer of conventional nonionic surfactants in alkaline cleaning solutions at use concentrations.

TRITON H-55:
Phosphate Ester Form: Potassium Salt
Appearance: Clear, light-amber liquid
Actives Content, wt %: 50
Specific Gravity at 25C: 1.35
Viscosity at 25/25C, cP: 40
Density at 25C, lb/gal: 11.2
pH, as-is: 8 to 10
Pour Point, ASTM D97, F: -10
Flash Point, F: 220

TRITON H-66:
Phosphate Ester Form: Potassium Salt
Appearance: Clear, light-yellow liquid
Actives Content, wt%: 50
Specific Gravity at 25C: 1.26
Viscosity at 25/25C, cP: 120
Density at 25C, lb/gal: 10.5
pH, as-is: 8 to 10
Pour Point, ASTM D97, F: -5
Flash Point, F: >200

TRITON QS-44:
Phosphate Ester Form: Acid
Appearance: Clear, light-amber liquid
Actives Content, wt%: 80
Specific Gravity at 25C: 1.18
Viscosity at 25/25C, cP: 8000
Density at 25C, lb/gal: 9.8
pH, as-is: 1.3 to 2.0 (5% solution)
1.6 (1% solution)
Pour Point, ASTM D97, F: 35
Flash Point, F: 200

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Surfactants:

TRITON Anionic Surfactants GR-5M and GR-7M:

TRITON Anionic Surfactants GR-5M and GR-7M are particularly useful as wetting and rewetting agents for paint and textile applications and other processes requiring emulsification and dispersion performance.

Special Features:

* Excellent wetting and rewetting ability
* Effective water-in-oil emulsifiers
* Provide low interfacial tension between brine and oil

TRITON GR-5M:

Actives Content, wt %: 60
Solvent: Isopropyl alcohol/water
Appearance: Clear, pale-yellow liquid
Color, max: 200 (APHA)
Viscosity at 25C, cP: 40
Specific Gravity at 20/20C: 1.005
Density at 25C, lb/gal: 8.4
Flash Point, Setaflash Closed Cup, F: 72
pH, 1% aqueous solution: 6.0

TRITON GR-7M:

Actives Content, wt %: 64
Solvent: Light peroleum distillate
Appearance: Clear, light amber liquid
Color, max: 2 (VCS)
Viscosity at 25C, cP: 110
Specific Gravity at 20/20C: 1.04
Density at 25C, lb/gal: 8.7
Flash Point, Setaflash Closed Cup, F: 133
pH, 1% aqueous solution: 7.0

TRITON Amphoteric Surfactant QS-15:

TRITON QS-15 is a water-soluble, amphoteric, liquid surfactant.

Special Features:

* Outstanding solubility and stability in caustic
* Excellent detergency on hard surfaces

Typical Physical Properties:

Actives Content, wt%: 100
Appearance: Amber liquid
Color, VCS: 7-14
Viscosity, cP:
  at 25C: 8500
  at 40C: 1800
Pour Point, C (F): -4 (25)
Specific Gravity at 25/25C: 1.12
Flash Point, Tag Open Cup, F: >300
Density at 25C, lb/gal: 9.3
pH, 5% aqueous solution: 10.5

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Surfactants (Continued):

TRITON Anionic Surfactant-Hydrotrope QS-44:

TRITON QS-44 is an anionic surfactant and a unique hydrotrope that is especially useful in combination with nonionic surfactants in alkaline cleaning baths. It functions effectively without a co-surfactant in many applications requiring highly alkaline conditions.

Special Features:

* Very effective solubilizer for nonionic surfactants in hot, alkaline cleaning baths and in built liquid detergents.
* Completely stable and does not discolor when compounded with solid caustic or other alkaline builders.
* Soluble and stable in concentrated builder solutions to the boil
* An effective deduster for powdered alkaline materials
* Highly surface-active; unlike conventional hydrotropes it produces wetting and detergency under a variety of conditions

Typical Physical Properties:

Active Content, wt %: 80
Appearance: Clear, light-amber liquid
Color, VCS: 5
Viscosity at 25C, cP: 8000
Pour Point, F: 34
Flash Point, Tag Open Cup, F: >200
Specific Gravity at 25/25C: 1.18
Density at 25C, lb/gal: 9.8
Ionic Character: Acid form

TRITON Anionic Surfactants X-301, 770 Concentrate, and W-30 Concentrate:

Anionic surfactants that exhibit high degrees of surface activity and are recommended for applications requiring wetting, detergency, and emulsification.

Special Features:

* Good foam stability
* Good wetting agents

TRITON X-301:

Actives Content, wt %: 20
Solvent: Water
Viscosity at 25C, cP: 4200
Pour Point, ASTM D97, F: 30
Specific Gravity at 25/25C: 1.05
Density, lb/gal: 8.8
Flash Point, F: >300
pH, 5% aqueous solution: 7.5

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Surfactants (Continued):

TRITON Anionic Surfactants X-301, 770 Concentrate, and W-30 Concentrate (Continued):

TRITON 770 Concentrate:
Actives Content, wt %: 30
Solvent: 2-Propanol (23%)/Water (47%)
Appearance: Clear, amber liquid
Viscosity at 25C, cP: 15
Pour Point, ASTM D97, F: -20
Specific Gravity at 25/25C: 0.98
Density, lb/gal: 8.3
Flash Point, F: 71
pH, 5% aqueous solution: 7.5

TRITON W-30 Concentrate:
Actives Content, wt %: 27
Solvent: 2-Propanol (27%)/Water (46%)
Appearance: Clear, amber liquid
Viscosity at 25C, cP: 9
Pour Point, ASTM D97, F: -15
Specific Gravity, at 25/25C: 0.98
Density, lb/gal: 8.2
Flash Point, F: 74
pH, 5% aqueous solution: 7.5

TRITON XL-80N Surfactant:

Combination of features, including:
* Excellent detergency performance
* Outstanding wetting properties
* Low odor
* Low pour point for ease in handling
* Low neat and aqueous viscosities
* No aqueous gel range
* Excellent rinseability
* Rapid dissolution rates in cold water
* Versatile solubility characteristics
* Readily biodegradable

Typical Chemical & Physical Properties:
Actives Content (wt%): 100
Appearance: Clear to hazy liquid
Color, APHA (Pt-Co): 25
Molecular Weight: 442
Viscosity (cP at 25C): 25
Specific Gravity (at 30/20C): 0.98
Pour Point (C): -2
Flash Point (C): 127
Residual Alcohol (wt %): <0.1
PEG Content (wt %): <0.5
Water (wt%): 0.03

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Low-Foam Surfactants:

TRITON CF-10:
Typical Physical Properties:
- Active Ingredient, wt %: 100
- Cloud Point, 1% in deionized water, C: 28
- Viscosity at 25C, cP: 250
- Pour Point, ASTM D97, F: 60

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: Yellow
  - Performance Loss: Slight
- Acid Formulations:
  - Stability in Acid Formulations: Good
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Good
- Foam in Acid Systems: Low
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 100

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Good
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Good
- Metal Cleaning: Good
- Textile Wetting: Good

TRITON CF-21:
Typical Physical Properties:
- Active Ingredient, wt %: 100
- Cloud Point, 1% in deionized water, C: 40
- Handling:
  - Viscosity at 25C, cP: 250
  - Pour Point, ASTM D97, F: -30

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: Tan
  - Performance Loss: Moderate
- Acid Formulations:
  - Stability in Acid Formulations: Good
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Not Recommended
- Foam in Acid Systems: Low
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 110

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Good
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Good
- Metal Cleaning: Good
- Textile Wetting: Excellent

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Low-Foam Surfactants (Continued):

TRITON CF-32:
Typical Physical Properties:
- Active Ingredient, wt %: 95
- Cloud Point, 1% in deionized water, C: 25
- Viscosity at 25C, cP: 550
- Pour Point, ASTM D97, F: 15

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: Tan
  - Performance Loss: Moderate
- Acid Formulations:
  - Stability in Acid Formulations: Good
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Fair
- Foam in Acid Systems: Moderate; Not Recommended
- Foam:
  - Above 110F: Very Low
  - Minimum Water Temperature for Low Foam, F: 85

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Excellent
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Poor
- Metal Cleaning: Fair
- Textile Wetting: Fair

TRITON CF-54:
Typical Physical Properties:
- Active Ingredient, wt %: 100
- Cloud Point, 1% in deionized water, C: 38
- Viscosity at 25C, cP: 175
- Pour Point, ASTM D97, F: 35

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: White
  - Performance Loss: None
- Acid Formulations:
  - Stability in Acid Formulations: Not Recommended
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Good
- Foam in Acid Systems: Not Recommended
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 110

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Fair
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Very Good
- Metal Cleaning: Good
- Textile Wetting: Excellent

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Low-Foam Surfactants (Continued):

TRITON CF-76:
Typical Physical Properties:
- Active Ingredient, wt %: 100
- Cloud Point, 1% in deionized water, C: 31
- Viscosity at 25C, cP: 295
- Pour Point, ASTM D97, F: 40

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: White
  - Performance Loss: None
- Acid Formulations:
  - Stability in Acid Formulations: Not Recommended
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Good
- Foam in Acid Systems: Not Recommended
- Foam:
  - Above 110F: Very Low
  - Minimum Water Temperature for Low Foam, F: 95

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Excellent
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Not Recommended
- Metal Cleaning: Good
- Textile Wetting: Excellent

TRITON CF-87:
Typical Physical Properties:
- Active Ingredient, wt %: 90
- Cloud Point, 1% in deionized water, C: 32
- Viscosity at 25C, cP: 240
- Pour Point, ASTM D97, F: 30

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: Slight
  - Performance Loss: None
- Acid Formulations:
  - Stability in Acid Formulations: Good
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Not Recommended
- Foam in Acid Systems: Low
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 100

Applications:
- Machine Dishwashing: Good
  - Defoaming Food Soils: Good
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Very Good
- Metal Cleaning: Good
- Textile Wetting: Good

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Low-Foam Surfactants (Continued):

TRITON DF-12:
Typical Physical Properties:
Active Ingredient, wt%: 100
Cloud Point, 1% in deionized water, C: 17
Viscosity at 25C, cP: 60
Pour Point, ASTM D97, F: 65
Performance Characteristics:
Caustic Stability:
Discoloration on NaOH: Off-White
Performance Loss: None
Acid Formulations:
Stability in Acid Formulations: Good
Chlorine Stability:
With Organic Powder Chlorine-Releasing Agent: Not Recommended
Foam in Acid Systems: Low
Foam:
Above 110F: Very Low
Minimum Water Temperature for Low Foam, F: 60
Applications:
Machine Dishwashing:
Defoaming Food Soils: Good
Glassware Spotting Prevention: Good
Rinse-Aid Wetting: Good
Metal Cleaning: Good
Textile Wetting: Good

TRITON DF-16:
Typical Physical Properties:
Active Ingredient, wt %: 100
Cloud Point, 1% in deionized water, C: 36
Viscosity at 25C, cP: 35
Pour Point, ASTM D97, F: 20
Performance Characteristics:
Caustic Stability:
Discoloration on NaOH: Tan
Performance Loss: Severe
Acid Formulations:
Stability in Acid Formulations: Excellent
Chlorine Stability:
With Organic Powder Chlorine-Releasing Agent: Not Recommended
Foam in Acid Systems: Low
Foam:
Above 110F: Low
Minimum Water Temperature for Low Foam, F: 100
Applications:
Machine Dishwashing:
Defoaming Food Soils: Poor
Glassware Spotting Prevention: Good
Rinse-Aid Wetting: Good
Metal Cleaning: Good
Textile Wetting: Excellent

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON Low-Foam Surfactants (Continued):

TRITON DF-18:
Typical Physical Properties:
- Active Ingredient, wt %: 90
- Cloud Point, 1% in deionized water, C: <0
- Viscosity at 25C, cP: 140
- Pour Point, ASTM D97, F: 65

Performance Characteristics:
- Caustic Stability:
  - Discoloration on NaOH: Yellow
  - Performance Loss: Slight
- Acid Formulations:
  - Stability in Acid Formulations: Fair
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Good
- Foam in Acid Systems: Low
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 110

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Good
  - Glassware Spotting Prevention: Good
  - Rinse-Aid Wetting: Good
- Metal Cleaning: Good
- Textile Wetting: Good

TRITON DF-20:
Typical Physical Properties:
- Active Ingredient, wt %: 100
- Cloud Point, 1% in deionized water, C: Not Soluble
- Viscosity at 25C, cP: 630
- Pour Point, ASTM D97, F: 5

Performance Characteristics:
- Acid Formulations:
  - Stability in Acid Formulations: Not Recommended
- Chlorine Stability:
  - With Organic Powder Chlorine-Releasing Agent: Not Recommended
- Foam:
  - Above 110F: Low
  - Minimum Water Temperature for Low Foam, F: 110

Applications:
- Machine Dishwashing:
  - Defoaming Food Soils: Poor
  - Rinse-Aid Wetting: Not Recommended
- Metal Cleaning: Good
- Textile Wetting: Not Recommended

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON RW-Series Surfactants:

Modern detergents effectively emulsify the oily and greasy soils removed from various materials. These emulsified oils and greases are major constituents of municipal and industrial wastes and therefore have great environmental significance. The TRITON RW-Series allow the separation of such oils from waste water and also permit recovery of the surfactant for reuse.

Special Features:
* Excellent emulsifiers
* Controlled emulsion separation
* Recoverable emulsifiers

The members of the TRITON RW-Series are alkylamine ethoxylates made by the reaction of t-alkyl primary amines with ethylene oxide. The active ingredient content is 100 percent.

RW-20:
Appearance: Clear, light amber liquid
Active Ingredient, min, %: 99
Moles EO (x + y): 2
HLB Value: 6 to 8
Neutralization Equivalent: 287
Water Content, max, %: 0.5
Color, VCS, max: 5
Specific Gravity at 25C: 0.913
Density, lb/gal: 7.61
Flash Point, F: 332
Cloud Point, C: Insoluble
pH, 5% aqueous solution: 10.4 alcoholic
Viscosity, at 25C, cP: 240

RW-50:
Appearance: Clear, light amber liquid
Active Ingredient, min, %: 99
Moles EO (x + y): 5
HLB Value: 12 to 14
Neutralization Equivalent: 419
Water Content, max, %: 0.5
Color, VCS, max: 5
Specific Gravity at 25C: 0.968
Density, lb/gal: 8.06
Pour Point, F: -38
Flash Point, F: 270
Cloud Point, 1% aqueous solution, C: <0
pH, 5% aqueous solution: 10.2

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON RW-Series Surfactants (Continued):

RW-75:
Appearance: Clear, light amber liquid
Active Ingredient, min, %: 99
Moles EO (x + y): 7.5
HLB Value: 14 to 16
Neutralization Equivalent: 529
Water Content, max, %: 0.5
Color, VCS, max: 5
Specific Gravity at 25C: 0.981
Density, lb/gal: 8.17
Flash Point, F: 270
Cloud Point, 1% aqueous solution, C: 32
pH, 5% aqueous solution: 10.0

RW-100:
Appearance: Sl hazy, amber liquid
Active Ingredient, min, %: 99
Moles EO (x + y): 10
HLB Value: 16
Neutralization Equivalent: 639
Water Content, max, %: 0.5
Color, VCS, max: 5
Specific Gravity at 25C: 1.004
Density, lb/gal: 8.36
Pour Point, F: -25
Flash Point, F: 300
Cloud Point, 1% aqueous solution, C: 67
pH, 5% aqueous solution: 10.4
Viscosity, at 25C, cP: 180

RW-150:
Appearance: Sl hazy, amber liquid
Active Ingredient, min, %: 99
Moles EO (x + y): 15
HLB Value: >16
Neutralization Equivalent: 859
Water Content, max, %: 0.5
Color, VCS, max: 5
Specific Gravity at 25C: 1.024
Density, lb/gal: 8.58
Pour Point, F: -8
Flash Point, F: >300
Cloud Point, C: 96
pH, 5% aqueous solution: 10.1
Viscosity at 25C, cP: 480

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON X-Series Surfactants:

The TRITON X-Series of nonionic surfactants are prepared by the reaction of octylphenol with ethylene oxide. The products are of the type commonly described as alkylaryl polyether alcohols.

Octylphenol Series:

TRITON X-15:	x=1
TRITON X-35:	x=3
TRITON X-45:	x=5
TRITON X-114:	x=7-8
TRITON X-100:	x=9-10
TRITON X-102:	x=12-13
TRITON X-165-70% active:	x=16
TRITON X-305-70% active:	x=30
TRITON X-405-70% active:	x=40
TRITON X-705-70% active:	x=70

The products are mixtures, with respect to length of the polyoxyethylene chain; the "x" values given above represent the average number of ethylene oxide units in the ether side chain of each product. The distribution of various polyoxyethylene chain lengths in each of the surfactants follows the Poisson distribution.

The principal uses of these surfactants are in industrial and household detergent applications and in emulsifying agents. They are employed in almost every type of liquid, paste, and powdered cleaning compound, ranging from heavy-duty industrial products to gentle detergents for fine fabrics. These surfactants are also important ingredients of primary emulsifier mixtures used in the manufacture of emulsion polymers, stabilizers in latex polymers, and emulsifiers for agricultural emulsion concentrates, and wettable powders.

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON X-Series Surfactants (Continued):

X-15:
Form: Liquid
Average EO Units: 1
Active Ingredient, %: 100
Color, APHA: 250
Specific Gravity, 25/25C: 0.985
Density, lb/gal: 8.2
Viscosity, Brookfield, at 25C, cP: 790
Pour Point, F: 15
Flash Point, Tag Open Cup, F: >300
HLB Value: 3.6
Surface Area, A: 23

X-35:
Form: Liquid
Average EO Units: 3
Active Ingredient, %: 100
Color, APHA: 125
Specific Gravity, 25/25C: 1.023
Density, lb/gal: 8.5
Viscosity, Brookfield, at 25C, cP: 370
Pour Point, F: -10
Flash Point, Tag Open Cup, F: >300
HLB Value: 7.8
Surface Area, A: 38

X-45:
Form: Liquid
Average EO Units: 5
Active Ingredient, %: 100
Color, APHA: 100
Specific Gravity, 25/25C: 1.040
Density, lb/gal: 8.7
Viscosity, Brookfield, at 25C, cP: 290
Pour Point, F: -15
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: <0
HLB Value: 10.4
Surface Area, A: 42

X-114:
Form: Liquid
Active EO Units: 7-8
Active Ingredient, %: 100
Color, APHA: 100
Specific Gravity, 25/25C: 1.054
Density, lb/gal: 8.8
Viscosity, Brookfield, at 25C, cP: 260
Pour Point, F: 15
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: 22
HLB Value: 12.4

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON X-Series Surfactants (Continued):

X-100:
Form: Liquid
Average EO Units: 9-10
Active Ingredient, %: 100
Color, APHA: 100
Specific Gravity, 25/25C: 1.065
Density, lb/gal: 8.9
Viscosity, Brookfield, at 25C, cP: 240
Pour Point, F: 45
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: 65
HLB Value: 13.5
Surface Area, A: 48-54

X-102:
Form: Liquid
Average EO Units: 12-13
Active Ingredient, %: 100
Color, APHA: 100
Specific Gravity, 25/25C: 1.071
Density, lb/gal: 8.9
Viscosity, Brookfield, at 25C, cP: 330
Pour Point, F: 60
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: 88
HLB Value: 14.6

X-165-70%:
Form: Aq. Soln.
Average EO Units: 16
Active Ingredient, %: 70
Color, APHA: 125
Specific Gravity, 25/25C: 1.080
Density, lb/gal: 9.0
Viscosity, Brookfield, at 25C, cP: 540
Pour Point, F: 55
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: >100
HLB Value: 15.8
Surface Area, A: 131

X-305-70%:
Form: Aq. Soln.
Average EO Units: 30
Active Ingredient, %: 70
Color, APHA: 150
Specific Gravity, 25/25C: 1.095
Density, lb/gal: 9.1
Viscosity, Brookfield, at 25C, cP: 470
Pour Point, F: 35
Flash Point, Tag Open Cup, F: >300
Cloud Point, 1% aqueous solution, C: >100
HLB Value: 17.3

UNION CARBIDE CHEMICALS AND PLASTICS CO., INC.: TRITON X-Series Surfactants (Continued):

X405-70%:
Form: Aq. Soln.
Average EO Units: 40
Active Ingredient, %: 70
Color, APHA: 250
Specific Gravity, 25/25C: 1.102
Density, lb/gal: 9.2
Viscosity, Brookfield, at 25C, cP: 490
Pour Point, F: 25
Flash Point, Tag Open Cup, F: >212
Cloud Point, 1% aqueous solution, C: >100
HLB Value: 17.9
Surface Area, A: 88

X-705-70%:
Form: Aq. Soln.
Average EO Units: 70
Active Ingredient, %: 70
Color, APHA: 500
Specific Gravity, 25/25C: 1.1
Density, lb/gal: 9.2
Viscosity, Brookfield, at 25C, cP: 505
Pour Point, F: 43
Flash Point, Tag Open Cup, F: >230
Cloud Point, 1% aqueous solution, C: >100
HLB Value: 18.7

R.T. VANDERBILT CO., INC.: VANSEAL Surfactants:

The VANSEAL surfactants are anionic wetting agents. They are modified or "interrupted" soaps that possess many of the more desirable properties of synthetic surfactants. VANSEAL surfactants are derived from natural fatty acids and the amino acid, N-methyl glycine (Sarcosine). They are available commercially in the acid form or as the sodium salt.

Features:

* Outstanding lather building and resistance to sebum delathering
* Excellent foaming and wetting
* Rapid biodegradability
* Good detergency
* Outstanding mildness to skin and eyes
* Compatibility with quaternary ammonium germicides and conditioners
* Substantivity to skin and hair
* Low cloud point (lowers the cloud point of other surfactants when used together)
* Wide compatibility with medicaments
* Good tolerance to hard water
* Resistance to oxidizing agents
* High salt tolerance
* Solubility in highly alkaline systems
* Solubility, stability, and performance in neutral to moderately acidic formulations

Acids:

VANSEAL LS:
Lauroyl Sarcosine
Active Ingredient, %: 94 min.
Free Fatty Acid, %: 6 max.
Appearance: White, Waxy Solid
Ave. Mol. Wt. of Active: 270
Softening Point, C: 34-37

VANSEAL CS:
Cocoyl Sarcosine
Active Ingredient, %: 94 min.
Free Fatty Acid, %: 6 max.
Appearance: Pale Yellow Liquid
Ave. Mol. Wt. of Active: 280

R.T. VANDERBILT CO., INC.: VANSEAL Surfactants (Continued):

Acids (Continued):

VANSEAL MS:
Myristoyl Sarcosine
Active Ingredient, %: 94 min.
Free Fatty Acid, %: 6 max.
Appearance: White, Waxy Solid
Ave. Mol. Wt. of Active: 298
Softening Point, C: 48-53

VANSEAL OS:
Oleoyl Sarcosine
Active Ingredient, %: 94 min.
Free Fatty Acid, %: 6 max.
Appearance: Yellow Liquid
Ave. Mol. Wt. of Active: 349

Salts:

VANSEAL NALS-30:
Sodium Lauroyl Sarcosinate
Active Ingredient, %: 29-31
Physical Form: Colorless Liquid
Solvent: Water
pH, 10% Solution: 7.5-8.5

VANSEAL NALS-95:
Sodium Lauroyl Sarcosinate
Active Ingredient, %: 94 min.
Physical Form: White Powder
pH, 10% Solution: 7.5-8.5

VANSEAL NACS-30:
Sodium Cocoyl Sarcosinate
Active Ingrdeient, %: 29-31
Physical Form: Pale Yellow Liquid
Solvent: Water
pH, 10% Solution: 7.5-8.5

VANSEAL NAMS-30:
Sodium Myristoyl Sarcosinate
Active Ingredient, %: 29-31
Physical Form: Colorless Liquid
Solvent: Water
pH, 10% Solution: 7.5-8.5

VISTA CHEMICAL CO.: Surfactant Products:

ALFOL Alcohols:

High purity, synthetic linear primary alcohols available as pure homologs or blends having even numbered carbon chains; physically and chemically equivalent to the "natural" alcohols such as those derived from coconut oil and tallow.

Pure Homologs: Applications include various chemical intermediates, lubricants or emollients in cosmetics, specialty solvents, and tobacco sucker control agents.

ALFOL Alcohols:

6:
Common Name: 1-Hexanol
Purity Wt %: 98.0 min.
Typical Hydroxyl No.: 547

8:
Common Name: 1-Octanol
Purity Wt %: 98.8 min.
Typical Hydroxyl No.: 428

10:
Common Name: 1-Decanol
Purity Wt %: 98.0 min.
Typical Hydroxyl No.: 352

12:
Common Name: Lauryl Alcohol
Purity Wt %: 98.5 min.
Typical Hydroxyl No.: 295-302

14:
Common Name: Myristyl Alcohol
Purity Wt %: 96.0 min.
Typical Hydroxyl No.: 255-264

16:*
Common Name: Cetyl Alcohol
Purity Wt %: 95.0 min.
Typical Hydroxyl No.: 218-238

18:*
Common Name: Stearyl Alcohol
Purity Wt %: 95.0 min.
Typical Hydroxyl No.: 200-220

* Available flaked

VISTA CHEMICAL CO.: Surfactant Products (Continued):

ALFOL Alcohols:

High Molecular Weight Alcohols:

White, waxy nearly odorless solids; used as defoamers and feedstock for emulsifiers, lubricants, pour point depressants, and synthetic waxes and binders.

ALFOL Alcohol:

20+:

Typical Wt % CnOH:	49.0	C20
	30.0	C22
	12.0	C24
	9.0	C26+

Typical Hydroxyl No.: 130
Typical Carbonyl Wt %: 0.3
Typical Flash Point (PM): 390F
Typical Melting Range C: 45-54

22+

Typical Wt % CnOH:	5.0	C20
	51.0	C22
	27.0	C24
	11.0	C26
	6.0	C28+

Typical Hydroxyl No.: 112
Typical Carbonyl No.: 0.4
Typical Flash Point (PM): 410F
Typical Melting Range C: 45-58

VISTA CHEMICAL CO.: Surfactant Products (Continued):

ALFOL Alcohol Blends:

Uses include various chemical intermediates, such as alkyl ether amines, lube oil additives, metal rolling oils, plasticizers, tertiary amines, tobacco sucker control agents and surfactant feedstocks.

ALFOL Alcohols:

610ADE:
Avg. MW: 140

810:
Avg. MW: 145

810FD:
Avg. MW: 141

1214:
Avg. MW: 199

1214-GC:
Avg. MW: 195

1216-CO:
Avg. MW: 198

1412:
Avg. MW: 205

1418-DDB:
Avg. MW: 243

1618:
Avg. MW: 253

1618-CG:
Avg. MW: 261

1620:
Avg. MW: 259

VISTA CHEMICAL CO.: Surfactant Products (Continued):

Ethoxylated Alcohols/Ether Sulfates:

ALFONIC Ethoxylates:

Biodegradable ethoxylates derived from ALFOL Alcohol blends; essentially 100% active; used for sulfation to produce high quality ether sulfate surfactants and used directly as biodegable surfactants, emulsifiers, detergents, foaming agents and cleaners.

Ethoxylate:

ALFONIC 610-50R:
HLB: 10.0
Typical Moles EO: 3.1
Clear Liquid

ALFONIC 810-40:
HLB: 8.0
Typical Moles EO: 2.2
Clear Liquid

ALFONIC 810-60:
HLB: 12.0
Typical Moles EO: 4.8
Clear Liquid

ALFONIC 1012-40:
HLB: 8.0
Typical Moles EO: 2.5
Clear Liquid

ALFONIC 1012-60:
HLB: 12.0
Typical Moles EO: 6.0
Clear Liquid

ALFONIC 1214-GC-30:
HLB: 6.2
Typical Moles EO: 2.0
Clear Liquid

ALFONIC 1214-GC-40:
HLB: 7.8
Typical Moles EO: 2.8
Clear Liquid

ALFONIC 1216-22:
HLB: 4.4
Typical Moles EO: 1.3
Clear Liquid

VISTA CHEMICAL CO.: Surfactant Products (Continued):

ALFONIC Ethoxylates (Continued):

ALFONIC 1412-40:
HLB: 8.0
Typical Moles EO: 3.3
Clear Liquid

ALFONIC 1412-60:
HLB: 12.0
Typical Moles EO: 7.0
Cloudy Liquid

ALFONIC 1412-66:
HLB: 13.2
Typical Moles EO: 9.0
White Solid

NOVEL 1412-70:
HLB: 14.0
Typical Moles EO: 11.0
White Solid

VISTA CHEMICAL CO.: Surfactant Products (Continued):

NOVEL Ethoxylates:

NOVEL II 810-40:
HLB: 8.0
Moles EO: 2.2
Clear liquid
NOVEL II 810-60:
HLB: 12.0
Moles EO: 4.8
Clear liquid
NOVEL II 810-70:
HLB: 14.0
Moles EO: 7.6
Clear liquid
NOVEL II 1216CO-30:
HLB: 6.0
Moles EO: 2.0
Clear liquid
NOVEL II 1216CO-40:
HLB: 8.0
Moles EO: 3.0
Clear liquid
NOVEL II 1216CO-60:
HLB: 12.0
Moles EO: 6.8
Clear liquid
NOVEL II 1618-46:
HLB: 9.2
Moles EO: 5.0
White solid

NALKYLENE Detergent Alkylate:

NALKYLENE 500 Alkylate:
Mol Wt: 232-239
NALKYLENE 500L Alkylate:
Mol Wt: 231-241
NALKYLENE 540L Alkylate:
Mol Wt: 238-242
NALKYLENE 550L Alkylate:
Mol Wt: 240-248
NALKYLENE 550BL Alkylate:
Mol Wt: 240-248
NALKYLENE 575L Alkylate:
Mol Wt: 248-252
NALKYLENE 600L Alkylate:
Mol Wt: 258-256

WITCO CORP.: Surfactants: Anionics: Alkyl Sulfates:

WITCOLATE 6400:
Sodium Lauryl Sulfate
Liquid
Activity, %: 29.0
Chloride, %: 0.4
Sulfate, %: 1.0
Free Oil, %: 1.3
Flash point, F: >200
Specific Gravity, 25/20C: 1.04
Used in shampoos, bubble baths, light duty industrial and household cleaning formulations.

WITCOLATE 6430:
Ammonium Lauryl Sulfate
Liquid
Activity, %: 28.5
Chloride, %: 0.4
Sulfate, %: 0.75
Free Oil, %: 1.2
Flash Point, F: >200
Specific Gravity, 25/20C: 1.01
Used in nonalkaline shampoos, bubble baths and mild cleansers

WITCOLATE 6434:
TEA Lauryl Sulfate
Liquid
Activity, %: 40.0
Chloride, %: 0.4
Sulfate, %: 1.5
Free Oil, %: 1.5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.05
Widely used in cosmetic and industrial formulations. Low cloud point and light color.

WITCOLATE 6450:
Sodium Laureth Sulfate (1 EO)
Liquid
Activity, %: 25.0
Chloride, %: 0.8
Sulfate, %: 1.5
Free Oil, %: 1.5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.05
Suggested for clear liquid shampoos, bubble baths and other cosmetic products. Low cloud point and excellent flash foam in hard water.

WITCO CORP.: Surfactants: Anionics: Alkyl Sulfates (Continued):

WITCOLATE 6453:
Sodium Laureth Sulfate (3 EO)
Liquid
Activity, %: 27.0
Chloride, %: 1.0
Sulfate, %: 1.5
Free Oil, %: 1.5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.05

WITCOLATE 6455:
Sodium Laureth Sulfate (2 EO)
Liquid
Activity, %: 27.0
Chloride, %: 1.0
Sulfate, %: 1.0
Free Oil, %: 1.0
Flash Point, F: >200
Specific Gravity, 25/20C: 1.05
Suggested for clear liquid shampoos, bubble baths and other cosmetic products. Low cloud point and excellent flash foam in hard water.

WITCOLATE 6462:
Sodium Alkyl Sulfate
Liquid
Activity, %: 38.0
Chloride, %: 0.5
Sulfate, %: 1.5
Free Oil, %: 2.5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.08
Used as a wetting agent and detergent for textiles, hard surface cleaners and foamers which require pH stability and salt tolerance.

WITCOLATE 6465:
Sodium 2-Ethylhexyl Sulfate
Liquid
Activity, %: 39.0
Chloride, %: 0.7
Sulfate, %: 2.0
Free Oil, %: 3.0
Flash Point, F: >200
Specific Gravity, 25/20C: 1.12
Electrolyte tolerant wetting agent stable over a wide pH range. Used in hard surface cleaners, textile mercerization, and lye peeling of fruits and vegetables (meets requirements of 21CFR 173.315)

WITCO CORP.: Surfactants: Anionics: Phosphate Esters:

EMPHOS 5568:
Complex Phosphate Ester
Liquid
Color, Gardner: 3
Pour Point, C: 12
Acid Value: 210
Flash Point, F: 380
Specific Gravity, 25/20C: 1.10
Acid-form, alkali-stable solubilizer, detergent and hydrotrope for hard surface cleaners and degreasers.

Surfactants: Nonionics: Ethoxylated Triglycerides:

WITCONOL 5906:
POE (30) Castor Oil
Liquid
Color, Gardner: 2
Clear Point, C: 55
HLB: 11.8
Specific Gravity, 25/20C: 1.06
WITCONOL 5909:
POE (40) Castor Oil
Liquid
Color, Gardner: 2
Clear Point, C: 80
HLB: 13.0
Specific Gravity, 25/20C: 1.06
Water-soluble emulsifiers for oils, solvents and waxes, pigment dispersants; degreasers, emulsifiers and lubricants in fat liquoring, viscosity and emulsion stabilizers for PVA and water-based paints; emulsifiers and dispersants for urethane foams and polyester resins; coemulsifiers in fabric softener and dye carrier systems; emulsifiers in synthetic fiber lubricants.

WITCO CORP.: Surfactants: Cationics:

WITCAMINE 6606:
POE(15) Tallow Amine
Liquid
Color, Gardner: 8
Pour Point, C: -10
HLB: 14.3
Flash Point, F: >200
Specific Gravity, 25/20C: 1.02
Antiprecipitant for mixed dye baths; leveling agent for acid dyes; migrating agent for dispersed dyes; antistat for synthetic fiber processing.

WITCAMINE 6622:
POE(30) Oleyl Amine
Liquid
Color, Gardner: 6
Pour Point, C: 5
HLB: 16.6
Specific Gravity, 25/20C: 1.07
Emulsifier and textile dyeing assistant; antiprecipitant in cross dyeing; mild stripping agent and leveler for acid dyes.

Amphoteric:

EMCOL 6748:
Cocamido-propyl Betaine
Liquid
Color, Gardner: 3
Clear Point, C: 0
Solids, %: 35
Flash Point, F: >200
Specific Gravity, 25/20C: 1.05
Foaming agent and mild detergent for a wide variety of personal care formulations.

Formulated Blends:

ADSEE 2064:
Proprietary Blend
Liquid
Solids, %: 90
pH, 5% aq: 6.0
Flash Point, F: 80
Specific Gravity, 25/20C: 0.99
Penetrant base for agricultural use. Residues of ADSEE 2064 are exempt from tolerance requirements under 40CFR 180.1001(c).

ADSEE 2066:
Proprietary Blend
Liquid
Solids, %: 100
pH, 5% aq: 5.5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.04
Spreader/activator for agricultural systems. Residue of ADSEE 2066 are exempt from tolerance requirements under 40CFR 180.1001(c).

WITCO CORP.: Surfactants: Nonionics: Alkanolamides:

WITCAMIDE 6511:
Lauramide DEA
Solid
Free Amine, %: 6
Free Fatty Acid, %: Nil
Flash Point, F: >200
Specific Gravity, 25/20C: 0.98
Provides thickening and foam stabilization in many cosmetic, industrial and household formulations.

WITCAMIDE 6514:
Cocamide DEA
Liquid
Free Amine, %: 6
Free Fatty Acid, %: Nil
Flash Point, F: >200
Specific Gravity, 25/20C: 0.98

WITCAMIDE 6515:
Cocamide DEA
Liquid
Free Amine, %: 6
Free Fatty Acid, %: Nil
Flash Point, F: >200
Specific Gravity, 25/20C: 0.99

WITCAMIDE 6531:
Cocamide DEA
Liquid
Free Amine, %: 25
Free Fatty Acid, %: 5
Flash Point, F: >200
Specific Gravity, 25/20C: 1.01
Exhibit good foam stabilization, detergency, emulsification and thickening. Used in a variety of household, industrial and cosmetic formulations.

WITCAMIDE 6533:
Cocamide DEA Modified
Liquid
Free Amine %: 18
Free Fatty Acid, %: 25
Flash Point, F: >200
Specific Gravity, 25/20C: 0.99
Used as a component in conveyor lubricants, as well as, in a wide variety of hard surface cleaners.

WITCAMIDE 6538:
Cocamide DEA Modified
Liquid
Free Amine, %: 20
Free Fatty Acid, %: 25
Flash Point, F: >200
Specific Gravity, 25/20C: 0.99
Low-foaming component used in a variety of hard surface cleaners as an emulsifier and viscosity builder.

WITCO CORP.: Surfactants: Nonionics: Ethoxylated Fatty Acid Esters;

WITCONOL 2622:
PEG-4 Dilaurate
Liquid
Color, Gardner: 2
Pour Point, C: 0
HLB: 7.6
Flash Point, F: >200
Specific Gravity, 25/20C: 0.96
Oil-soluble coemulsifier and lubricant in self-emulsifiable textile and industrial oils, mold release agent, viscosity control additive.

WITCONOL 2640:
PEG-8 Stearate
Solid
Color, Gardner: 1
Pour Point, C: 32
HLB: 12.0
Flash Point, F: >200
Specific Gravity, 25/20C: 1.02
Emulsifier for fats and oils in industrial and textile lubricants and softeners; thickening agent and stabilizer for starch paper coatings.

WITCONOL 2642:
PEG-8 Distearate
Solid
Color, Gardner: 2
Pour Point, C: 36
HLB: 7.5
Flash Point, F: >200
Emulsifier and thickener in cosmetic and industrial formulations.

WITCONOL 2648:
PEG-8 Dioleate
Liquid
Color, Gardner: 4
Pour Point, C: 6
HLB: 8.8
Flash Point, F: >200
Specific Gravity, 25/20C: 0.97

WITCONOL 2665:
PEG-12 Dioleate
Liquid
Color, Gardner: 4
Pour Point, C: 19
HLB: 10.3
Flash Point, F: >200
Specific Gravity, 25/20C: 1.00
Emulsifiers and solubilizers in mineral oils, fats and solvents in agricultural and pesticide sprays, latex paints, metal working fluids and industrial lubricants.

WITCO CORP.: Surfactants: Nonionics: Ethoxylated Alcohols:

WITCONOL NP-90:
POE(9) Nonyl Phenol
Liquid
Color, Gardner: 1
Clear Point, C: 54
HLB: 13.0
Specific Gravity, 25/20C: 1.05

WITCONOL NP-110:
POE(11) Nonyl Phenol
Liquid
Color, Gardner: 2
Clear Point, C: 71
HLB: 13.5
Specific Gravity, 25/20C: 1.04

WITCONOL NP-120:
POE(12) Nonyl Phenol
Liquid
Color, Gardner: 2
Clear Point, C: 80
HLB: 14.1
Specific Gravity, 25/20C: 1.06
Water-soluble detergents, wetting agents and emulsifiers.

WITCONOL NP-407:
POE(40) Nonyl Phenol
Liquid
Color, Gardner: 1
Clear Point, C: 90
HLB: 17.8
Specific Gravity, 25/20C: 1.10

WITCONOL NP-507:
POE(50) Nonyl Phenol
Liquid
Color, Gardner: 1
Clear Point, C: 76
HLB: 18.2
Specific Gravity, 25/20C: 1.08
Water-soluble detergents and wetting agents especially effective for high-temperature applications.

WITCONOL 5951:
Ethoxylated Alcohol
Liquid
Color, Gardner: 1
Clear Point, C: <25
HLB: 11.6
Specific Gravity, 25/20C: 0.96
Low- to moderate-foam wetting agent and emulsifier for solvent-based heavy duty cleaners.

WITCO CORP.: Surfactants: Nonionics: Fatty Acid Esters:

WITCONOL 2301:
Methyl Oleate
Liquid
Color, Gardner: 5
Pour Point, C: -16
Flash Point, F: >200
Specific Gravity, 25/20C: 0.88
Component in mold release agents, defoamers and flotation agents, plasticizer for cellulosic plastics and needle lubricants, base for industrial lubricants.

WITCONOL 2326:
Butyl Stearate
Liquid
Color, Gardner: 1
Pour Point, C: 20
Flash Point, F: >200
Specific Gravity, 25/20C: 0.86
Industrial lubricant used in aluminum foil rolling and wire drawing, component in synthetic fiber spin finishing and fiber and yarn processing products.

WITCONOL EGMS:
Glycol Stearate
Beads
Color, Gardner: 2
Pour Point, C: 50
HLB: 2.2
Flash Point, F: >200

WITCONOL 2380:
Propylene Glycol Stearate
Beads
Color, Gardner: 2
Pour Point, C: 36
HLB: 1.8
Flash Point, F: >200
Pearlescing agents for liquid personal care products and household cleaners.

WITCONOL 2400:
Glyceryl Stearate
Beads
Color, Gardner: 1
Pour Point, C: 58
HLB: 3.9
Flash Point, F: >200
Emulsifier for cosmetic creams and lotions and industrial lubricants; lubricant softener for textiles.

WITCO CORP.: Surfactants: Nonionics: Fatty Acid Esters (Continued):

WITCONOL 2401:
Glyceryl Stearate
Beads
Color, Gardner: 2
Pour Point, C: 58
HLB: 3.9
Flash Point, F: >200

WITCONOL 2407:
Glyceryl Stearate, SE
Beads
Color, Gardner: 3
Pour Point, C: 58
HLB: 5.1
Flash Point, F: >200
Specific Gravity, 25/20C: 0.93
Emulsifiers for cosmetic creams and lotions and industrial lubricants; lubricant softeners for textiles.

WITCONOL 2421:
Glyceryl Oleate
Liquid
Color, Gardner: 5
Pour Point, C: 19
HLB: 3.4
Flash Point, F: >200
Specific Gravity, 25/20C: 0.95
Component in mold release agents and synthetic fiber spin finishes; insecticide vehicle, antiicing fuel additive and rust preventative for compounded oils.

Ethoxylated Fatty Acid Esters:

WITCONOL 2620:
PEG-4 Laurate
Liquid
Color, Gardner: 1
Pour Point, C: 9
HLB: 9.3
Flash Point, F: >200
Specific Gravity, 25/20C: 0.98
Emulsifier, coupling agent; defoamer in water-based coatings; viscosity depressant in vinyl plastisols; viscosity control additive in hair rinses; paper softener.

WITCO CORP.: Surfactants: Nonionics: Sorbitan Derivatives:

WITCONOL 2500:
Sorbitan Oleate
Liquid
Color, Gardner: 8
Pour Point, C: <0
HLB: 4.6
Flash Point, F: >200
Specific Gravity, 25/20C: 1.00

WITCONOL 2503:
Sorbitan Trioleate
Liquid
Color, Gardner: 7
Pour Point, C: <0
HLB: 2.1
Flash Point, F: >200
Specific Gravity, 25/20C: 0.95
Emulsifiers, coupling agents, lubricants and softeners for textile fibers and leather; emulsifiers for clear, emulsifiable concentrates of petroleum oils, waxes, fats and alkyl esters for cosmetic and household products.

WITCONOL 2720:
POE(20) Sorbitan Laurate (Polysorbate 20)
Liquid
Color, Gardner: 6
Pour Point, C: -10
HLB: 16.7
Flash Point, F: >200
Specific Gravity, 25/20C: 1.10
O/W emulsifier and solubilizer of petroleum oils, solvents, fats and essential oils; viscosity modifier for shampoos; textile dye carrier emulsifier; antistatic scrooping agent in primary spin finishes; fiber processing aid.

WITCONOL 2722:
POE(20) Sorbitan Oleate (Polysorbate 80)
Liquid
Color, Gardner: 6
Pour Point, C: -12
HLB: 15.0
Flash Point, F: >200
Specific Gravity, 25/20C: 1.08
Emulsifier for petroleum oils, fats, solvents and waxes in cosmetics, household products, industrial lubricants and textile dye carriers; solubilizer for essential oils, pigment dispersant in coatings; emulsifier for aliphatic alcohols in tobacco sucker control concentrates.

WITCO CORP.: Surfactants: Nonionics: Sorbitan Derivatives (Continued):

WITCONOL 6903:
POE(20) Sorbitan Trioleate
Liquid
Color, Gardner: 7
Pour Point, C: -15
HLB: 11.1
Flash Point, F: >200
Specific Gravity, 25/20C: 1.03
O/W emulsifier for petroleum oils, fats, waxes and alkyl esters; lubricant for metals, textiles and leather; emulsifier/lubricant in soluble oils for metal processing and finishing, textile processing and finishing oils, glass fibers and automotive additives.

Ethoxylated Alcohols:
WITCONOL NP-15:
POE(1.5) Nonyl Phenol
Liquid
Color, Gardner: 1
Clear Point, C: <25
HLB: 4.6
Specific Gravity, 25/20C: 1.00
Oil-soluble emulsifier used with water-soluble surfactants in defoamers.

WITCONOL NP-40:
POE(4) Nonyl Phenol
Liquid
Color, Gardner: 2
Clear Point, C: <25
HLB: 8.9
Specific Gravity, 25/20C: 1.02
Oil-soluble coemulsifier often used as a corrosion inhibitor in two-cycle engine oils.

WITCONOL NP-60:
POE(6) Nonyl Phenol
Liquid
Color, Gardner: 2
Clear Point, C: <25
HLB: 10.9
Specific Gravity, 25/20C: 1.03
WITCONOL NP-80:
POE(8) Nonyl Phenol
Liquid
Color, Gardner: 1
Clear Point, C: 52
HLB: 12.3
Specific Gravity, 25/20C: 1.05
Dispersants, wetting agents, co-emulsifiers in acid cleaners, solvent emulsions and detergents.

Suppliers' Addresses

Air Products and Chemicals
7201 Hamilton Blvd.
Allentown, PA 18195
(215)-481-6799/(800)-345-3148

Akzo Chemicals, Inc.
300 S. Riverside Plaza
Chicago, IL 60606
(312)-906-7500/(800)-257-8292

Albright & Wilson Americas
P.O. Box 26229
Richmond, VA 23260
(804)-550-4300/(800)-446-3700

Alcolac--Rhone Poulenc
3440 Fairfield Road
Baltimore, MD 21226
(301)-859-4900/(800)-ALCOLAC

American Cyanamid Co.
One Cyanamid Plaza
Wayne, NJ 07470
(201)-831-2000/(800)-438-5615

American Lecithin Co.
33 Turner Road
P.O. Box 1908
Danbury, CT 06813
(203)-790-2700

Burlington Chemical Co., Inc.
P.O. Box 111
Burlington, NC 27215
(919)-584-0111/(800)-334-8550

Central Soya
1300 Fort Wayne National Bank Bldg.
P.O. Box 1400
Fort Wayne, IN 46801
(219)-425-5230/(800)-348-0960

Climax Performance Materials
7666 West 63rd St.
Summit, IL 60501
(708)-458-8450/(800)-323-3231

Costec Inc.
P.O. Box 693
Palatine, IL 60078
(708)-359-5713

Daniel Products Co.
400 Claremont Ave.
Jersey City, NJ 07304
(201)-432-0800

Dexter Chemical Corp.
845 Edgewater Road
Bronx, NY 10474
(212)-542-7700

Dow Chemical Co.
Midland, MI 48674
(800)-258-CHEM

DuPont Co.
Wilmington, DE 19898
(800)-441-7515

Emulsion Systems Inc.
70 East Sunrise Highway
Valley Stream, NY 11581
(516)-825-3232/(800)-ESI-CRYL

Ethyl Corp.
Ethyl Tower
451 Florida Blvd.
Baton Rouge, LA 70801
(504)-388-7040/(800)-535-3030

Exxon Chemical Co.
Tomah Products
1012 Terra Drive
P.O. Box 388
Milton, WI 53563
(608)-868-6811/(800)-231-6633

GAF Chemicals Corp.
Rhone Poulenc
1361 Alps Road
Wayne, NJ 07470
(201)-628-3000

Goldschmidt Chemical Corp.
P.O. Box 1299
914 Randolph Rd.
Hopewell, VA 23860
(804)-541-8658/(800)-446-1809

W.R. Grace & Co. - Conn.
55 Hayden Ave.
Lexington, MA 02173
(617)-861-6600

Harcros Organics
5200 Speaker Rd.
Kansas City, KS 66106
(913)-621-7747

Henkel Corp.
Emery Group
4900 Este Ave.
Cincinnati, OH 45232
(513)-482-2100/(800)-543-7370

Inolex Chemical Co.
Jackson & Swanson Sts.
Philadelphia, PA 19148
(215)-271-0800/(800)-521-9891

Lonza Inc.
17-17 Route 208
Fair Lawn, NJ 07410
(201)-794-2400/(800)-777-1875

McIntyre Group Ltd.
1000 Governors Hwy
University Park, IL 60466
(708)-534-6200

Miranol Inc.
Rhone-Poulenc
South Brunswick, NJ 08810
(201)-329-3900

Mona Industries, Inc.
76 E. 24 St.
P.O. Box 425
Paterson, NJ 07544
(201)-345-8220

MTM Research Chemicals, Inc.
Huntingdon Plaza, Suite 205
3993 Huntingdon Pike
Huntingdon Valley, PA 19006
(215)-938-1750

Niacet Corp.
Niagara Falls Blvd. & 47th St.
Niagara Falls, NY 14304
(716)-285-1474/(800)-828-1207

Olin Corp.
120 Long Ridge Road
P.O. Box 1355
Stamford, CT 06904
(203)-356-2000/(800)-243-9171

M.S. Paisner, Inc.
53 Beaumont St.-P.O. Box 358
Canton, MA 02021
(617)-828-2040

Pilot Chemical Co.
11756 Burke St.
Santa Fe Springs, CA 90670
(213)-723-0036

PPG/Mazer Chemicals Dr.
3938 Porett Dr.
Gurnee, IL 60031
(312)-244-3410/(800)-CHEM-PPG

Rhone-Poulenc
CN 7500
Cranbury, NJ 08512
(609)-395-8300/(800)-252-6522

Ruetgers-Nease Chemical Co., Inc.
201 Struble Road
State College, PA 18801
(814)-238-2424

Sandoz Chemicals
4000 Monroe Road
Charlotte, NC 28205
(704)-372-0210/(800)-631-8077

Scher Chemicals, Inc.
P.O. Box 4317
Clifton, NJ 07012
(201)-471-1300

Shell Chemical Co.
P.O. Box 2463
Houston, TX 77252
(713)-241-6161

Sherex Chemical Co., Inc.
Box 646
Dublin, OH 43017
(614)-764-6500/(800)-366-6500

Stepan Co.
22 W. Frontage Road
Northfield, IL 60093
(708)-446-7500

Texaco Chemical Co.
P.O. Box 27707
Houston, TX 77227
(713)-961-3711

3M Industrial Chemical Products Division
3M Center
St. Paul, MN 55144
(612)-733-1110

Union Carbide Chemicals and Plastics Co., Inc.
39 Old Ridgebury Road
Danbury, CT 06817
(203)-794-5300

R.T. Vanderbilt Co., Inc.
30 Winfield St.-P.O. Box 5150
Norwalk, CT 06856
(203)-853-1400

Vista Chemical Co.
P.O. Box 19029
900 Threadneedle
Houston, TX 77224
(713)-558-3000/(800)-231-8216

Witco Corp.
520 Madison Ave.
New York, NY 10022
(212)-605-3645/(800)-634-4010

Trade Name Index

Trade Name	Supplier
ABEX	Alcolac—Rhone Poulenc
ACTIFLO	Central Soya
ACTRASOL	Climax Performance Materials
ADSEE	Witco Corp.
AEROSOL	American Cyanamid Co.
ALCOLEC	American Lecithin Co.
ALCONATE	Alcolac—Rhone Poulenc
ALFOL	Vista Chemical Co.
ALFONIC	Vista Chemical Co.
ALIPAL	GAF Chemicals Corp.
ALIPAL	Rhone-Poulenc
ALKAMIDE	GAF Chemicals Corp.
ALKAMINOX	GAF Chemicals Corp.
ALKAMOX	GAF Chemicals Corp.
ALKAMULS	GAF Chemicals Corp.
ALKAMULS	Rhone-Poulenc
ALKANOL	DuPont Co.
ALKAQUAT	GAF Chemicals Corp.
ALKASIL	GAF Chemicals Corp.
ALKASPERSE	GAF Chemicals Corp.
ALKASURF	GAF Chemicals Corp.
ALKASURF	Rhone-Poulenc
ALKATERIC	GAF Chemicals Corp.
ALKAWET	Lonza Inc.
ALKAZINE	GAF Chemicals Corp.
ALKODET	Rhone-Poulenc
ALPHA-STEP	Stepan Co.
ALROSPERSE	M.S. Paisner, Inc.
AMEENEX	Costec Inc.
AMIDEX	Costec Inc.
AMIDOX	Stepan Co.
AMMONYX	Stepan Co.
AMPHOTERGE	Lonza Inc.
ANIONYX	Stepan Co.
ANTARA	GAF Chemicals Corp.
ANTAROX	GAF Chemicals Corp.
ARISTOL	Pilot Chemical Co.
ARISTONATE	Pilot Chemical Co.
ARMAC	Akzo Chemicals, Inc.
ARMEEN	Akzo Chemicals, Inc.
ARMID	Akzo Chemicals, Inc.
AROMOX	Akzo Chemicals, Inc.
AROSURF	Sherex Chemical Co., Inc.

Trade Name	Supplier
ARQUAD	Akzo Chemicals, Inc.
AVANEL	PPG/Mazer Chemicals Dr.
AVITONE	DuPont Co.
BARLOX	Lonza Inc.
BIO-SOFT	Stepan Co.
BIO-TERGE	Stepan Co.
BLANCOL	GAF Chemicals Corp.
BLANCOL	Rhone-Poulenc
BLENDMAX	Central Soya
BURCO	Burlington Chemical Co., Inc.
BURCOFAC	Burlington Chemical Co., Inc.
BURCOQUAT	Burlington Chemical Co., Inc.
BURCOTERGE	Burlington Chemical Co., Inc.
CALAMIDE	Pilot Chemical Co.
CALFAX	Pilot Chemical Co.
CALFOAM	Pilot Chemical Co.
CALIMULSE	Pilot Chemical Co.
CALSOFT	Pilot Chemical Co.
CALSUDS	Pilot Chemical Co.
CARNAUBA	Sherex Chemical Co., Inc.
CARSAMIDE	Lonza Inc.
CARSOFOAM	Lonza Inc.
CARSONOL	Lonza Inc.
CARSONON	Lonza Inc.
CARSPRAY	Sherex Chemical Co., Inc.
CEDEPAL	Stepan Co.
CEDEPHOS	Stepan Co.
CENTRAL SOYA	Central Soya
CENTROCAP	Central Soya
CENTROL	Central Soya
CENTROLENE	Central Soya
CENTROLEX	Central Soya
CENTROMIX	Central Soya
CENTROPHASE	Central Soya
CENTROPHIL	Central Soya
CHEMBETAINE	Costec Inc.
CHEMCOGEN	Rhone-Poulenc
CHEMIDEX	Costec Inc.
CHEMOXIDE	Costec Inc.
CHEMPHOS	Costec Inc.
CHEMZOLINE	Costec Inc.

Trade Name	Supplier
CYCLOCHEM	Alcolac—Rhone Poulenc
CYCLOMIDE	Alcolac—Rhone Poulenc
CYCLOMOX	Alcolac—Rhone Poulenc
CYCLOPHOS	Alcolac—Rhone Poulenc
CYCLORYL	Alcolac—Rhone Poulenc
CYCLOSHEEN	Alcolac—Rhone Poulenc
CYCLOTERIC	Alcolac—Rhone Poulenc
CYCLOTON	Alcolac—Rhone Poulenc
DANTOCOL	Lonza Inc.
DANTOEST	Lonza Inc.
DANTOSPERSE	Lonza Inc.
DEHSCOFIX	Albright & Wilson Americas
DEHSCOTEX	Albright & Wilson Americas
DEHSCOXID	Albright & Wilson Americas
DIANOL	Rhone-Poulenc
DISPERSE-AYD	Daniel Products Co.
DOWFAX	Dow Chemical Co.
DREWPOL	Stepan Co.
DUOMEEN	Akzo Chemicals, Inc.
DUOQUAD	Akzo Chemicals, Inc.
DUPONT	DuPont Co.
ELTESOL	Albright & Wilson Americas
EMCOL	Witco Corp.
EMEREST	Henkel Corp.
EMERSTAT	Henkel Corp.
EMERY	Henkel Corp.
EMID	Henkel Corp.
EMPHOS	Witco Corp.
EMPICOL	Albright & Wilson Americas
EMPIGEN	Albright & Wilson Americas
EMPILAN	Albright & Wilson Americas
EMPIMIN	Albright & Wilson Americas
EMPIWAX	Albright & Wilson Americas
EMSORB	Henkel Corp.
EMULPHOGENE	GAF Chemicals Corp.
EMULPHOR	GAF Chemicals Corp.
EPAL	Ethyl Corp.
ESI-DET	Emulsion Systems Inc.
ESI-TERGE	Emulsion Systems Inc.
ETHODUOMEEN	Akzo Chemicals, Inc.
ETHOFAT	Akzo Chemicals, Inc.

Trade Name	Supplier
ETHOMEEN	Akzo Chemicals, Inc.
ETHOMID	Akzo Chemicals, Inc.
ETHOQUAD	Akzo Chemicals, Inc.
ETHOSPERSE	Lonza Inc.
FLUORAD	3M Industrial Chemical Products Div.
GAFAC	GAF Chemicals Corp.
GAFOAM	GAF Chemicals Corp.
GEROPON	Rhone–Poulenc
GLYCOMUL	Lonza Inc.
GLYCOSPERSE	Lonza Inc.
HAMPOSYL	W.R. Grace & Co.–Conn.
HAMPSHIRE	W.R. Grace & Co.–Conn.
IGEPAL	GAF Chemicals Corp.
IGEPAL	Rhone–Poulenc
IGEPON	GAF Chemicals Corp.
IGEPON	Rhone–Poulenc
INTERSTAB	Akzo Chemicals, Inc.
INTERWET	Akzo Chemicals, Inc.
KARA WET	Rhone–Poulenc
KATAPOL	GAF Chemicals Corp.
KESSCO	Stepan Co.
LATHANOL	Stepan Co.
LAUREX	Albright & Wilson Americas
LEXAINE	Inolex Chemical Co.
LEXQUAT	Inolex Chemical Co.
LONZAINE	Lonza Inc.
MACKADET	McIntyre Group Ltd.
MACKAM	McIntyre Group Ltd.
MACKAMIDE	McIntyre Group Ltd.
MACKAMINE	McIntyre Group Ltd.
MACKANATE	McIntyre Group Ltd.
MACKAZOLINE	McIntyre Group Ltd.
MACKESTER	McIntyre Group Ltd.
MACOL	PPG/Mazer Chemicals Dr.
MAFO	PPG/Mazer Chemicals Dr.
MAKON	Stepan Co.

Trade Name	Supplier
MAPEG	PPG/Mazer Chemicals Dr.
MAPHOS	PPG/Mazer Chemicals Dr.
MAPROSYL	Stepan Co.
MARCHON	Albright & Wilson Americas
MAZEEN	PPG/Mazer Chemicals Dr.
MAZON	PPG/Mazer Chemicals Dr.
MAZOX	PPG/Mazer Chemicals Dr.
MICRO-STEP	Stepan Co.
MIRAMINE	Miranol Inc.
MIRANOL	Miranol Inc.
MIRAPON	Miranol Inc.
MIRATAINE	Miranol Inc.
MIRAWET	Miranol Inc.
MONA	Mona Industries, Inc.
MONAFAX	Mona Industries, Inc.
MONAMATE	Mona Industries, Inc.
MONAQUAT	Mona Industries, Inc.
MONATERIC	Mona Industries, Inc.
MONATROPE	Mona Industries, Inc.
MONAWET	Mona Industries, Inc.
MONAZOLINE	Mona Industries, Inc.
MTM	MTM Research Chemicals
NACCONOL	Stepan Co.
NALKYLENE	Vista Chemical Co.
NANSA	Albright & Wilson Americas
NAXCHEM	Ruetgers-Nease Chemical Co., Inc.
NAXEL	Ruetgers-Nease Chemical Co., Inc.
NAXONATE	Ruetgers-Nease Chemical Co., Inc.
NAXONOL	Ruetgers-Nease Chemical Co., Inc.
NEKAL	GAF Chemicals Corp.
NEOBEE	Stepan Co.
NEUTRONYX	Stepan Co.
NEODOL	Shell Chemical Co.
NEOSOLVE	M.S. Paisner, Inc.
NIAPROOF	Niacet Corp.
NINATE	Stepan Co.
NINOL	Stepan Co.
NIPOL	Stepan Co.
NOVEL	Vista Chemical Co.
ONYXIDE	Stepan Co.

Trade Name	Supplier
PEGOL	GAF Chemicals Corp.
PEGOL	Rhone-Poulenc
PENTEX	Rhone-Poulenc
PETROWET	DuPont Co.
PHOSPHOTERIC	Mona Industries, Inc.
PILOT	Pilot Chemical Co.
POLYSTEP	Stepan Co.
POLY-TERGENT	Olin Corp.
PROGASOL	Rhone-Poulenc
PROPOMEEN	Akzo Chemicals, Inc.
PROPOQUAD	Akzo Chemicals, Inc.
QUATREX	Costec Inc.
REWOTERIC	Sherex Chemical Co., Inc.
RHODAFAC	Rhone-Poulenc
RHODAMEEN	Rhone-Poulenc
RHODASURF	Rhone-Poulenc
SANDOPAN	Sandoz Chemicals
SANDOXYLATE	Sandoz Chemicals
SANDOZ	Sandoz Chemicals
SCHERCAMOX	Scher Chemicals, Inc.
SCHERCODINE	Scher Chemicals, Inc.
SCHERCOMID	Scher Chemicals, Inc.
SCHERCOPOL	Scher Chemicals, Inc.
SCHERCOQUAT	Scher Chemicals, Inc.
SCHERCOTAINE	Scher Chemicals, Inc.
SCHERCOTERIC	Scher Chemicals, Inc.
SCHERCOZOLINE	Scher Chemicals, Inc.
SIPEX	Alcolac—Rhone Poulenc
SIPON	Alcolac—Rhone Poulenc
SIPONATE	Alcolac—Rhone Poulenc
SIPONATE	Rhone-Poulenc
SIPONIC	Alcolac—Rhone Poulenc
S-MAZ	PPG/Mazer Chemicals Dr.
SOPROPHOR	Rhone-Poulenc
STEOL	Stepan Co.
STEPAN	Stepan Co.
STEPANATE	Stepan Co.
STEPANFLOTE	Stepan Co.
STEPANFORM	Stepan Co.
STEPAN-MILD	Stepan Co.

Trade Name	Supplier
STEPANOL	Stepan Co.
STEPANON	Stepan Co.
STEPANTAN	Stepan Co.
STEPFAC	Stepan Co.
STEP-FLOW	Stepan Co.
STEPOSOL	Stepan Co.
STEPSPERSE	Stepan Co.
STEPWET	Stepan Co.
STRODEX	Dexter Chemical Corp.
SULFOCHEM	Costec Inc.
SUPRAGIL	Rhone-Poulenc
SUPRA WET	Rhone-Poulenc
SURFADONE	GAF Chemicals Corp.
SURFONIC	Texaco Chemical Co.
SURFYNOL	Air Products and Chemicals
T-DET	Harcros Organics
TEGOPREN	Goldschmidt Chemical Corp.
TERGITOL	Union Carbide Chemicals and Plastics Co., Inc.
TEXSTIM	Exxon Chemical Co.
TOMAH	Exxon Chemical Co.
TOXIMUL	Stepan Co.
TRIAMEEN	Akzo Chemicals, Inc.
TRITON	Union Carbide Chemicals and Plastics Co., Inc.
TRYCOL	Henkel Corp.
TRYDET	Henkel Corp.
TRYFAC	Henkel Corp.
TRYLON	Henkel Corp.
TRYLOX	Henkel Corp.
TRYMEEN	Henkel Corp.
UNAMIDE	Lonza Inc.
VANSEAL	R.T. Vanderbilt Co., Inc.
VARAMIDE	Sherex Chemical Co., Inc.
VARINE	Sherex Chemical Co., Inc.
VARIQUAT	Sherex Chemical Co., Inc.
VARONIC	Sherex Chemical Co., Inc.
VAROX	Sherex Chemical Co., Inc.
VARSULF	Sherex Chemical Co., Inc.

Trade Name	Supplier
WAYFOS	Olin Corp.
WAYHIB	Olin Corp.
WECOBEE	Stepan Co.
WITCAMIDE	Witco Corp.
WITCAMINE	Witco Corp.
WITCOLATE	Witco Corp.
WITCONOL	Witco Corp.
ZONYL	DuPont Co.