

# V

**VLF350**      **CAS: 53643-48-4**      **HR: D**  
**VINDESINE**

mf:  $C_{43}H_{53}N_5O_7$       mw: 754.03

**SYNS:** 3-(AMINOCARBONYL)-O<sup>4</sup>-DEACETYL-3-DE(METHOXYCARBONYL)VINCALEUKOBLASTINE □ DESACETYL-VINBLASTINE AMIDE □ VINCALEUKOBLASTINE, 3-(AMINOCARBONYL)-O<sup>4</sup>-DEACETYL-3-DE(METHOXYCARBONYL)-

**TOXICITY DATA with REFERENCE:**

mnt-ipr-ham 1100 µg/kg      MUREAV 174,11,1986

ipr-mus LD50:4 mg/kg      BAXXDU #2086884

ivn-mus LD50:13800 µg/kg      JMCMAR 28,1079,1985

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**UWJ200**      **CAS: 663-97-8**      **HR: 3**  
**17-α-UZARIGENIN**

mf:  $C_{23}H_{34}O_4$       mw: 374.57

**SYNS:** ALLO-UZARIGENIN □ ALLOUZARIGENIN □ 5-α,17-α-CARD-20(22)-ENOLIDE, 3-β,14-DIHYDROXY- □ CARD-20(22)-ENOLIDE, 3,14-DIHYDROXY-, (3-β,5-α,17-α)- □ (3-β,5-α,17-α)-3,14-DIHYDROXYCARD-20(22)-ENOLIDE

**TOXICITY DATA with REFERENCE:**

ivn-cat LD :>3159 µg/kg      JMCMAR 13,1029,1970

**SAFETY PROFILE:** A poison by intravenous route. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VAC000**      **CAS: 12035-50-6**      **HR: 3**  
**VAESITE**

mf: NiS<sub>2</sub>      mw: 122.83

**PROP:** Metallic luster. Black color.

**CONSENSUS REPORTS:** IARC Cancer Review: Animal Sufficient Evidence IMEMDT 49,257,90.

**SAFETY PROFILE:** Confirmed carcinogen. When heated to decomposition it emits toxic vapors of SO<sub>x</sub> and Ni.

**VAD000**      **CAS: 54965-21-8**      **HR: 2**  
**VALBAZEN**

mf:  $C_{12}H_{15}N_3O_2S$       mw: 265.36

**PROP:** Colorless crystals. Mp: 208–210°.

**SYNS:** ALBENDAZOLE (USDA) □ METHYL 5-(PROPYLTHIO)-2-BENZIMIDAZOLECARBAMATE □ ((PROPYLTHIO)-5-1H-BENZIMIDAZOLYL-2) CARBAMATE de METHYLE (FRENCH) □ (5-(PROPYLTHIO)-1H-BENZIMIDAZOL-2-YL)CARBAMIC ACID METHYL ESTER □ 5-(PROPYLTHIO)-2-CARBOMETHOXY-AMINOBENZIMIDAZOLE □ SKF 62979 □ ZENTAL

**TOXICITY DATA with REFERENCE:**

orl-dom TDLo:20 mg/kg (17D preg):REP      AMSHAR 28,226,80

orl-rat TDLo:85 mg/kg (8-15D preg):TER      ARCVBP 12,159,81

orl-rat LD50:2400 mg/kg      APFRAD 40,55,82

**SAFETY PROFILE:** Moderately toxic by ingestion. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of SO<sub>x</sub> and NO<sub>x</sub>. See also CARBAMATES and ESTERS.

**VAD100**      **CAS: 1317-98-2**      **HR: 3**  
**VALENTINITE**

mf: O<sub>3</sub>Sb<sub>2</sub>      mw: 291.50

**PROP:** Highly gem-like pearly luster, often fibrous oxide mineral. Colorless, white, yellow, reddish or gray. Translucent to opaque in massive specimens. D: ~5.7.

**CONSENSUS REPORTS:** IARC Cancer Review: Group 2B IMEMDT 47,291,89; Animal Sufficient Evidence IMEMDT 47,291,89; Human Inadequate Evidence IMEMDT 47,291,89.

**SAFETY PROFILE:** Confirmed carcinogen. When heated to decomposition it emits toxic vapors of Sb.

**VAD200**      **CAS: 18296-44-1**      **HR: 3**  
**VALEPOTRIATE**

mf:  $C_{22}H_{30}O_8$       mw: 422.52

**SYNS:** BALDRISEDON □ BUTANOIC ACID, 3-METHYL-, 4-((ACETYLOXY)METHYL)-6,7A-DIHYDROSPIRO(CYCLOPENTAN-5(1H),2'-OXIRAN E)-1,6-DIYL ESTER, (1S-(1-α,6-α,7-β,7A-α))- □ HALAZUCHROME B □ VALTRATE □ VALTRATS □ VALTRATUM

**TOXICITY DATA with REFERENCE:**

uns-esc 50 nmol/L      MUREAV 203,81,1988

ipr-mus LD50:60 mg/kg      PHUZBI 8,78,1979

ivn-gpg TDLo:20 mg/kg      TCPHP\*,57,2000

**SAFETY PROFILE:** A poison by intraperitoneal and intravenous routes. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating vapors.

**VAG000**      **CAS: 110-62-3**      **HR: 3**  
**n-VALERALDEHYDE**

**DOT:** UN 2058

mf:  $C_5H_{10}O$       mw: 86.15

**PROP:** Liquid. Flash p: 53.6°F, fp: -92°, bp: 102–103°, d: 0.8095 @ 20°/4°. Very sltly sol in water; misc with org solvs.

**SYNS:** AMYL ALDEHYDE □ BUTYL FORMAL □ PENTANAL □ n-PENTANAL □ VALERAL □ VALERIANIC ALDEHYDE □ VALERIC ACID ALDEHYDE □ VALERIC ALDEHYDE □ VALERYLALDEHYDE

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg/24H MOD      FCTXAV 17(Suppl),695,79

eye-rbt 100 mg/24H SEV      FCTXAV 17,919,79

skn-gpg 100% SEV      FCTXAV 17,919,79

orl-rat LD50:4581 mg/kg      AIHAAP 30,470,69

## 3654 VAG100 VALERAMIDE, N-HEXYL-

orl-mus LD50:6400 mg/kg FCTXAV 17,919,79  
ihl-rat LCLo:4000 ppm/4H AIHAAP 30,47,69  
skn-rbt LD50:4857 mg/kg AIHAAP 30,47,69  
skn-gpg LD50:20 g/kg FCTXAV 17,919,79

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**OSHA PEL:** TWA 50 ppm

**ACGIH TLV:** TWA 50 ppm

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Moderately toxic by ingestion.

Mildly toxic by inhalation and skin contact. A severe eye and skin irritant. A very dangerous fire hazard when exposed to heat or flame. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALDEHYDES.

**ANALYTICAL METHOD:** For occupational chemical analysis use NIOSH: Valeraldehyde 2536.

## VAG100 CAS: 10264-25-2 HR: 1 VALERAMIDE, N-HEXYL-

mf:  $C_{11}H_{23}NO$  mw: 185.35

**SYNS:** AI3-35716-AGB □ N-HEXYLVALERAMIDE □ PENTANAMIDE, N-HEXYL-

**TOXICITY DATA with REFERENCE:**

orl-rat LD  $>4311$  mg/kg AEHA\*\* 51-0804-77

**SAFETY PROFILE:** Low toxicity by ingestion. When heated to decomposition it emits toxic vapors of  $NO_x$ .

## VAG200 CAS: 55528-90-0 HR: 3 VALERANONE

mf:  $C_{15}H_{26}O$  mw: 222.37

**SYNS:** 1(2H)-NAPHTHALENONE, OCTAHYDRO-4A,8A-DIMETHYL-7-(1-METHYLETHYL)-, (4A- $\alpha$ ,7- $\beta$ ,8A- $\alpha$ )- □ (4A- $\alpha$ ,7- $\beta$ ,8A- $\alpha$ )-OCTAHYDRO-4A,8A-DIMETHYL-7-(1-METHYLETHYL)-1(2H)-NAPHTHALENONE

**TOXICITY DATA with REFERENCE:**

ipr-mus TDL<sub>0</sub>:50 mg/kg TCPHP\*,56,2000

ivn-gpg TDL<sub>0</sub>:20 mg/kg TCPHP\*,57,2000

**SAFETY PROFILE:** A poison by intraperitoneal and intravenous route. When heated to decomposition it emits acrid smoke and irritating vapors.

## VAG250 CAS: 5090-54-0 HR: 3 (-)-VALERANONE

mf:  $C_{15}H_{26}O$  mw: 222.41

**SYNS:** JATAMANSONE □ (-)-JATAMANSONE □ 1(2H)-NAPHTHALENONE, OCTAHYDRO-7- $\beta$ -ISOPROPYL-4A- $\alpha$ ,8A- $\alpha$ -DIMETHYL-, (-)-

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:350 mg/kg IJMRAQ 46,782,1958

ipr-unr LD50: 580 mg/kg 29ZRAX-,51,1965

**SAFETY PROFILE:** A poison by intraperitoneal route. When heated to decomposition it emits acrid smoke and irritating vapors.

## VAG300 CAS: 4176-16-3 HR: 3 VALERENAL

mf:  $C_{15}H_{22}O$  mw: 218.34

**SYN:** 2-PROPENAL, 3-(2,4,5,6,7,7A-HEXAHYDRO-3,7-DIMETHYL-1H-INDEN-4-YL)-2-METHYL-, (4S-(4- $\alpha$ (E), 7- $\beta$ ,7A- $\alpha$ ))-

**TOXICITY DATA with REFERENCE:**

ipr-mus TDL<sub>0</sub>:50 mg/kg TCPHP\*,56,2000

**SAFETY PROFILE:** A poison by intraperitoneal route. When heated to decomposition it emits acrid smoke and irritating vapors.

## VAG400 CAS: 3569-10-6 HR: 3 VALERENIC ACID

mf:  $C_{15}H_{22}O_2$  mw: 234.34

**SYN:** 2-PROPENOIC ACID, 3-(2,4,5,6,7,7A-HEXAHYDRO-3,7-DIMETHYL-1H-INDEN-4-YL)-2-METHYL-, (4S-(4- $\alpha$ (E), 7- $\beta$ ,7A- $\alpha$ ))-

**TOXICITY DATA with REFERENCE:**

ipr-mus TDL<sub>0</sub>:50 mg/kg TCPHP\*,56,2000

ipr-mus TDL<sub>0</sub>:100 mg/kg TCPHP\*,57,2000

ipr-mus TDL<sub>0</sub>:150 mg/kg TCPHP\*,57,2000

**SAFETY PROFILE:** A poison by intraperitoneal route. When heated to decomposition it emits acrid smoke and irritating vapors.

## VAQ000 CAS: 109-52-4 HR: 2 VALERIC ACID

mf:  $C_5H_{10}O_2$  mw: 102.15

**PROP:** Colorless, mobile liquid with unpleasant, penetrating, rancid odor. D: 0.940 @ 20°/4°, refr index: 1.405–1.14 @ 25°, mp: –34.5°, fp: –34.5°, bp: 186.4°, flash p: 203°F. Sol in EtOH and Et<sub>2</sub>O; spar sol in H<sub>2</sub>O.

**SYNS:** BUTANECARBOXYLIC ACID □ 1-BUTANECARBOXYLIC ACID □ FEMA No. 3101 □ PENTANOIC ACID □ n-PENTANOIC ACID □ PROPYLACETIC ACID □ VALERIANIC ACID □ n-VALERIC ACID

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:600 mg/kg 85GMAT -,119,82

ihl-mus LC50:4100 mg/m<sup>3</sup>/2H 85GMAT -,119,82

ivn-mus LD50:1290 mg/kg APTOA6 18,141,61

scu-mus LD50:3590 mg/kg JPPMAB 21,85,69

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion, intravenous, and subcutaneous routes. Mildly toxic by inhalation. A corrosive irritant to skin, eyes, and mucous membranes. Combustible liquid. When heated to decomposition it emits acrid smoke and irritating fumes. Used in perfumes.

## VAQ100 CAS: 624-24-8 HR: 1 VALERIC ACID, METHYL ESTER

mf:  $C_6H_{12}O_2$  mw: 116.18

**PROP:** Fruity odorant.

**SYNS:** METHYL PENTANOATE □ METHYL VALERATE □ METHYL n-VALERATE □ METHYL VALERIANATE □ PENTANOIC ACID, METHYL ESTER (9CI)

**TOXICITY DATA with REFERENCE:**

ihl-mus LC50:6600 mg/m<sup>3</sup>/2H 85GMAT -,88,82

ihl-uns LC50:6600 mg/m<sup>3</sup>

GISAAA 51(5),61,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Slightly toxic by inhalation. When heated to decomposition it emits acrid smoke and irritating vapors.

**VAQ200 CAS: 30129-29-4 HR: 2**  
**VALERIC ACID, 2-PROPYL-, THYMYL ESTER**

mf: C<sub>18</sub>H<sub>28</sub>O<sub>2</sub> mw: 276.46

**SYNS:** SAS 560 □ THYMYL 2-PROPYLVALERATE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:>2 g/kg CHTPBA 3,433,68

ipr-rat LD50:>2 g/kg CHTPBA 3,433,68

orl-mus LD50:>2500 mg/kg CHTPBA 3,433,68

ipr-mus LD50:>2 g/kg CHTPBA 3,433,68

**SAFETY PROFILE:** Moderately toxic by ingestion and intraperitoneal routes. When heated to decomposition it emits acrid smoke and irritating vapors.

**VAV000 CAS: 108-29-2 HR: 2**  
**4-VALEROLACTONE**

mf: C<sub>5</sub>H<sub>8</sub>O<sub>2</sub> mw: 100.13

**PROP:** Colorless, mobile liquid; sweet, herbaceous odor.

Mp: -31°, bp: 205-206.5°, flash p: 205°F (COC), d:

1.047-1.054, refr index: 1.43, vap d: 3.45. Misc in alc, fixed oils, water.

**SYNS:** FEMA No. 3103 □ 4-HYDROXYPENTANOIC ACID

LACTONE □ 4-HYDROXYVALERIC ACID LACTONE □ γ-

METHYL-γ-BUTYROLACTONE □ 4-METHYL-γ-

BUTYROLACTONE □ γ-PENTALACTONE □ 4-PENTANOLIDE □

γ-VALEROLACTONE (FCC)

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg/24H MLD FCTOD7 20(Suppl),847,82

sln-smc 24400 ppm MUREAV 201,431,88

orl-rat LD50:8800 mg/kg JIHTAB 27,263,45

orl-rbt LD50:2480 mg/kg JIHTAB 27,263,45

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion. A skin irritant. Mutation data reported. Combustible liquid when exposed to heat or flame; can react with oxidizing materials. To fight fire, use water, foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes.

**VAV300 CAS: 110-59-8 HR: 3**  
**VALERONITRILE**

mf: C<sub>5</sub>H<sub>9</sub>N mw: 83.15

**PROP:** Colorless liquid. D: 0.8008 @ 20°/4°, mp: -96°, bp: 139-141°. Sol in water. Flash pt: 40° C.

**SYNS:** 1-CYANOBUTANE □ PENTANENITRILE (9CI) □ n-VALERONITRILE

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:191 mg/kg ARTODN 55,47,84

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by ingestion. A flammable liquid. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VBA000 CAS: 638-29-9 HR: 2**  
**VALERYL CHLORIDE**

**DOT:** UN 2502

mf: C<sub>5</sub>H<sub>9</sub>ClO mw: 120.59

**PROP:** Fp: 32°, bp: 125-127°, d: 1.016.

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**DOT CLASSIFICATION:** 8; Label: Corrosive

**SAFETY PROFILE:** A corrosive irritant to skin, eyes, and mucous membranes. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>.

**VBA100 CAS: 1701-73-1 HR: 3**  
**4-VALERYLPYRIDINE**

mf: C<sub>10</sub>H<sub>13</sub>NO mw: 163.24

**SYNS:** BUTYL 4-PYRIDYL KETONE □ KETONE, BUTYL 4-

PYRIDYL □ 1-PENTANONE, 1-(4-PYRIDYL)- □ PYRIDINE, 4-

VALERYL- □ 1-(4-PYRIDYL)-1-PENTANONE

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:260 mg/kg JMCAR 14,551,71

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** A poison by intraperitoneal route. A flammable liquid. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VBK000 CAS: 90-22-2 HR: 3**  
**VALETHAMATE BROMIDE**

mf: C<sub>19</sub>H<sub>32</sub>NO<sub>2</sub>•Br mw: 386.43

**PROP:** Crystals from ethanol and ether or acetone. Mp: 118-120°. Freely sol in water and alc; practically insol in ether.

**SYNS:** 2-DIETHYLAMINOETHYL-3-METHYL-2-PHENYL-VALERATE METHYLBROMIDE □ 2-DIETHYLAMINOETHYL-2-PHENYL-3-METHYLVALERATE METHYL BROMIDE □ DIETHYL(2-HYDROXYETHYL)METHYLAMMONIUM-3-METHYL-2-PHENYLVALERATE BROMIDE □ EDIPOSIN □ EPIDOSIN □ EPIDOZIN □ 3-METHYL-2-PHENYLVALERIC ACID-2-DIETHYLAMINOETHYL ESTER METHYL BROMIDE □ 3-METHYL-2-PHENYLVALERIC ACID DIETHYL(2-HYDROXYETHYL)-METHYLAMMONIUM BROMIDE ESTER □ 2-((3-METHYL-2-PHENYLVALERYL)OXY)-N,N-DIETHYL-N-METHYLETHANAMINIUM BROMIDE □ MUREL □ PHENYLMETHYL-VALERIANSAEURE-β-DIAETHYLAMINOAEHTYLESTER-BROMMETHYLAT (GERMAN) □ RESITAN □ VALETHAMATE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:1260 mg/kg NIIRDN 6,352,82

scu-rat LD50:575 mg/kg NIIRDN 6,352,82

ivn-rat LD50:4200 µg/kg NIIRDN 6,352,82

orl-mus LD50:330 mg/kg ARZNAD 5,599,55

scu-mus LD50:105 mg/kg OYYAA2 8,245,74

ivn-mus LD50:4200 µg/kg NIIRDN 6,352,82

ivn-rbt LD50:9500 µg/kg 29ZVAB -,123,69

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intravenous routes. See also ESTERS and BROMIDES. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub>, NH<sub>3</sub>, and Br<sup>-</sup>.

**VBP000 CAS: 72-18-4 HR: 1**  
**VALINE**

mf: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub> mw: 117.17

**PROP:** White, crystalline solid; characteristic taste. Mp (dl): 298° (decomp), mp (l): 315°, d (l): 1.230. Sol in water; very sltly sol in alc; insol in ether. An essential amino acid.

**SYNS:** L-(+)- $\alpha$ -AMINOISOVALERIC ACID  $\square$  L-VALINE (FCC)

**TOXICITY DATA with REFERENCE:**

oms-omi 10 mmol/L CBINA8 16,201,77

ipr-rat LD50:5390 mg/kg ABBIA4 58,253,55

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VBU000 CAS: 640-68-6 HR: 1**  
**d-VALINE**

mf: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub> mw: 117.17

**PROP:** Hexagonal leaf or prisms. Sol in water.

**TOXICITY DATA with REFERENCE:**

ipr-rat LD50:6093 mg/kg ABBIA4 64,319,56

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VBU100 CAS: 69409-94-5 HR: 3**  
**dl-VALINE, N-(2-CHLORO-4-(TRIFLUORO-**  
**METHYL)PHENYL)-, CYANO(3-PHENOXY-**  
**PHENYL)METHYL ESTER**

mf: C<sub>26</sub>H<sub>22</sub>ClF<sub>3</sub>N<sub>2</sub>O<sub>3</sub> mw: 502.95

**PROP:** Viscous, yellow oil. D: 1.29 g/cm<sup>3</sup>, bp: >450°. Insol in water.

**SYNS:** N-(2-CHLORO-4-(TRIFLUOROMETHYL)PHENYL)-dl-VALINE CYANO(3-PHENOXYPHENYL)METHYL ESTER  $\square$  FLUVALINATE  $\square$  KARTAN  $\square$  MAVRIK  $\square$  MAVRIK AQUAFLOW  $\square$  MAVRIK HR  $\square$  SPUR  $\square$  ZR 3210

**TOXICITY DATA with REFERENCE:**

eye-rbt 100 mg MLD NNGADV 15,121,90

orl-rat LD50:261 mg/kg FMCHA2 -,C142,91

ihl-rat LC50:439 mg/m<sup>3</sup>/4H NNGADV 15,121,90

skn-rat LD50:&gt;20 g/kg PEMNDP 9,428,91

ipr-rat LD50:105 mg/kg IJBEA6 29,178,91

scu-rat LD50:&gt;2 g/kg NNGADV 15,121,90

orl-mus LD50:2042 mg/kg NNGADV 15,121,90

ipr-mus LD50:105 mg/kg INJPD2 24,154,92

skn-rbt LD50:&gt;2 g/kg PEMNDP 9,428,91

orl-qal LD50:&gt;2510 mg/kg PEMNDP 9,428,91

**CONSENSUS REPORTS:** EPA FIFRA 1988 pesticide subject to registration or re-registration.

**SAFETY PROFILE:** A poison by ingestion and intraperitoneal route. Moderately toxic by inhalation and subcutaneous routes. Low toxicity by skin contact. Experimental reproductive effects. An eye irritant. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>, F<sup>-</sup>, and Cl<sup>-</sup>.

**VBZ000 CAS: 2001-95-8 HR: 3**  
**VALINOMYCIN**

mf: C<sub>54</sub>H<sub>90</sub>N<sub>6</sub>O<sub>18</sub> mw: 1111.50

**PROP:** Shiny, rectangular platelets or crystals from diisobutyl ether. Mp: 187°. Almost insol in water; very sol in pet ether, ether, benzene, chloroform, glacial acetic acid, butyl acetate, acetone.

**SYNS:** ANTIBIOTIC N-329 B  $\square$  NSC 122023

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:4 mg/kg DCTODJ 8,451,85

ipr-rat LD50:800 µg/kg DCTODJ 8,451,85

orl-mus LD50:2500 µg/kg 85ERAY 1,325,78

ipr-mus LD50:390 µg/kg NCISP\* JAN86

scu-mus LD50:4140 µg/kg 85ERAY 1,325,78

skn-rbt LD50:5 mg/kg DCTODJ 8,451,85

**CONSENSUS REPORTS:** EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by ingestion, skin contact, intraperitoneal, and subcutaneous routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VCA000 CAS: 2152-44-5 HR: 3**  
**VALISONE**

mf: C<sub>27</sub>H<sub>37</sub>FO<sub>6</sub> mw: 476.64

**PROP:** Needles from Me<sub>2</sub>CO/pet ether. Mp: 183–184°.

**SYNS:** BETAMETHASONE VALERATE  $\square$  BETAMETHASONE 17-VALERATE  $\square$  BETNOVATE  $\square$  BETNOVATEAT  $\square$  CELESTODERM  $\square$  9-FLUORO-11- $\beta$ ,17,21-TRIHYDROXY-16- $\beta$ -METHYLPREGNA-1,4-DIENE-3,20,DIONE-17-VALERATE  $\square$   $\beta$ -METHASONE-17-VALERATE

**TOXICITY DATA with REFERENCE:**

scu-rat LDLo:2000 mg/kg ARZNAD 27,2102,77

orl-mus LD50:4067 mg/kg SKIZAB 29,153,73

ipr-mus LD50:632 SKIZAB 29,153,73

scu-mus LD50:496 mg/kg SKIZAB 29,153,73

scu-rbt LD50:61,200 µg/kg OYYAA2 28,687,84

**SAFETY PROFILE:** Poison by subcutaneous route. Moderately toxic by intraperitoneal route. Mildly toxic by ingestion. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of F<sup>-</sup>.

**VCA100 CAS: 4420-67-1 HR: 3**  
**VALLAROSOLANOSIDE**

mf: C<sub>32</sub>H<sub>48</sub>O<sub>10</sub> mw: 592.80

**SYN:** CARD-20(22)-ENOLIDE, 16-(ACETYLOXY)-3-((6-DEOXY-3-O-METHYL- $\alpha$ -1-ALTROPYRANOSYL)OXY)-14-HYDROXY-, (3- $\beta$ ,5- $\beta$ ,16- $\beta$ )-

**TOXICITY DATA with REFERENCE:**

ivn-cat LDLo:329 µg/kg JMCMA 13,1029,1970

**SAFETY PROFILE:** A poison by intravenous route. When heated to decomposition it emits acrid smoke and irritating vapors.

**VCK000 HR: 3**  
**VALONEA TANNIN**

**PROP:** Obtained from Turkish oak tree acorn cups and beards.

**SYNS:** QUERCUS AEGILOPS L. TANNIN  $\square$  TANNIN from VALONEA

**TOXICITY DATA with REFERENCE:**

scu-rat TDLo:750 mg/kg/2W-I:CAR BJCAAI 14,147,60

ipr-mus LD50:110 mg/kg JPPMAB 9,98,57  
 scu-mus LD50:170 mg/kg JPPMAB 9,98,57  
 ivn-mus LD50:50 mg/kg JPPMAB 9,98,57  
 ims-mus LD50:280 mg/kg JPPMAB 9,98,57

**SAFETY PROFILE:** Poison by intraperitoneal, intravenous, subcutaneous, and intramuscular routes. Questionable carcinogen with experimental carcinogenic data. See also TANNIC ACID.

**VCK100 CAS: 4093-35-0 HR: 3**

#### VALOPRIDE

mf:  $C_{14}H_{22}BrN_3O_2$  mw: 344.30

**PROP:** A solid. Mp: 149°.

**SYNS:** 4-AMINO-5-BROMO-N-(2-(DIETHYLAMINO)ETHYL)-o-ANISAMIDE □ ARTOMEY □ BENZAMIDE, 4-AMINO-5-BROMO-N-(2-(DIETHYLAMINO)ETHYL)-2-METHOXY-(9CI) □ BROMOPRIDA □ BROMOPRIDE □ N-(DIETHYLAMINO-ETHYL)-2-METHOXY-4-AMINO-5-BROMOBENZAMIDE □ VAL 13081

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:545 mg/kg YAKUD5 21,516,79  
 ipr-rat LD50:125 mg/kg YAKUD5 21,516,79  
 orl-mus LD50:310 mg/kg YAKUD5 21,516,79  
 ipr-mus LD50:105 mg/kg YAKUD5 21,516,79

**SAFETY PROFILE:** Poison by ingestion and intraperitoneal routes. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of  $NO_x$  and  $Br^-$ .

**VCK200 CAS: 33433-82-8 HR: 3**

#### VALPROIC ACID CALCIUM SALT

mf:  $C_{16}H_{30}O_4 \cdot Ca$  mw: 326.54

**SYNS:** CALCIUM DIPROPYLACETATE □ CALCIUM  $\alpha,\alpha$ -DIPROPYLACETATE □ CALCIUM VALPROATE □ DIPROPYLACETATE DE CALCIUM □ DIPROPYLACETIC ACID CALCIUM SALT □ PENTANOIC ACID, 2-PROPYL-, CALCIUM SALT (9CI) □ 2-PROPYLPENTANOIC ACID CALCIUM SALT □ 2-PROPYLVALERIC ACID CALCIUM SALT (2:1) □ VALERIC ACID, 2-PROPYL-, CALCIUM SALT (2:1) □ VALONTIN □ VALPROIC ACID HEMI-CALCIUM SALT

#### TOXICITY DATA with REFERENCE:

orl-rat TDLo:365 g/kg/2Y-C:CAR TXCYAC 71,35,92  
 orl-rat LD50:2986 mg/kg TXCYAC 63,137,90  
 ipr-rat LD50:375 mg/kg JNPHAG 2,313,71  
 orl-mus LD50:1519 mg/kg TXCYAC 63,137,90  
 ipr-mus LD50:320 mg/kg JNPHAG 2,313,71

**SAFETY PROFILE:** A poison by intraperitoneal route. Moderately toxic by ingestion. Questionable carcinogen with experimental carcinogenic data. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating vapors.

**VCP000 CAS: 7440-62-2 HR: 3**

#### VANADIUM

af: V aw: 50.94

**PROP:** A bright, white, soft, ductile metal; sltly radioactive. Corrosion resistant (oxide film). Resistant to fused alkalis, attacked by hot concentrated mineral acids. Bp: 3380°, d: 6.11 @ 18.7°, mp: 1917°. Insol in water.

#### TOXICITY DATA with REFERENCE:

ims-rat TDLo:340 mg/kg/43W-I:ETA NCIUS\* PH 43-64-886,SEPT;71

scu-rbt LD50:59 mg/kg FATOAO 28,83,65

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**OSHA PEL:** Respirable Dust and Fume: TWA 0.05  $mg(V_2O_5)/m^3$

**NIOSH REL:** TWA 1.0  $mg(V)/m^3$

**SAFETY PROFILE:** An inhalation hazard. Poison by subcutaneous route. Questionable carcinogen with experimental tumorigenic data. Flammable in dust form from heat, flame, or sparks. Violent reaction with  $BrF_3$ ,  $Cl_2$ , lithium, nitril fluoride, oxidants. When heated to decomposition it emits toxic fumes of  $VO_x$ . See also VANADIUM COMPOUNDS.

**ANALYTICAL METHOD:** For occupational chemical analysis use NIOSH: Elements (ICP), 7300.

**VCU000 HR: 3**

#### VANADIUM AZIDE TETRACHLORIDE

mf:  $Cl_4N_3V$  mw: 234.76

**CONSENSUS REPORTS:** Community Right-To-Know List.

**SAFETY PROFILE:** Explosive. When heated to decomposition it emits very toxic fumes of  $VO_x$ ,  $Cl^-$ , and  $NO_x$ . See also VANADIUM COMPOUNDS, AZIDES, and CHLORIDES.

**VCZ000 HR: D**

#### VANADIUM COMPOUNDS

**NIOSH REL:** (Vanadium Compounds) CL 0.05  $mg(V)/m^3/15M$

**SAFETY PROFILE:** Variable toxicity. Vanadium compounds act chiefly as an irritant to the conjunctiva and respiratory tract. Acute and chronic exposure can give rise to conjunctivitis, rhinitis, reversible irritation of the respiratory tract, and to bronchitis, bronchospasms, and asthma-like diseases in more severe cases. There is still some controversy as to the effects of industrial exposure on other systems of the body. Responses are mostly acute, seldom chronic. The first report of human vanadium poisoning described rather widespread systemic effects, consisting of polycythemia, followed by red blood cell destruction and anemia, loss of appetite, pallor and emaciation, albuminuria and hematuria, gastrointestinal disorders, nervous complaints, and cough, sometimes severe enough to cause hemoptysis. More recent reports describe symptoms that, for the most part, are restricted to the conjunctiva and respiratory system, no evidence being found of disturbances of the gastrointestinal tract, kidneys, blood, or central nervous system. Vanadate ( $VO_3^-$ ) is a potent inhibitor of the sodium pump, an enzyme universally present in eukaryotic organisms. The absorption of  $V_2O_5$  by inhalation is nearly 100%. Though certain workers believe that it is only the pentoxide that is harmful, other investigators have found that patronite dust (chiefly vanadium sulfide) is quite toxic to animals, causing acute pulmonary edema. Acute poisoning in animals by ingestion of vanadium compounds causes nervous disturbances,

paralysis of legs, respiratory failure, convulsions, bloody diarrhea, and death. Poisoning by inhalation causes bleeding of the nose and acute bronchitis. Some compounds have reported mutation effects. VF<sub>5</sub> and the oxyhalogenides of pentavalent vanadium (VOF<sub>3</sub>, VOCl<sub>3</sub>, VOB<sub>3</sub>) are volatile. Vanadium compounds are common air contaminants. The fumes are highly toxic. The major use of vanadium and its alloys is in the steel industry. When heated to decomposition they emit toxic fumes of VO<sub>x</sub>. See also specific compounds.

**VDA000 CAS: 10580-52-6 HR: 3**  
**VANADIUM DICHLORIDE**

mf: Cl<sub>2</sub>V mw: 121.84

**PROP:** Hexagonal, green, deliquescent plates. D: 3.23 @ 18°, mp: 1350°. Sol in abs alc, glacial acetic acid.

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:540 mg/kg AIHAAP 30,470,69

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compounds) CL 0.05

mg(V)/m<sup>3</sup>/15M

**SAFETY PROFILE:** Moderately toxic by ingestion. Will react with water or steam to produce toxic and corrosive fumes and explosive hydrogen gas. Platinum accelerates the reaction to violence. When heated to decomposition it emits toxic fumes of VO<sub>x</sub>. See also HYDROCHLORIC ACID, VANADIUM COMPOUNDS, and CHLORIDES.

**VDF000 HR: 2**  
**VANADIUM ORE**

**PROP:** Powder, pelletized or screened to minus one inch.

**TOXICITY DATA with REFERENCE:**

ihl-hmn TDLo:4 µg/kg:PUL AMIHAB 12,635,55

**OSHA PEL:** Respirable Dust and Fume: TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compounds) CL 0.05

mg(V)/m<sup>3</sup>/15M

**SAFETY PROFILE:** Human systemic effects by inhalation; pulmonary system effects. When heated to decomposition it emits toxic fumes of VO<sub>x</sub>. See also VANADIUM COMPOUNDS.

**VDK000 CAS: 19120-62-8 HR: 3**  
**VANADIUM OXIDE TRIISOBUTOXIDE**

mf: C<sub>12</sub>H<sub>27</sub>O<sub>4</sub>V mw: 287.14

**SYNS:** ISOBUTYL ORTHOVANADATE □ TRIISOBUTOXY-OXOVANADIUM □ TRIISOBUTYL ORTHOVANADATE □ TRIISOBUTYL VANADATE □ TRIISOPROPOXYVANADIUM OXIDE

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg/24H SEV PESTC\* 9,5,80

eye-rbt 100 mg SEV PESTC\* 9,5,80

orl-rat LD50:293 mg/kg PESTC\* 9,5,80

skn-rbt LD50:1930 mg/kg PESTC\* 9,5,80

**SAFETY PROFILE:** Poison by ingestion. Moderately toxic by skin contact. A severe skin and eye irritant. When

heated to decomposition it emits acrid smoke and irritating fumes of VO<sub>x</sub>. See also VANADIUM COMPOUNDS.

**VDP000 CAS: 7727-18-6 HR: 3**  
**VANADIUM OXYTRICHLORIDE**

**DOT:** UN 2443

mf: Cl<sub>3</sub>OV mw: 173.29

**PROP:** Lemon yellow liquid, freezing to deep orange solid. Mp: -77°, bp: 126.7°, d: 1.811 @ 32°.

**SYNS:** TRICHLOROXYVANADIUM □ VANADIUM TRICHLORIDE OXIDE □ VANADYL TRICHLORIDE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:140 mg/kg AIHAAP 30,470,69

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compounds) CL 0.05 mg(V)/m<sup>3</sup>/15M

**DOT CLASSIFICATION:** 8; Label: Corrosive

**SAFETY PROFILE:** Poison by ingestion. A corrosive irritant to skin, eyes, and mucous membranes. Explosive reaction with sodium. Violently hygroscopic. Violent reaction with rubidium (at 60°C), potassium. When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and Cl<sup>-</sup>. See also VANADIUM COMPOUNDS and HYDROCHLORIC ACID.

**VDU000 CAS: 1314-62-1 HR: 3**  
**VANADIUM PENTOXIDE (dust)**

**DOT:** UN 2862

mf: O<sub>5</sub>V<sub>2</sub> mw: 181.88

**PROP:** Yellow to red crystalline powder or orange solid. Loses oxygen reversibly on heating. Amphoteric. Mild oxidizing agent. Mp: 677°, bp: decomp @ 1750°, d: 3.357 @ 18°. Insol. IDLH 35 mg/m<sup>3</sup> (as V).

**SYNS:** ANHYDRIDE VANADIQUE (FRENCH) □ C.I. 77938 □ RCRA WASTE NUMBER P120 □ VANADIC ANHYDRIDE □ VANADIO, PENTOSSIDO di (ITALIAN) □ VANADIUM DUST and FUME (ACGIH) □ VANADIUM(V) OXIDE □ VANADIUM PENTAOXIDE □ VANADIUMPENTOXID (GERMAN) □ VANADIUM PENTOXIDE, non-fused form (DOT) □ VANADIUMPENTOXIDE (DUTCH) □ VANADIUM, PENTOXIDE de (FRENCH) □ WANADU PIECIOTLENEK (POLISH)

**TOXICITY DATA with REFERENCE:**

mrc-bcs 500 mmol/L MUREAV 77,109,80

ihl-hmn TCLo:346 mg/m<sup>3</sup>:PUL AMIHAB 19,497,59

ihl-hmn TCLo:1 mg/m<sup>3</sup>/8H:PUL,EYE AEHLAU 14,709,67

orl-rat LD50:10 mg/kg ATXKA8 16,182,56

ihl-rat LCLo:70 mg/m<sup>3</sup>/2H NTIS\*\* AEC-TR-6710

ipr-rat LD50:12 mg/kg ATXKA8 16,182,56

scu-rat LD50:14 mg/kg ATXKA8 16,182,56

itr-rat LDLo:25 mg/kg NTIS\*\* AEC-TR-6710

orl-mus LD50:23 mg/kg 85GMAT -,119,82

scu-mus LD50:10 mg/kg ZVKOA6 19,186,74

ihl-cat LCLo:500 mg/m<sup>3</sup>/23M 30ZIAO -,140,64

scu-rbt LDLo:20 mg/kg 27ZWAY 3.3,154,-

ivn-rbt LDLo:10 mg/kg 27ZWAY 3.3,154,-

scu-gpg LDLo:20 mg/kg 30ZIAO -,140,64

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**OSHA PEL:** Respirable Dust and Fume: TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>; Not Classifiable as a Human Carcinogen; BEI: 50 µg/g creatinine of vanadium in urine at end of shift at end of workweek.

**DFG MAK:** (fine dust) 0.05 mg/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compounds) CL 0.05 mg(V)/m<sup>3</sup>/15M

**DOT CLASSIFICATION:** 6.1; Label: Poison

**SAFETY PROFILE:** Poison by ingestion, inhalation, intraperitoneal, subcutaneous, intratracheal, and intravenous routes. An experimental teratogen. Human systemic effects by inhalation: bronchiolar constriction, including asthma, cough, dyspnea, sputum, and conjunctiva irritation.

Experimental reproductive effects. Mutation data reported.

A respiratory irritant; causes skin pallor, greenish-black tongue, chest pain, cough, dyspnea, palpitation, lung changes. When ingested it causes gastrointestinal tract disturbances. May also cause a papular skin rash. Mixtures with calcium + sulfur + water may ignite spontaneously.

The absorption of V<sub>2</sub>O<sub>5</sub> by inhalation is nearly 100%.

Incompatible with ClF<sub>3</sub>, Li, peroxyformic acid. When heated to decomposition it emits acrid smoke and irritating fumes of VO<sub>x</sub>. See also VANADIUM COMPOUNDS.

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #ID-185 or NIOSH: Vanadium Oxides, 7504.

**VDZ000 CAS: 1314-62-1 HR: 3**

**VANADIUM PENTOXIDE (fume)**

mf: O<sub>5</sub>V<sub>2</sub> mw: 181.88

**PROP:** IDLH 35 mg/m<sup>3</sup> (as V).

**SYNS:** RCRA WASTE NUMBER P120 □ VANADIUM DUST and FUME (ACGIH) □ VANADIUM (OSHA) □ VANADIUM PENTOXIDE, nonfused form (DOT)

**TOXICITY DATA with REFERENCE:**

ihl-rat TCLo:27 µg/m<sup>3</sup>/24H/70D-C GISAAA 31(7),8,66

ihl-rat TCLo:100 µg/m<sup>3</sup>/24H/17W-C GISAAA 46(2),17,81

**CONSENSUS REPORTS:** EPA Extremely Hazardous Substances List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**OSHA PEL:** Respirable Dust and Fume: TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compound) CL 0.05 mg(V)/m<sup>3</sup>/15M

**DOT CLASSIFICATION:** 6.1; Label: Poison

**SAFETY PROFILE:** A poison by several routes. Can react violently with (Ca + S + H<sub>2</sub>O), ClF<sub>3</sub>, Li. When heated to decomposition it emits toxic fumes of VO<sub>x</sub>. See also VANADIUM PENTOXIDE (dust).

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #ID-185.

**VEA000 CAS: 1314-34-7 HR: 3**

**VANADIUM SESQUIOXIDE**

mf: O<sub>3</sub>V<sub>2</sub> mw: 149.88

**PROP:** Black crystals or solid. Not amphoteric. Shows unusual electrical properties with a tenfold change in resistance between 225 and 4°. There is a metal-insulator transition at 155K. Mp: 1970°, d: 4.87 @ 18°.

**SYNS:** VANADIC OXIDE □ VANADIUM OXIDE □ VANADIUM TRIOXIDE

**TOXICITY DATA with REFERENCE:**

itr-rat LDLo:125 mg/kg NTIS\*\* AEC-TR-6710

orl-mus LD50:130 mg/kg 85GMAT -,119,82

scu-mus LD50:130 mg/kg ZVKOA6 19,186,74

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compound) CL 0.05 mg(V)/m<sup>3</sup>/15M

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intratracheal routes. Ignites when heated in air. When heated to decomposition it emits toxic fumes of VO<sub>x</sub>. See also VANADIUM COMPOUNDS.

**ANALYTICAL METHOD:** For occupational chemical analysis use NIOSH: Vanadium Oxides, 7504.

**VEA100 CAS: 16785-81-2 HR: 2**

**VANADIUM SULFATE**

mf: H<sub>2</sub>O<sub>4</sub>S·xV mw: 454.66

**PROP:** An essential trace mineral.

**SYNS:** SULFURIC ACID, VANADIUM SALT □ VANADIUM SULPHATE

**TOXICITY DATA with REFERENCE:**

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**SAFETY PROFILE:** Experimental reproductive effects. When heated to decomposition it emits toxic fumes of SO<sub>x</sub> and V<sub>2</sub>O<sub>5</sub>.

**VEF000 CAS: 7632-51-1 HR: 3**

**VANADIUM TETRACHLORIDE**

**DOT:** UN 2444

mf: Cl<sub>4</sub>V mw: 192.74

**PROP:** Reddish-brown liquid. Readily hydrolyzes; decomp slowly to VCl<sub>3</sub> + Cl<sub>2</sub> at room temp. Mp: -28°, bp: 148.5°, d: 1.816 @ 30°. Sol in CCl<sub>4</sub> and donor solvs.

**SYN:** VANADIUM CHLORIDE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:160 mg/kg AIHAAP 30,470,69

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>

**NIOSH REL:** (Vanadium Compounds) CL 0.05 mg(V)/m<sup>3</sup>/15M

**DOT CLASSIFICATION:** 6.1; Label: Poison

**SAFETY PROFILE:** Poison by ingestion. A corrosive irritant to skin, eyes, and mucous membranes. When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and Cl<sup>-</sup>. See also VANADIUM COMPOUNDS and HYDROCHLORIC ACID.

**VEK000 CAS: 13470-26-3 HR: 3  
VANADIUM TRIBROMIDE**mf: Br<sub>3</sub>V mw: 290.67**PROP:** Green-black deliq crystals or solid, violet vapor. Disproportionates to VBr<sub>4</sub> + VBr<sub>2</sub>; thermal decomp to VBr<sub>2</sub> + Br<sub>2</sub>. Mp: decomp. Sol in donor solvs.**SYN:** VANADIUM BROMIDE**TOXICITY DATA with REFERENCE:**

scu-rbt LDLo:20 mg/kg 27ZWAY 3,3,1541,-

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>**NIOSH REL:** CL 0.05 mg(V)/m<sup>3</sup>/15M**SAFETY PROFILE:** Poison by subcutaneous route.When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and Br<sup>-</sup>. See also VANADIUM COMPOUNDS and BROMIDES.**VEK100 CAS: 13520-90-6 HR: 3  
VANADIUM TRIBROMIDE OXIDE**mf: Br<sub>3</sub>OV mw: 306.65**PROP:** Deep-red liquid; hydrolyzes in air; decomp slowly at room temp. Mp: -59°, bp: 170°. Sol in CH<sub>2</sub>Br<sub>2</sub>.**SAFETY PROFILE:** Reacts violently with water. When heated to decomposition it emits toxic fumes of Br<sup>-</sup> and VO<sub>x</sub>. See also VANADIUM OXYTRICHLORIDE, VANADIUM COMPOUNDS, and BROMIDES.**VEP000 CAS: 7718-98-1 HR: 3  
VANADIUM TRICHLORIDE****DOT:** UN 2475mf: Cl<sub>3</sub>V mw: 157.29**PROP:** Pink crystals or violet very hygroscopic solid; disproportionates @ >4° to VCl<sub>4</sub> + VCl<sub>2</sub>. Mp: decomp, d: 3.00 @ 18°. Sol in aq HCl and most donor solvs.**SYN:** VANADIUM(III) CHLORIDE**TOXICITY DATA with REFERENCE:**

orl-rat LD50:350 mg/kg AIHAAP 30,470,69

scu-rbt LDLo:20 mg/kg EQSSDX 1,1,75

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>**NIOSH REL:** (Vanadium Compounds) CL 0.05 mg(V)/m<sup>3</sup>/15M**DOT CLASSIFICATION:** 8; Label: Corrosive**SAFETY PROFILE:** Poison by ingestion and subcutaneous routes. A corrosive irritant to skin, eyes, and mucous membranes. Extremely violent reaction with methyl magnesium iodide and other Grignard reagents. When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and Cl<sup>-</sup>. See also VANADIUM COMPOUNDS and HYDROCHLORIC ACID.**VEU000 HR: 3  
VANADYL AZIDE DICHLORIDE**mf: Cl<sub>2</sub>N<sub>3</sub>OV mw: 179.87**SAFETY PROFILE:** Explosive. When heated to decomposition it emits very toxic fumes of VO<sub>x</sub>, Cl<sup>-</sup>, andNO<sub>x</sub>. See also AZIDES, VANADIUM COMPOUNDS, and CHLORIDES.**VEZ000 CAS: 27774-13-6 HR: 3  
VANADYL SULFATE****DOT:** UN 2931mf: O<sub>5</sub>SV mw: 163.00**PROP:** Blue crystals or solid.**SYNS:** C.I. 77940 □ OXYSULFATOVANADIUM**TOXICITY DATA with REFERENCE:**

mrc-smc 6 mmol/L MUTAEX 1,21,86

sln-smc 4 mmol/L MUTAEX 1,21,86

scu-rat LDLo:140 mg/kg AJSNAO 1,347,17

ipr-mus LD50:144 mg/kg COREAF 256,1043,63

scu-mus LD50:560 mg/kg RPTOAN 34(3),135,71

skn-rbt LD50:4450 mg/kg JACTDZ 1,712,92

ivn-rbt LDLo:16 mg/kg AJSNAO 1,347,17

scu-gpg LDLo:31 mg/kg AJSNAO 1,347,17

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**ACGIH TLV:** TWA 0.05 mg(V<sub>2</sub>O<sub>5</sub>)/m<sup>3</sup>**NIOSH REL:** (Vanadium Compounds) CL 0.05 mg(V)/m<sup>3</sup>/15M**DOT CLASSIFICATION:** 6.1; Label: Poison**SAFETY PROFILE:** A poison and an inhalation hazard. Poison by intravenous, intraperitoneal, and subcutaneous routes. Mutation data reported. When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and SO<sub>x</sub>. See also SULFATES and VANADIUM COMPOUNDS.**VEZ100 CAS: 12439-96-2 HR: 3  
VANADYL SULFATE PENTAHYDRATE**mf: O<sub>5</sub>SV•5H<sub>2</sub>O mw: 253.07**SYN:** OXOSULFATOVANADIUM PENTAHYDRATE**TOXICITY DATA with REFERENCE:**

orl-rat LD50:448 mg/kg TOLED5 23,227,84

ipr-rat LD50:74 mg/kg TOLED5 23,227,84

orl-mus LD50:467 mg/kg TOLED5 23,227,84

ipr-mus LD50:113 mg/kg TOLED5 23,227,84

**SAFETY PROFILE:** Poison by intraperitoneal route.Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of VO<sub>x</sub> and SO<sub>x</sub>. See VANADYL SULFATE and VANADIUM COMPOUNDS.**VEZ925 CAS: 149-17-7 HR: 2  
VANCIDE**mf: C<sub>14</sub>H<sub>13</sub>N<sub>3</sub>O<sub>3</sub> mw: 271.30**PROP:** Light-yellow powder with slt aromatic odor.**SYNS:** FTIVAZID □ FTIVAZIDE □ ISONICOTINIC ACID, VANILLYLIDENEHYDRAZIDE □ PHTIVAZID □ PHTIVAZIDE □ 4-PYRIDINECARBOXYLIC ACID, ((4-HYDROXY-3-METHOXY-PHENYL)METHYLENE)HYDRAZIDE □ VANICID □ VANILLABERON □ VANIZIDE**SAFETY PROFILE:** Questionable carcinogen with experimental tumorigenic data. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VFA000 CAS: 1404-90-6 HR: 2****VANCOCIN**mf:  $C_{66}H_{75}Cl_2N_9O_{24}$  mw: 1449.40**PROP:** Off-white, odorless powder.**SYN:** VANCOMYCIN**TOXICITY DATA with REFERENCE:**

ivn-wmn TDLo:15 mg/kg/90M-C:SKN NEJMAG 313,756,85

ivn-wmn TDLo:170 mg/kg/19D-I:BLD CMAJAX 132,39,85

ivn-inf TDLo:295 mg/kg/3D-I:SYS JTCTDW 30,285,92

mul-wmn TDLo:30 mg/kg/2D-I:SKN AIMEAS 115,410,91

ipr-mus LD50:1734 mg/kg 85FZAT -,675,67

ivn-mus LD50:430 mg/kg JANTAJ 43,913,90

scu-mus LD50:5000 mg/kg 85GDA2 1,315,80

**SAFETY PROFILE:** Moderately toxic by intraperitoneal and intravenous routes. Human systemic effects: agranulocytosis, allergic dermatitis, dermatitis, interstitial nephritis. When heated to decomposition it emits toxic fumes of  $NO_x$ .**VFA050 CAS: 1404-93-9 HR: 3****VANCOCINE HYDROCHLORIDE**mf:  $C_{66}H_{75}Cl_2N_9O_{24} \cdot ClH$  mw: 1485.86**PROP:** Amorphous solid.**SYN:** VANCOCIN HYDROCHLORIDE**TOXICITY DATA with REFERENCE:**

ivn-wmn TDLo:20 mg/kg:CVS AIMEAS 101,880,84

ivn-man TDLo:3571  $\mu g/kg/15M-C:CVS,SKN$  AIMEAS 104,285,86

ipr-rat LD50:2218 mg/kg IYKEDH 12,933,81

ivn-rat LD50:319 mg/kg IYKEDH 12,933,81

ipr-mus LD50:1734 mg/kg IYKEDH 12,933,81

ivn-mus LD50:489 mg/kg IYKEDH 12,933,81

**SAFETY PROFILE:** Poison by intravenous route. Moderately toxic by intraperitoneal routes. Human systemic effects by intravenous route: cardiac arrhythmias, blood pressure lowering, and allergic dermatitis. When heated to decomposition it emits toxic fumes of  $NO_x$  and HCl.**VFA100 CAS: 60207-93-4 HR: 2****VANGARD**mf:  $C_{14}H_{15}Cl_2N_3O_2$  mw: 328.22**SYNS:** BENIT  $\square$  CGA 64251  $\square$  1-((2-(2,4-DICHLOROPHENYL)-4-ETHYL-1,3-DIOXOLAN-2-YL)METHYL)-1H-1,2,4-TRIAZOLE  $\square$  ETACONAZOLE  $\square$  SONAX  $\square$  1H-1,2,4-TRIAZOLE, 1-((2-(2,4-DICHLOROPHENYL)-4-ETHYL-1,3-DIOXOLAN-2-YL)METHYL)-**TOXICITY DATA with REFERENCE:**

orl-rat LD50:1343 mg/kg PEMNDP 8,344,87

skn-rat LD50:&gt;3100 mg/kg PEMNDP 8,344,87

**SAFETY PROFILE:** Moderately toxic by ingestion and skin contact. When heated to decomposition it emits toxic vapors of  $NO_x$  and  $Cl^-$ .**VFA200 CAS: 8047-24-3 HR: 1****VANILLA TINCTURE****TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg/24H MOD FCTOD7 20,849,82

**SAFETY PROFILE:** A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes.**VFF000 CAS: 121-34-6 HR: 1****VANILLIC ACID**mf:  $C_8H_8O_4$  mw: 168.16**PROP:** Odorless needles from water. Bp: subl, mp: 210°. Sol in water, ether; very sol in alc.**SYNS:** ACIDE VANILLIQUE  $\square$  4-HYDROXY-m-ANISIC ACID  $\square$  4-HYDROXY-3-METHOXYBENZOIC ACID  $\square$  3-METHOXY-4-HYDROXYBENZOIC ACID  $\square$  PROTOCATECHUIC ACID, 3-METHYL ESTER  $\square$  VA  $\square$  p-VANILLIC ACID**TOXICITY DATA with REFERENCE:**

cyt-ham:ovr 50 g/L CALEDQ 14,251,81

ipr-rat LD50:5020 mg/kg COREAF 243,609,56

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.**VFF100 CAS: 3943-74-6 HR: 3****VANILLIC ACID, METHYL ESTER**mf:  $C_9H_{10}O_4$  mw: 182.19**PROP:** Cosmetic fragrance.**PROP:** Pale yellow liquid. Liquid at ambient temps.**SYNS:** BENZOIC ACID, 4-HYDROXY-3-METHOXY-, METHYL ESTER  $\square$  4-HYDROXY-3-METHOXYBENZOIC ACID METHYL ESTER  $\square$  METHYL 4-HYDROXY-3-METHOXYBENZOATE  $\square$  METHYL VANILLATE**TOXICITY DATA with REFERENCE:**

ivn-mus LD50:180 mg/kg CSLNX\* NX#06782

**SAFETY PROFILE:** A poison by intravenous route. When heated to decomposition it emits acrid smoke and irritating vapors.**VFK000 CAS: 121-33-5 HR: 2****VANILLIN**mf:  $C_8H_8O_3$  mw: 152.16  
 $HO(CH_3O)C_6H_3CO \cdot H$ **PROP:** White, crystalline needles from water; vanilla odor. D: 1.056, bp: 285°, mp: 80–81°. Sol in 125 parts water, 20 parts glycerin, 2 parts 95% alc, chloroform, ether.**SYNS:** FEMA No. 3107  $\square$  4-HYDROXY-m-ANISALDEHYDE  $\square$  4-HYDROXY-3-METHOXYBENZALDEHYDE  $\square$  LIOXIN  $\square$  3-METHOXY-4-HYDROXYBENZALDEHYDE  $\square$  METHYLPROTOCATECHUALDEHYDE  $\square$  VANILLA  $\square$  VANILLALDEHYDE  $\square$  VANILLIC ALDEHYDE  $\square$  p-VANILLIN  $\square$  ZIMCO**TOXICITY DATA with REFERENCE:**sce-hmn:lym 750  $\mu mol/L$  MUREAV 169,129,86

orl-rat LD50:1580 mg/kg FCTXAV 2,327,64

ipr-rat LD50:1160 mg/kg COREAF 243,609,56

scu-rat LD50:1500 mg/kg RMSRA6 16,449,1896

ipr-mus LD50:475 mg/kg FAONAU 44A,79,67

ivn-dog LDLo:1320 mg/kg COREAF 236,2549,53

orl-rbt LDLo:3000 mg/kg JAPMA8 29,425,40

orl-gpg LD50:1400 mg/kg FCTXAV 2,327,64

ipr-gpg LD50:1190 mg/kg COREAF 236,2549,53

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion, intraperitoneal, subcutaneous, and intravenous routes. Experimental reproductive effects. Human mutation data reported. Can react violently with Br<sub>2</sub>, HClO<sub>4</sub>, potassium-tert-butoxide, tert-chlorobenzene + NaOH, formic acid + thallium nitrate. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALDEHYDES.

**VFP000 CAS: 148-53-8 HR: 3**  
**o-VANILLIN**

mf: C<sub>8</sub>H<sub>8</sub>O<sub>3</sub> mw: 152.16

**PROP:** Yellow needles from H<sub>2</sub>O. D: 1.056, mp: 44–45°, bp: 128° @ 10 mm. Sol in water; very sol in alc, benzene, ether, and CS<sub>2</sub>.

**SYNS:** 6-FORMYLGUAIACOL □ 2-HYDROXY-m-ANISALDEHYDE □ 2-HYDROXY-3-METHOXYBENZALDEHYDE □ 3-METHOXY-3-BENZALDEHYDE (FRENCH) □ ORTHOVANILLINE □ OXY-2-METHOXY-3-BENZALDEHYDE (FRENCH)

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg FCTOD7 20,563,82  
eye-rbt 100 mg FCTOD7 20,573,82  
eye-rbt 100 mg/4S rns MLD FCTOD7 20,573,82  
ipr-rat LD50:347 mg/kg COREAF 243,609,56  
orl-mus LD50:1330 mg/kg IJANDP 10,741,87  
ipr-gpg LD50:400 mg/kg COREAF 238,257,54

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by intraperitoneal route. An eye and skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also VANILLIN and ALDEHYDES.

**VFP100 CAS: 122-48-5 HR: 2**  
**VANILLYL ACETONE**

mf: C<sub>11</sub>H<sub>14</sub>O<sub>3</sub> mw: 194.25

**PROP:** Crystals from pet ether. Mp: 40–41°, bp: 187–188°. Sltly sol in water, pet ether; sol in ether.

**SYNS:** 2-BUTANONE, 4-(4-HYDROXY-3-METHOXYPHENYL)- □ GINGERONE □ 4-(4-HYDROXY-3-METHOXYPHENYL)-2-BUTANONE □ (4-HYDROXY-3-METHOXYPHENYL)ETHYL METHYL KETONE □ 3-METHOXY-4-HYDROXY-BENZYLACETONE □ (0)-PARADOL □ ZINGERONE □ ZINGIBERONE

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg/24H MLD FCTOD7 20,851,82  
orl-rat LD50:2580 mg/kg FCTOD7 20,851,82  
skn-rbt LD50:>5 g/kg FCTOD7 20,851,82

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Moderately toxic by ingestion. A skin irritant. A flammable liquid. When heated to decomposition it emits acrid smoke and irritating fumes.

**VFP200 CAS: 78100-57-9 HR: 3**  
**VANILOL**

mf: C<sub>15</sub>H<sub>23</sub>NO<sub>5</sub> mw: 297.39

**SYNS:** 4-((3-ISOPROPYLAMINO)-2-HYDROXYPROPOXY)-3-METHOXY-BENZOIC ACID METHYL ESTER □ 1-(2-METHOXY-4-METHOXYCARBONYL-1-PHENOXY)-3-ISOPROPYLAMINO-2-PROPANOL

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:401 mg/kg CYLPDN 2(2),97,81  
ipr-mus LD50:207 mg/kg CYLPDN 2(2),97,81  
ivn-mus LD50:50 mg/kg CYLPDN 2(2),97,81

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also ESTERS.

**VFU000 CAS: 137-42-8 HR: 3**  
**VAPAM**

mf: C<sub>2</sub>H<sub>4</sub>NS<sub>2</sub>•Na mw: 129.18

**PROP:** Crystals from 2H<sub>2</sub>O. Very sol in H<sub>2</sub>O.

**SYNS:** BASAMID-FLUID □ CARBAM □ CARBATHIONE □ KARBATION □ MAPOSOL □ METAM-SODIUM (DUTCH, FRENCH, GERMAN, ITALIAN) □ METHAM SODIUM □ N-METHYLDITHIOCARBAMATE de SODIUM (FRENCH) □ METHYLDITHIOCARBAMIC ACID, SODIUM SALT □ N-METHYLDITHIOCARBAMIC ACID, SODIUM SALT □ N-METIL-DITIOCARBAMATO di SODIO (ITALIAN) □ NATRIUM-N-METHYL-DITHIOCARBAMAAT (DUTCH) □ NATRIUM-N-METHYL-DITHIOCARBAMAT (GERMAN) □ SISTAN □ SMDC □ SODIUM METHYLDITHIOCARBAMATE □ SODIUM N-METHYLDITHIOCARBAMATE □ TRAPEX □ TRIMATON □ VDM □ VPM

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:1700 mg/kg FMCHA2 -,C151,83  
skn-rat LD50:636 mg/kg 85GMAT -,106,82  
orl-mus LD50:50 mg/kg RREVAH 10,97,65  
orl-rbt LD50:320 mg/kg HYSAAV 32,169,67  
skn-rbt LD50:800 mg/kg WRPCA2 9,119,70  
orl-gpg LD50:815 mg/kg HYSAAV 32,169,67

**SAFETY PROFILE:** Poison by ingestion. Moderately toxic by skin contact. Irritating to skin and mucous membranes. Accompanied by alcohol intake it causes violent vomiting and shock. A general-purpose soil fumigant. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub>, SO<sub>x</sub>, and Na<sub>2</sub>O. See also CARBAMATES.

**VGA000 CAS: 6159-55-3 HR: 3**  
**VASICINE**

mf: C<sub>11</sub>H<sub>10</sub>N<sub>2</sub>O mw: 186.23

**PROP:** dl-Form: needles. Mp: 210°. Sol in acetone, alc, chloroform; sltly sol in water, ether, benzene. l-Form: needles. Mp: 212°.

**SYNS:** 1,2,3,9-TETRAHYDROPYRROLO(2,1-B)QUINAZOLIN-3-OL □ VASICIN (GERMAN)

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:640 mg/kg ARZNAD 13,474,63  
ipr-rat LD50:115 mg/kg ARZNAD 13,474,63  
scu-rat LD50:335 mg/kg ARZNAD 13,474,63  
orl-mus LD50:290 mg/kg ARZNAD 13,474,63  
ipr-mus LD50:79 mg/kg IJMRAQ 66,680,77  
scu-mus LD50:200 mg/kg ARZNAD 13,474,63

**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, and subcutaneous routes. Experimental reproductive

effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VGA025 CAS: 80039-73-2 HR: 2**  
**VASICINONE HYDROCHLORIDE**

mf: C<sub>11</sub>H<sub>10</sub>N<sub>2</sub>O<sub>2</sub>•ClH mw: 238.69

**SYN:** 2,3-DIHYDRO-3-HYDROXYPYRROLO(2,1-b)QUINA-ZOLIN-9(1H)-ONE HYDROCHLORIDE

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:1100 mg/kg DDIPD8 8,833,82

ipr-mus LD50:520 mg/kg DDIPD8 8,833,82

ivn-mus LD50:440 mg/kg DDIPD8 8,833,82

**SAFETY PROFILE:** Moderately toxic by ingestion, intraperitoneal and intravenous routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and HCl. See also KETONES.

**VGA100 CAS: 37244-86-3 HR: 3**  
**VASOBRIX 32**

mf: C<sub>12</sub>H<sub>11</sub>I<sub>3</sub>N<sub>2</sub>O<sub>5</sub>•C<sub>12</sub>H<sub>11</sub>I<sub>3</sub>N<sub>2</sub>O<sub>5</sub>•C<sub>7</sub>H<sub>17</sub>NO<sub>5</sub>•C<sub>2</sub>H<sub>7</sub>NO  
 mw: 1544.25

**SYN:** AG. 5895

**TOXICITY DATA with REFERENCE:**

ivn-rat LD50:11,500 mg/kg THERAP 26,595,71

ipr-mus LD50:18,900 mg/kg THERAP 26,595,71

ivn-mus LD50:15,100 mg/kg THERAP 26,595,71

ice-mus LD50:160 mg/kg THERAP 26,595,71

**SAFETY PROFILE:** Poison by intracerebral route. When heated to decomposition it emits toxic fumes of I and NO<sub>x</sub>.

**VGA300 CAS: 579-56-6 HR: 3**  
**VASODILAN**

mf: C<sub>18</sub>H<sub>23</sub>NO<sub>3</sub>•ClH mw: 337.88

**PROP:** A solid. Mp: 201–208°. Sol in H<sub>2</sub>O, insol in CHCl<sub>3</sub> and Et<sub>2</sub>O.

**SYNS:** DILAVASE □ DUVADILAN □ 4-HYDROXY-α-(1-((1-METHYL-2-PHENOXYETHYL)AMINO)ETHYL)-BENZENEM-ETHANOL HYDROCHLORIDE □ 1-(p-HYDROXYPHENYL)-2-(1'-METHYL-2'-PHENOXY)ETHYLAMINOPROPANOL-1 HYDROCHLORIDE □ ISOPLAIT □ ISOXSUPRINE HYDROCHLORIDE □ ISOXSUPRIN HYDROCHLORIDE □ SUPRILENT □ VADO-SILAN □ VASOPLEX □ VASOTRAN

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:1750 mg/kg TXAPA9 18,185,71

ipr-rat LD50:164 mg/kg TXAPA9 18,185,71

orl-mus LD50:1100 mg/kg NIIRDN 6,71,82

ipr-mus LD50:185 mg/kg NIIRDN 6,71,82

ivn-mus LD50:61 mg/kg NIIRDN 6,71,82

ivn-dog LD50:57 mg/kg NIIRDN 6,71,82

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion. An experimental teratogen. Used as a vasodilator. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and HCl.

**VG000 CAS: 395-28-8 HR: 3**  
**VASODILIAN**

mf: C<sub>18</sub>H<sub>23</sub>NO<sub>3</sub> mw: 301.42

**PROP:** A solid. Mp: 102.5–103.5°.

**SYNS:** DILAVASE □ DUVADILAN □ p-HYDROXY-N-(1-METHYL-2-PHENOXYETHYL)NOREPHEDRINE □ 1-(4-HYDROXYPHENYL)-2-(1-METHYL-2-PHENOXYETHYL-AMINO)-PROPANOL □ 1-(p-HYDROXYPHENYL)-2-(1'-METHYL-2'-PHENOXYETHYLAMINO)PROPANOL-2-HYDROCHLORIDE □ ISOXSUPRINE □ 2-(PHENOXY-2-PROPYLAMINO)-1-(p-HYDROXYPHENYL)-1-PROPANOL HYDROCHLORIDE □ VASODILAN

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:200 mg/kg ARZNAD 21,199,71

ipr-mus LD50:118 mg/kg FRPSAX 38,571,83

ivn-mus LD50:48 mg/kg EJMAC5 10,291,75

**SAFETY PROFILE:** Poison by ingestion, intravenous and intraperitoneal routes. A human teratogen. Human reproductive effects by ingestion: uterus, cervix and vagina effects. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. Used to delay premature parturition (labor) and to accelerate fetal lung development.

**VGK000 CAS: 26328-04-1 HR: 2**  
**VASODISTAL**

mf: C<sub>22</sub>H<sub>31</sub>N<sub>3</sub>O<sub>5</sub>•C<sub>4</sub>H<sub>4</sub>O<sub>4</sub> mw: 533.64

**PROP:** Crystals from EtOH. Mp: 135°.

**SYNS:** BRENDIL □ CINEPAZIDE MALEATE □ MALEATE de CINEPAZIDE (FRENCH) □ MD 67350 □ 1-((1-PYRROLIDINYL-CARBONYL)METHYL)-4-(3,4,5-TRIMETHOXYCINNAMOYL)-PIPERAZINE MALEATE □ 1-(4-((3',4',5'-TRIMETHOXYCINNAMOYL)-1-PIPERAZINYL)ACETYL)PYRROLIDINE MALEATE □ 4-(3,4,5-TRIMETHOXYCINNAMOYL)-1-(1-PYRROLIDINYL)CARBONYLEMETHYLPIPERAZINE MALEATE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:1310 mg/kg THERAP 29,29,74

scu-rat LD50:710 mg/kg IYKEDH 10,407,79

ivn-rat LD50:414 mg/kg THERAP 29,29,74

orl-mus LD50:1000 mg/kg THERAP 29,29,74

scu-mus LD50:946 mg/kg IYKEDH 10,407,79

ivn-mus LD50:617 mg/kg THERAP 29,29,74

**SAFETY PROFILE:** Moderately toxic by ingestion, subcutaneous, and intravenous routes. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. Used as a vasodilator.

**VGP000 CAS: 51-43-4 HR: 3**  
**VASOTONIN**

mf: C<sub>9</sub>H<sub>13</sub>NO<sub>3</sub> mw: 183.23

**PROP:** White powder. Mp: 216° (decomp).

**SYNS:** ADNEPHRINE □ ADRENAL □ 1-ADRENALIN □ ADRENALIN-MEDIHALER □ ADRENAMINE □ ADRENAN □ ADRENAPAX □ ADRENASOL □ ADRENATRATE □ ADRENODIS □ ADRENOHORMA □ ADRENUTOL □ ADRINE □ ASMATANE MIST □ ASTHMA METER MIST □ ASTMAHALIN □ BALMADREN □ BERNARENIN □ BIORENINE □ BOSMIN □ BREVIRENIN □ BRONKAIT MIST □ CHELAFRIN □ CORISOL □ 3,4-DIHYDROXY-α-((METHYLAMINO)METHYL)BENZYL ALCOHOL □ 1-1-(3,4-DIHYDROXYPHENYL)-2-METHYLAMINO-ETHANOL □ DRENAMIST □ DYLEPHRIN □ DYPNE-INHAL □ EPIFRIN □ EPINEPHRAN □ EPINEPHRINE □ (–)-EPINEPHRINE □ (R)-EPINEPHRINE □ 1-EPINEPHRINE □ 1-EPINEPHRINE

(synthetic) □ EPIRENAMINE □ EPIRENAN □ EPITRATE □ ESPHYGMOGENINA □ EXADRIN □ GLYCIREN-AN □ HAEMOSTASIN □ HEKTALIN □ HEMISINE □ HEMOST-ASIN □ (R)-4-(1-HYDROXY-2-(METHYLAMINO)ETHYL)-1,2-BENZENEDIOL (9CI) □ HYPERNEPHRIN □ HYPORENIN □ INTRANEFIRIN □ KIDOLINE □ LEVORENIN □ LYOPHRIN □ MEDIHALER-EPI □ METANEPHRIN □ METHYLAR-TERENOL □ MUCIDRINA □ MYOSTHENINE □ MYTRATE □ NEPHRID-INE □ NIERALINE □ PARANEPHRIN □ PRIMATENE MIST □ RCRA WASTE NUMBER P042 □ RENAGLADIN □ RENALEPT-INE □ RENALINA □ RENOFORM □ RENOSTYPRICIN □ RENOSTYPTIN □ SCURENALINE □ SINDRENINA □ SOLADREN □ SPHYGMOGENIN □ STRYPTIRENAL □ SUPRACAPSULIN □ SUPRADIN □ SUPRANEPHRANE □ SUPRANEPHRINE □ SUPRANOL □ SUPRARENIN □ SUPREL □ SURENINE □ SUSPHRINE □ SYMPATHIN I □ TAKAMINA □ TOKAMINA □ TONOGEN □ VAPONEFRIN □ VASOCONSTRICTINE □ VASOCONSTRICTOR □ VASODRINE □ VASOTON

**TOXICITY DATA with REFERENCE:**

mmo-sat 500 µg/plate ABCHA6 45,327,81  
oms-mus:oth 2500 ng/L ECREAL 35,629,64  
scu-man LDLo:735 µg/kg 85DCAI 2,73,70  
scu-man TDLo:8571 ng/kg/80M-I:CVS AHJOA2 111,1193,86  
ivn-wmn TDLo:6 µg/kg:CVS BMJOAE 286,519,83  
orl-rat LDLo:30 mg/kg 85IXA4 -,22,48  
skn-rat LD50:62 mg/kg GTPZAB 8(4),30,64  
ipr-rat LDLo:10 mg/kg JPETAB 88,268,46  
scu-rat LD50:5 mg/kg SMWOAS 71,554,41  
ivn-rat LD50:150 µg/kg AIPTAK 41,365,31  
ims-rat LD50:3500 mg/kg 27ZIAQ -,105,73  
orl-mus LDLo:50 mg/kg 85IXA4 -,22,48  
ipr-mus LD50:4 mg/kg JPETAB 90,110,47  
scu-mus LD50:1470 µg/kg AEPPAE 202,658,43  
ivn-mus LD50:217 µg/kg APTOA6 38,474,76  
scu-dog LD50:5 mg/kg NIIRDN 6,120,82  
ivn-dog LD50:100 µg/kg NIIRDN 6,120,82  
scu-cat LDLo:20 mg/kg BBMS\*\* -,48  
ivn-cat LDLo:500 µg/kg 85IXA4 -,22,48

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Human poison by subcutaneous route. Experimental poison by ingestion, skin contact, subcutaneous, intraperitoneal, intravenous, and intramuscular routes. Human systemic effects: cardiomyopathy including infarction, arrhythmias. An experimental teratogen. Experimental reproductive effects. Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. Used as an adrenergic, sympathomimetic, vasoconstrictor, bronchodilator, and cardiac stimulant.

**VGP100 CAS: 1324-54-5 HR: 1**  
**VAT BLUE 18**

**SYNS:** AHCOVAT NAVY BLUE BR □ AHCOVAT PRINTING NAVY BLUE XSA □ ALIZANTHRENE NAVY BLUE R □ ALIZANTHRENE NAVY BLUE RT □ AMANTHRENE NAVY BLUE BN □ AMANTHRENE SUPRA NAVY BLUE BN □ AMANTHRENE SUPRA NAVY BLUE BNR □ ANTHRAVAT NAVY BLUE BR □ CALCOLOID NAVY BLUE □ CALCOLOID NAVY BLUE NTC □

CALDEDON NAVY BLUE AR □ CALEDON NAVY BLUE ART □ CALEDON NAVY BLUE 2R □ CARBAN-THRENE NAVY BLUE RA □ C.I. 59815 □ C.I. VAT BLUE 18 □ CIBANONE NAVY BLUE FRA □ CIBANONE NAVY BLUE RA □ MIKETHREN NAVY BLUE FRA □ MODR KYPOVA 18 □ PARADONE DARK BLUE RFW □ PONSOL JADE GREEN SUPRA D □ PONSOL NAVY BLUE RA □ PONSOL NAVY BLUE RAD □ ROMANTRENE NAVY BLUE FRA □ SANDOTHRENE DARK BLUE NR □ TINON NAVY BLUE RA

**TOXICITY DATA with REFERENCE:**

eye-rbt 500 mg/24H MLD 85JCAE -,1326,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** An eye irritant. When heated to decomposition it emits acrid smoke and irritating vapors.

**VGP200 CAS: 129-09-9 HR: 1**  
**VAT YELLOW 2**

mf: C<sub>28</sub>H<sub>14</sub>N<sub>2</sub>O<sub>2</sub>S<sub>2</sub> mw: 474.56

**SYNS:** ANTHRA(2,1-d:6,5-d')BISTHIAZOLE-6,12-DIONE, 2,8-DIPHENYL- □ C.I. 67300 □ C.I. VAT YELLOW 2 □ ZLUT KYPOVA 2 □ ZLUT OSTANTHRENOVA GC

**TOXICITY DATA with REFERENCE:**

eye-rbt 500 mg/24H MLD 85JCAE -,1331,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** An eye irritant. When heated to decomposition it emits toxic vapors of NO<sub>x</sub> and SO<sub>x</sub>.

**VGU000 CAS: 6198-57-8 HR: 3**  
**VEATCHINE HYDROCHLORIDE**

mf: C<sub>22</sub>H<sub>33</sub>NO<sub>2</sub>•ClH mw: 380.02

**PROP:** Crystals. Decomp @ 267–271°. Sol in water. Alkaloid isolated from *Garrya veatchii* (JAPMA8 45,733,56).

**TOXICITY DATA with REFERENCE:**

ivn-mus LD50:13 mg/kg JAPMA8 45,733,56

ivn-cat LDLo:2 mg/kg JAPMA8 45,733,56

**SAFETY PROFILE:** Poison by intravenous route. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub> and HCl.

**VGU075 CAS: 50700-72-6 HR: 3**  
**VECURONIUM BROMIDE**

mf: C<sub>34</sub>H<sub>57</sub>N<sub>2</sub>O<sub>4</sub>•Br mw: 637.84

**PROP:** Crystals. Mp: 227–229°.

**SYNS:** NORCURON □ ORG NC 45 □ 16β-PIPECOLINIO-2β-PIPERIDINO-5α-ANDROSTAN-3α,17β-DIOL BROMIDE DIACETATE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:455 mg/kg KSRNAM 20,807,86

ipr-rat LD50:2630 µg/kg KSRNAM 20,807,86

scu-rat LD50:1730 µg/kg KSRNAM 20,807,86

ivn-rat LD50:200 µg/kg KSRNAM 20,807,86

orl-mus LD50:41 mg/kg KSRNAM 20,807,86

ipr-mus LD50:144 µg/kg KSRNAM 20,807,86

scu-mus LD50:148 µg/kg KSRNAM 20,807,86

ivn-mus LD50:51 µg/kg KSRNAM 20,807,86

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intravenous and intraperitoneal routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and Br<sup>-</sup>.

**VGU200 CAS: 68956-68-3 HR: 1****VEGETABLE OIL****SYNS:** VEGETABLE OIL MIST (OSHA) □ VISCOLEO OIL**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**OSHA PEL:** TWA 15 mg/m<sup>3</sup>, total dust; TWA 5 mg/m<sup>3</sup>, respirable fraction**SAFETY PROFILE:** A nuisance mist. When heated to decomposition it emits acrid smoke and irritating fumes.**VGU700 CAS: 9046-56-4 HR: D****VENACIL****PROP:** Colorless substance when pure, having a light powdery texture when in the freeze-dried state. Sol in physiological saline. Absorbable on weakly basic anion exchange materials.**SYNS:** ABBOTT 38414 □ A 38414 (ENZYME) □ ANCROD □ ARVIN □ ARWIN □ IRC-50 ARVIN**TOXICITY DATA with REFERENCE:**

ivn-rat LDLo:120 units/kg LANCAO 1,486,68

ivn-rbt LDLo:2.5 units/kg LANCAO 1,486,68

**SAFETY PROFILE:** An experimental teratogen. Experimental reproductive effects.**VGU750 CAS: 59917-39-4 HR: 3****VENDESINE SULFATE**mf: C<sub>43</sub>H<sub>55</sub>N<sub>5</sub>O<sub>7</sub>•H<sub>2</sub>O•S mw: 852.11**PROP:** Amorphous solid from 2-propanol. Mp: @ >250°.**SYNS:** 23-AMINO-O<sup>4</sup>-DEACETYL-23-DEMETHOXYVINCALE-UKOBLASTINE SULFATE □ DAVA □ DESACETYLVIN-BLASTINE AMIDE SULFATE □ ELDESINE □ LILLY 99094 □ VINDESINA SULFATO (SPANISH)**TOXICITY DATA with REFERENCE:**

cyt-hmn:lym 50 mg/L CYTOAN 50,311,85

oms-ham:ovr 2300 pmol/L CNREA8 38,2886,78

ipr-rat LD50:1050 µg/kg KSRNAM 17,1549,83

scu-rat LD50:1790 µg/kg KSRNAM 17,1549,83

ivn-rat LD50:1920 µg/kg KSRNAM 17,1549,83

ipr-mus LD50:3500 µg/kg KSRNAM 17,1549,83

scu-mus LD50:6800 µg/kg KSRNAM 17,1549,83

ivn-mus LD50:6300 µg/kg JTEHD6 1,843,76

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes. Experimental reproductive effects. Human mutation data reported. When heated to decomposition it emits toxic fumes of SO<sub>x</sub> and NO<sub>x</sub>.**VGZ000 CAS: 606-58-6 HR: 3****VENGICIDE**mf: C<sub>12</sub>H<sub>13</sub>N<sub>5</sub>O<sub>4</sub> mw: 291.30**PROP:** Needles or prisms from 1H<sub>2</sub>O. Mp: 243°.**SYNS:** AHYGROSCOPIN-B □ 4-AMINO-5-CYANO-7-(d-RIBOFURANOSYL)-7H-PYRROLO(2,3-d)PYRIMIDINE □ 4-AMINO-7-β-d-RIBOFURANOSYL-7H-PYRROLO(2,3-d)PYRIMID-INE-5-CARBONITRILE □ ANTIBIOTIC 1037 □ ANTIBIOTIC A-399-Y4 □ ANTIBIOTIC E212 □ CYANOTUBERICIDIN □ E-212 □ NARITHERACIN □ NSC-63701 □ SIROMYCIN □ TOYOCAMY-CIN NUCLEOSIDE □ UNAMYCIN-B □ URAMYCIN B**TOXICITY DATA with REFERENCE:**dnd-esc 50 µmol/L MUREAV 89,95,81  
oms-ckn:emb 100 µg/L CNREA8 29,1707,69  
orl-mus LD50:8 mg/kg 85FZAT -,805,67  
ipr-mus LD50:20 mg/kg 85GDA2 5,315,81  
scu-mus LD50:10 mg/kg 85ERAY 2,1087,78  
ivn-mus LD50:1500 µg/kg 85GDA2 5,318,81**CONSENSUS REPORTS:** Cyanide and its compounds are on the Community Right-To-Know List.**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, subcutaneous, and intravenous routes. Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and CN<sup>-</sup>. Used as an antibiotic. See also NITRILES.**VHA275 HR: 2****VENOPIRIN****TOXICITY DATA with REFERENCE:**

orl-rat LD50:4350 mg/kg YACHDS 6,1275,78

scu-rat LD50:1860 mg/kg YACHDS 6,1275,78

ivn-rat LD50:1525 mg/kg YACHDS 6,1275,78

orl-mus LD50:3270 mg/kg YACHDS 6,1275,78

scu-mus LD50:1840 mg/kg YACHDS 6,1275,78

ivn-mus LD50:950 mg/kg YACHDS 6,1275,78

**SAFETY PROFILE:** Moderately toxic by ingestion, subcutaneous, and intravenous routes.**VHA350 CAS: 21898-19-1 HR: 3****VENTIPULMIN**mf: C<sub>12</sub>H<sub>18</sub>Cl<sub>2</sub>N<sub>2</sub>O•ClH mw: 313.68**PROP:** White powder. Sol in water.**SYNS:** 4-AMINO-α-((tert-BUTYLAMINO)METHYL)-3,5-DICHLOROBENZYL ALCOHOL HYDROCHLORIDE □ 4-AMINO-α-((tert-BUTYLAMINO)METHYL)-3,5-DICHLOROBENZYLALCOHOL-HYDROCHLORID (GERMAN) □ CLENBUTEROL HYDROCHLORIDE □ NAB 365 □ NAB 365Cl □ SPIROPENT**TOXICITY DATA with REFERENCE:**

orl-rat LD50:159 mg/kg IYKEDH 15,741,84

ipr-rat LD50:67 mg/kg OYYAA2 9,675,75

scu-rat LD50:148 mg/kg IYKEDH 15,741,84

ivn-rat LD50:35,300 µg/kg ARZNAD 26,1420,76

orl-mus LD50:147 mg/kg IYKEDH 15,741,84

ipr-mus LD50:46 mg/kg OYYAA2 9,675,75

scu-mus LD50:63 mg/kg IYKEDH 15,741,75

ivn-mus LD50:27,600 µg/kg ARZNAD 26,1420,76

orl-dog LDLo:500 mg/kg ARZNAD 26,1420,76

ivn-dog LDLo:45 mg/kg ARZNAD 26,1420,76

scu-rbt LD50:67,100 µg/kg ARZNAD 26,1404,76

ivn-rbt LD50:12,600 µg/kg ARZNAD 26,1404,76

orl-gpg LD50:67,100 µg/kg ARZNAD 26,1420,76

scu-gpg LD50:74 mg/kg ARZNAD 26,1404,76

ivn-gpg LD50:12,600 µg/kg ARZNAD 26,1420,76

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and HCl.**VHA450 CAS: 152-11-4 HR: 3****VERAPAMIL HYDROCHLORIDE**mf: C<sub>27</sub>H<sub>38</sub>N<sub>2</sub>O<sub>4</sub>•ClH mw: 491.13

**PROP:** Viscous, pale yellow oil. Bp: 243–246°. Practically insol in water; sparingly sol in hexane; sol in benzene, ether, the lower alcs, acetone, ethyl acetate, and chloroform.

**SYNS:** CALAN □ CORDILOX □ IPROVERATRIL HYDRO-CHLORIDE □ ISOPTIN □ IZOPTIN □ IZOPTIN HYDRO-CHLORIDE □ VASOLAN

#### TOXICITY DATA with REFERENCE:

cyt-hmn:lyms 30 μmol/L MUREAV 244,135,90  
 orl-man TDL<sub>0</sub>:26 mg/kg;CVS,PUL HUTODJ 4,327,85  
 orl-man TDL<sub>0</sub>:143 μg/kg/4H-C:CVS ICMED9 8,55,82  
 ivn-man LDLo:256 μg/kg/5M-C SMJOAV 75,1429,85  
 ivn-man TDL<sub>0</sub>:71 μg/kg/5M-C SMJOAV 75,1429,82  
 orl-wmn TDL<sub>0</sub>:135 mg/kg;EYE,PUL AJCDAG 58,1142,86  
 ivn-wmn TDL<sub>0</sub>:200 μg/kg/15S-C:CVS,PUL NYSJAM 83,1181,83  
 orl-inf TDL<sub>0</sub>:80 mg/kg PEDIAU 73,543,84  
 ivn-inf TDL<sub>0</sub>:1026 μg/kg;CVS ADCHAK 58,465,83  
 orl-rat LD50:108 mg/kg NIIRDN 6,766,82  
 ipr-rat LD50:60 mg/kg PCJOAU 15,813,81  
 scu-rat LD50:107 mg/kg NIIRDN 6,766,82  
 ivn-rat LD50:16 mg/kg NIIRDN 6,766,82  
 ims-rat LD50:118 mg/kg NIIRDN 6,766,82  
 orl-mus LD50:163 mg/kg NIIRDN 6,766,82  
 ipr-mus LD50:46 mg/kg PCJOAU 15,813,81  
 scu-mus LD50:68 mg/kg NIIRDN 6,766,82  
 ivn-mus LD50:6 mg/kg PCJOAU 15,813,81  
 ims-dog LD50:25 mg/kg NIIRDN 6,766,82

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intramuscular, intravenous, and intraperitoneal routes. Human systemic effects: arrhythmias, cardiomyopathy, coma, cyanosis, dyspnea, fall in blood pressure, mydriasis, pulse rate decrease. Human reproductive effects: impotence. Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and HCl.

#### VHF000 CAS: 63951-45-1 HR: 3 VERATENSINE

mf: C<sub>37</sub>H<sub>59</sub>NO<sub>11</sub> mw: 693.97

**PROP:** An alkaloid ester separated from *Veratrum album* (JPETAB 82,162,44).

**SYNS:** CEVANE-3-β,4-β,7-α,14,15-α,16-β,20-HEPTOL,4,9-EPOXY-, 15-(+)-2-HYDROXY-2-METHYLBUTYRATE) 3-((-)-2-METHYLBUTYRATE) □ GERMERIN (GERMAN)

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:30 mg/kg AEPPAE 189,397,38  
 scu-rat LD50:3700 μg/kg AEPPAE 189,397,38  
 scu-cat LDLo:500 μg/kg AEPPAE 189,397,38  
 scu-rbt LDLo:2 mg/kg AEPPAE 189,397,38  
 ivn-rbt LDLo:300 μg/kg AEPPAE 189,397,38  
 scu-frg LD50:9 mg/kg AEPPAE 189,397,38

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intravenous routes. An alkaloid poison. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

#### VHK000 CAS: 120-14-9 HR: 2 VERATRALDEHYDE

mf: C<sub>9</sub>H<sub>10</sub>O<sub>3</sub> mw: 166.19

**PROP:** Needles from Et<sub>2</sub>O, ligroin, CCl<sub>4</sub> or toluene; odor of vanilla beans. Mp: 42–43°, bp: 281°. Sltly sol in hot water; freely sol in alc, ether.

**SYNS:** 3,4-DIMETHOXYBENZALDEHYDE □ 3,4-DIMETHOXYBENZENECARBONAL □ METHYLVANILLIN □ 4-*o*-METHYLVANILLIN □ PROTOCATECHUALDEHYDE DIMETHYL ETHER □ PROTOCATECHUIC ALDEHYDE DIMETHYL ETHER □ VANILLIN METHYL ETHER □ VERATRIC ALDEHYDE □ VERATRYL ALDEHYDE

#### TOXICITY DATA with REFERENCE:

skn-rbt 500 mg/24H MLD FCTXAV 13,681,75

orl-rat LD50:2000 mg/kg FCTXAV 13,681,75

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion. A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALDEHYDES and ETHERS.

#### VHP500 CAS: 60-70-8 HR: 3 VERATRAMINE

mf: C<sub>27</sub>H<sub>39</sub>NO<sub>2</sub> mw: 409.67

**PROP:** Crystals. Mp: 209.5–210.5°. Sltly sol in water; sol in methanol, alc. Precipitated by digitonin.

#### TOXICITY DATA with REFERENCE:

scu-mus LD50:4500 μg/kg JPETAB 113,89,55

ivn-mus LD50:3100 μg/kg CKFRAY 2,418,53

orl-rbt LDLo:33 mg/kg TJADAB 3,175,70

**SAFETY PROFILE:** Poison by ingestion, intravenous, and subcutaneous routes. An experimental teratogen. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

#### VHP600 CAS: 93-07-2 HR: 2 VERATRIC ACID

mf: C<sub>9</sub>H<sub>10</sub>O<sub>4</sub> mw: 182.19

**PROP:** Light yellowish-beige fine crystalline powder.

**SYNS:** BENZOIC ACID, 3,4-DIMETHOXY- □ 3,4-DIMETHOXY-BENZOIC ACID □ 3,4-DIMETHYLPROTO-CATECHUIC ACID

#### TOXICITY DATA with REFERENCE:

dni-hmn:lyms 1 mmol/L BCPCA6 29,1275,80

ipr-mus LD50:>800 mg/kg JPETAB 196,478,76

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by intraperitoneal route. Human mutation data reported. When heated to decomposition it emits acrid smoke and irritating vapors.

#### VHU000 CAS: 71-62-5 HR: 3 VERATRIDINE

mf: C<sub>36</sub>H<sub>51</sub>NO<sub>11</sub> mw: 673.88

**PROP:** Noncrystal; yellow-white powder. Mp: 180°. Sol in water; sltly sol in ether.

**SYNS:** 4,9-EPOXYCEVANE-3,4,12,14,16,17,20-HEPTOL 3-(3,4-DIMETHOXYBENZOATE) □ VERATRINE (amorphous) □ 3-VERATROYLVERACEVINE

#### TOXICITY DATA with REFERENCE:

ipr-rat LD50:3500 μg/kg JPETAB 78,238,43

ipr-mus LD50:1350 μg/kg PSEBAA 76,847,51

scu-mus LD50:6300 μg/kg JPETAB 113,89,55

ivn-mus LD50:420 µg/kg JPETAB 82,167,44

**SAFETY PROFILE:** Poison by intraperitoneal, subcutaneous, and intravenous routes. Combustible when exposed to heat or flame. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also VERATRINE.

**VHZ000 CAS: 8051-02-3 HR: 3**  
**VERATRINE**

**PROP:** A powder from the plant *Schoenocaulon officinale*. A botanical insecticide. The active ingredients are a group of alkaloids known as veratrin, e.g., cevadine and veratridine.

**SYNS:** ASAGRAEA OFFICINALIS □ CAUSTIC BARLEY □ CEVADILLA □ CEVADINE □ ENT 123 □ SABACIDE □ SABADILLA □ SABANE DUST □ VERATRIDINE □ VERATRIN (GERMAN)

**TOXICITY DATA with REFERENCE:**

orl-hmn LDLo:143 mg/kg 34ZIAG -,522,69  
orl-rat LD50:4000 mg/kg WRPCA2 9,119,70  
ipr-mus LD50:7500 µg/kg PSEBAA 76,847,51  
scu-mus LDLo:10 mg/kg HDTU\*\* -,33  
orl-dog LDLo:2 mg/kg HBAMAK 4,1289,35  
orl-cat LDLo:2500 µg/kg HBAMAK 4,1289,35  
orl-bwd LD50:17,800 µg/kg AECTCV 12,355,83

**SAFETY PROFILE:** Human poison by ingestion. Experimental poison by ingestion, intraperitoneal, and subcutaneous routes. An experimental teratogen. Ingestion causes severe gastrointestinal tract disturbances, burning in the mouth, vomiting, diarrhea, and cramps. Also produces headache, dizziness, slow pulse, and weakness. Large doses cause death by circulatory and respiratory failure. It is a powerful irritant to skin and mucous membranes. Less toxic than rotenone. Inhalation causes violent sneezing. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. Used to kill lice.

**VIA875 CAS: 97805-00-0 HR: D**  
**N-(o-VERATROYL)GLYCINOHYDROXAMIC ACID**  
mf: C<sub>11</sub>H<sub>14</sub>N<sub>2</sub>O<sub>5</sub> mw: 254.27

**TOXICITY DATA with REFERENCE:**

mmo-sat 1 µmol/plate JOPHDQ 3,557,80  
dnr-bcs 10 µmol/disc JOPHDQ 3,557,80

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VIK050 CAS: 5763-61-1 HR: 3**  
**VERATRYLAMINE**

mf: C<sub>9</sub>H<sub>13</sub>NO<sub>2</sub> mw: 167.23

**PROP:** A liquid. Bp: 155–156° @ 16 mm.

**SYNS:** BENZENEMETHANAMINE, 3,4-DIMETHOXY- □ BENZYLAMINE, 3,4-DIMETHOXY- □ 3,4-DIMETHOXY-BENZYLAMINE

**TOXICITY DATA with REFERENCE:**

ivn-mus LD50:178 mg/kg CSLNX\* NX#00651

**SAFETY PROFILE:** Poison by intravenous route. An experimental teratogen. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VIK100 CAS: 93-17-4 HR: 3**  
**VERATRYL CYANIDE**

mf: C<sub>10</sub>H<sub>11</sub>NO<sub>2</sub> mw: 177.22

**PROP:** A solid. Mp: 64–65°, bp: 171–178° @ 10 mm.

**SYNS:** 3,4-DIMETHOXY-BENZENEACETONITRILE (9CI) □ 3,4-DIMETHOXYBENZYL CYANIDE □ 3,4-DIMETHOXYPHENYLACETONITRILE □ HOMOVERATRONITRILE

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:1029 mg/kg GTPZAB 26(2),55,82  
ivn-mus LD50:178 mg/kg CSLNX\* NX#00302

**CONSENSUS REPORTS:** Cyanide and its compounds are on the Community Right-To-Know List.

**SAFETY PROFILE:** Poison by intravenous route. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and CN<sup>-</sup>. See also NITRILES.

**VIK150 CAS: 135-85-3 HR: 3**  
**VERATRYLHYDRAZINE**

mf: C<sub>9</sub>H<sub>14</sub>N<sub>2</sub>O<sub>2</sub> mw: 182.25

**SYNS:** 3,4-DIMETHOXYBENZYLHYDRAZINE □ ((3,4-DIMETHOXYPHENYL)METHYL)HYDRAZINE □ TAC-28 □ VETRAZIN □ VETRAZINE

**TOXICITY DATA with REFERENCE:**

scu-mus LD50:127 mg/kg FATOAO 26,75,63  
ivn-mus LD50:146 mg/kg FATOAO 26,75,63

**SAFETY PROFILE:** Poison by subcutaneous and intravenous routes. Used as a uterine stimulant. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VIK200 CAS: 93088-18-7 HR: 3**  
**1-VERATRYLPIPERAZINE DIHYDROCHLORIDE**  
mf: C<sub>13</sub>H<sub>20</sub>N<sub>2</sub>O<sub>2</sub> mw: 236.35

**SYN:** DICHLORHYDRATE de DIMETHOXY-3,4 BENZYLPIPERAZINE (FRENCH)

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:740 mg/kg AIPTAK 128,17,60  
ipr-mus LD50:310 mg/kg AIPTAK 128,17,60  
ivn-mus LD50:130 mg/kg AIPTAK 128,17,60

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VIK300 CAS: 776-99-8 HR: 3**  
**VERATRYL-2-PROPANONE**

mf: C<sub>11</sub>H<sub>14</sub>O<sub>3</sub> mw: 194.25

**PROP:** Pale yellow liquid. Refractive index: 1.533–1.539 @ 20°, d: 1.110–1.120.

**SYNS:** 3,4-DIMETHOXYBENZYL METHYL KETONE □ (3,4-DIMETHOXYPHENYL)ACETONE □ 1-(3,4-DIMETHOXY-PHENYL)-2-PROPANONE □ 2-PROPANONE, 1-(3,4-DIMETHOXY-PHENYL)-

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:670 mg/kg JPMSAE 60,799,71

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Moderately toxic by intraperitoneal route. A flammable liquid. When heated to decomposition it emits acrid smoke and irritating vapors.

**VIK400 HR: 3**

**VERBENA HYBRIDA Cornol. & Rpl., extract**

**PROP:** Indian plant belonging to the family *Verbenaceae* (IJEBA6 22,312,84).

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:316 mg/kg IJEBA6 22,312,84

**SAFETY PROFILE:** Poison by intraperitoneal route. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.

**VIK500 CAS: 8024-12-2 HR: 2**  
**VERBENA OIL**

**PROP:** Yellow liquid possessing a fresh lemon like floral character. Flash pt: 149° F. Insol in water.

**SYNS:** LIPPIA CITRIODORA OIL □ OILS, VERBENA □ VERBENA ABSOLUTE

**TOXICITY DATA with REFERENCE:**

orl-rat LDLo:5 g/kg FCTOD7 30,137S,92

skn-rbt LDLo:5 g/kg FCTOD7 30,137S,92

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Low toxicity by ingestion and skin contact. A combustible liquid. When heated to decomposition it emits acrid smoke and irritating vapors.

**VIP000 CAS: 18309-32-5 HR: 3**  
**d-VERBENONE**

mf: C<sub>10</sub>H<sub>14</sub>O mw: 150.24

**PROP:** Oil; characteristic odor. Mp: 6.5°, bp: 227–228°, d: 0.9780. Practically insol in water.

**SYN:** (1R,5R)-(+)-2-PINEN-4-ONE

**TOXICITY DATA with REFERENCE:**

ipr-mus LDLo:250 mg/kg CBCCT\* 7,794,55

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by intraperitoneal route. When heated to decomposition it emits acrid smoke and irritating fumes.

**VIP100 CAS: 14374-92-6 HR: 1**  
**VERDORACINE**

mf: C<sub>13</sub>H<sub>18</sub> mw: 174.31

**SYNS:** BENZENE, 1-METHYL-4-(1-METHYLETHYL)-2-(1-PROPENYL)- □ 4-ISOPROPYL-1-METHYL-2-PROPENYL-BENZENE □ 1-METHYL-4-(1-METHYLETHYL)-2-(1-PROPENYL)BENZENE

**TOXICITY DATA with REFERENCE:**

orl-rat LDLo:5 g/kg FCTOD7 26,369,88

skn-rbt LD50:>5 g/kg FCTOD7 26,369,88

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Low toxicity by ingestion and skin contact. When heated to decomposition it emits acrid smoke and irritating vapors.

**VIZ000 CAS: 65072-04-0 HR: 3**  
**VERILOID**

**SYNS:** ALKALOIDS, VERATRUM □ ALKAVERVIR □ AMERICAN HELLEBORE □ AMERICAN VERATRUM □ GREEN HELLEBORE

□ INDIAN POKE □ VERATRUM VIRIDE □ VERATRUM VIRIDE ALKALOIDS EXTRACT □ VERTAVIS

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:12 mg/kg FEPR7 9,257,50

ipr-rat LD50:1690 µg/kg PSEBAA 76,847,51

scu-rat LD50:1590 µg/kg JAPMA8 39,610,50

ivn-rat LD50:440 µg/kg PSEBAA 76,847,51

orl-mus LD50:4500 µg/kg PSEBAA 76,847,51

ipr-mus LD50:3 mg/kg PSEBAA 76,847,51

scu-mus LD50:1120 µg/kg JAPMA8 39,610,50

ivn-mus LD50:430 µg/kg PSEBAA 85,400,54

orl-dog LDLo:3 mg/kg CLDND\* 71,725,49

orl-rbt LD50:18 mg/kg PSEBAA 76,847,51

ivn-rbt LD50:270 µg/kg PSEBAA 76,847,51

**SAFETY PROFILE:** Poison by ingestion, intravenous, subcutaneous, and intraperitoneal routes.

**VIZ100 CAS: 37244-00-1 HR: 2**  
**VERMICULIN**

mf: C<sub>20</sub>H<sub>24</sub>O<sub>8</sub> mw: 392.44

**SYN:** VERMICULINE

**TOXICITY DATA with REFERENCE:**

dni-omi 20 mg/L FOMIAZ 23,389,78

oms-omi 20 mg/L FOMIAZ 23,389,78

ipr-mus LD50:420 mg/kg 85GDA2 2,390,80

**SAFETY PROFILE:** Moderately toxic by intraperitoneal route. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.

**VIZ150 CAS: 66327-54-6 HR: 2**  
**VERNALDEHYDE**

mf: C<sub>14</sub>H<sub>24</sub>O mw: 208.38

**PROP:** Colorless to pale yellow liquid. Flash pt: 172° F. Fragrance.

**SYNS:** 3-CYCLOHEXENE-1-CARBOXALDEHYDE, 1-METHYL-4-(4-METHYLPENTYL)- □ 1-FORMYL-1-METHYL-4-(4-

METHYLPENTYL)-3-CYCLOHEXENE □ 1-METHYL-4-(4-METHYLPENTYL)-3-CYCLOHEXENE-1-CARBOXALDEHYDE

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg FCTOD7 30,37S,92

orl-rat LDLo:5 g/kg FCTOD7 30,37S,92

skn-rbt LD50:>5 g/kg FCTOD7 30,37S,92

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Low toxicity by ingestion and skin contact. A skin irritant. A combustible liquid. When heated to decomposition it emits acrid smoke and irritating vapors.

**VIZ200 CAS: 6875-10-1 HR: 3**  
**VERODOXIN**

mf: C<sub>31</sub>H<sub>46</sub>O<sub>10</sub> mw: 578.77

**PROP:** Crystals from Et<sub>2</sub>O. Mp: 197–198°.

**SYNS:** GITALOXIGENIN + DIGITALOSE (GERMAN) □ STROSPESIDE-16-FORMATE

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:51,870 µg/kg AIPTAK 153,436,65

scu-mus LD50:2890 µg/kg AIPTAK 153,436,65

ivn-cat LDLo:231 µg/kg JMPCAS 5,988,62

orl-gpg LDLo:2370 µg/kg AIPTAK 153,436,65

ivn-gpg LDLo:237 µg/kg AIPTAK 153,436,65

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intravenous routes.

**VIZ250 CAS: 69598-87-4 HR: 1**

### VEROS 030

#### TOXICITY DATA with REFERENCE:

skn-rbt 500 mg/24H MLD 28ZPAK -,309,72

eye-rbt 500 mg/24H MLD 28ZPAK -,309,72

orl-rat LD50:11,800 mg/kg 28ZPAK -,309,72

**SAFETY PROFILE:** Mildly toxic by ingestion. A skin and eye irritant.

**VIZ400 CAS: 60-40-2 HR: 3**

### VERSAMINE

mf: C<sub>11</sub>H<sub>21</sub>N mw: 167.33

**PROP:** dl-Form: Oily liquid. Bp: 72°, n: (25/D) 1.4881. Sltly sol in water.

**SYNS:** INVERSINE □ MECAMILAMINA (ITALIAN) □ MECAMINE □ MECAMYLAMINE □ MEKAMINE □ 2-METHYLAMINOISOCAMPHANE □ 3-METHYLAMINOISOCAMPHANE □ 3-β-METHYLAMINO-2,2,3-TRIMETHYLBICYCLO(2.2.1)HEPTANE □ 2-METHYLAMINO-2,3,3-TRIMETHYLNORBORANE □ 2-METHYLAMINO-2,3,3-TRIMETHYLNORBORNANE □ N-METHYL-2-ISOCAMPHANAMINE □ MEVASINE □ PLEGANGIN □ REVERTINA □ N,2,3,3-TETRAMETHYL-2-NORBORNAMINE □ N,2,3,3-TETRAMETHYL-2-NORCAMPHANAMINE

#### TOXICITY DATA with REFERENCE:

orl-mus LD50:90 mg/kg BCFAAI 103,490,64

ipr-mus LD50:40 mg/kg AITEAT 10,905,62

scu-mus LD50:56 mg/kg FRPSAX 20,482,65

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VIZ500 CAS: 71700-95-3 HR: 1**

### VERSATIC 9-11 ACID

**SYNS:** VERSATIC 9-11 □ VERSATIC ACID 911

#### TOXICITY DATA with REFERENCE:

skn-rbt 3000 mg/3D MOD BJIMAG 23,137,66

skn-rbt 11,500 mg open MOD BJIMAG 23,137,66

**SAFETY PROFILE:** A skin and eye irritant. When heated to decomposition it emits acrid smoke and irritating fumes.

**VJP800 CAS: 4331-22-0 HR: D**

### VERSCOLORIN B

mf: C<sub>18</sub>H<sub>12</sub>O<sub>7</sub> mw: 340.30

**PROP:** Fine yellow needles from Me<sub>2</sub>CO. Mp: 298° (decomp).

#### TOXICITY DATA with REFERENCE:

mno-sat 500 nmol/plate MUREAV 143,121,85

dns-rat:lv 500 nmol/L MUREAV 143,121,85

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.

**VJP900 HR: 3**

### VESPA ORIENTALIS VENOM

**SYNS:** VENOM, ORIENTAL HORNET, VESPA ORIENTALIS □ V. ORIENTALIS VENOM

#### TOXICITY DATA with REFERENCE:

orl-mus LD50:85 mg/kg TOXIA6 15,307,77

ipr-mus LD50:2500 µg/kg TOXIA6 18,469,80

ivn-mus LD50:1900 µg/kg TOXIA6 21,166,83

**SAFETY PROFILE:** Poison by ingestion, intravenous, and intraperitoneal routes.

**VJU000 CAS: 8016-96-4 HR: 1**

### VETIVERT OIL

**PROP:** From steam distillation of roots of *Vetiveria*

*zizanioides stapf* (FCTXAV 12,807,74).

**SYN:** OIL OF VETIVER

#### TOXICITY DATA with REFERENCE:

skn-rbt 500 mg/24H MOD FCTXAV 12,807,74

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes.

**VJZ000 CAS: 53-10-1 HR: 3**

### VIADRIL

mf: C<sub>25</sub>H<sub>36</sub>O<sub>6</sub>•Na mw: 455.60

**PROP:** Lyophilized, fluffy white powder. Decomp @ 193–203°. Sol in water, mildly alkaline buffer solns, acetone, chloroform.

**SYNS:** 21-(3-CARBOXY-1-OXOPROPOXY)-5-β-PREGNANE-3,20-DIONE SODIUM SALT □ HYDROXYDIONE □ HYDROXYDIONE SODIUM □ HYDROXYDIONE SUCCINATE □ 21-HYDROXYPREGNANE-3,20-DIONE SODIUM HEMISUCCINATE □ 21-HYDROXY-5-β-PREGNANE-3,20-DIONE SODIUM HEMISUCCINATE □ 21-HYDROXY-5-β-PREGNANE-3,20-DIONE, SODIUM SALT, HEMISUCCINATE □ P 55 □ PRESUREN □ SUCCINATE SODIQUE de 21-HYDROXYPREGNANDIONE (FRENCH)

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:700 mg/kg JPETAB 115,432,55

ipr-rat LD50:190 mg/kg THERAP 32,375,77

ivn-rat LD50:190 mg/kg JPETAB 115,432,55

orl-mus LD50:1200 mg/kg JPETAB 115,432,55

ipr-mus TDLo:640 mg/kg JMCMA 11,117,68

scu-mus LD50:310 mg/kg AIPTAK 107,159,56

ivn-mus LD50:250 mg/kg JPETAB 115,432,55

ivn-rbt LD50:95 mg/kg JPETAB 115,432,55

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes. Moderately toxic by ingestion. A steroid. When heated to decomposition it emits toxic fumes of Na<sub>2</sub>O.

**VJZ050 CAS: 82-95-1 HR: D**

### VIBAZINE

mf: C<sub>28</sub>H<sub>33</sub>ClN<sub>2</sub> mw: 433.08

**SYNS:** AH 2526 □ APHLAN-R BASE □ BUCLIFEN □ BUCLIZINE □ HISTABUTICINE □ HISTABUTIZINE □ HISTABUTYZINE □ PIPERAZINE, 1-(p-tert-BUTYLBENZYL)-4-(p-CHLORO-α-PHENYLBENZYL)- □ PIPERAZINE, 1-((4-CHLORO-

PHENYL)PHENYLMETHYL)-4-((4-(1,1-DIMETHYLETHYL)-PHENYL)METHYL)- (9CI)

**SAFETY PROFILE:** Experimental reproductive effects. When heated to decomposition it emits toxic vapors of  $\text{NO}_x$  and  $\text{Cl}^-$ .

### VJZ100 HR: D

#### VIBRIO CHOLERAЕ ENDOTOXIN

**SYNS:** CHOLERA ENDOTOXIN □ ENDOTOXIN, VIBRIO CHOLERAЕ

**SAFETY PROFILE:** Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating vapors.

### VJZ200 CAS: 9012-63-9 HR: 3

#### VIBRIO CHOLERAЕ EXOTOXIN

**SYNS:** CHOLERA ENTERO-EXOTOXIN □ CHOLERA ENTEROTOXIN □ CHOLERA EXOTOXIN □ CHOLERAGEN □ CHOLERA TOXIN □ EXO-ENTEROTOXIN □ VIBRIO CHOLERAЕ EXOTOXIN

#### TOXICITY DATA with REFERENCE:

dns-mus-oth 10  $\mu\text{g}/\text{L}$  CRNGDP 8,377,1987  
ivn-mus LD50:260  $\mu\text{g}/\text{kg}$  IMLCAV 1,223,1972  
ivn-mky LDLo:10  $\mu\text{g}/\text{kg}$  TOXIA6 18,309,1980  
ivn-rbt LDLo:100  $\mu\text{g}/\text{kg}$  TOXIA6 19,701,1981

**SAFETY PROFILE:** A poison by intravenous route. Experimental reproductive effects. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating vapors.

### VKA600 CAS: 2185-86-6 HR: 2

#### VICTORIA LAKE BLUE R

mf:  $\text{C}_{29}\text{H}_{32}\text{ClN}_3$  mw: 458.09

**PROP:** Dark bluish crystals from EtOH. Very sol in EtOH; sol in hot  $\text{H}_2\text{O}$ .

**SYNS:** AIZEN VICTORIA BLUE BOH □ BASIC BLUEK □ C.I. 44040 □ HIDACO VICTORIA BLUE R □  $\text{N,N}'$ -( $\text{N,N}'$ -TETRAMETHYL)-1-DIAMINODIPHENYLNAPHTHYL-AMINOMETHANE HYDROCHLORIDE □ VICTORIA BLUE R □ VICTORIA BLUE RS

#### TOXICITY DATA with REFERENCE:

mno-smc 10  $\text{mg}/\text{L}$  VINIT\* #428-84  
orl-rat LD50:960  $\text{mg}/\text{kg}$  GISAAA 47(4),30,82  
scu-rat LD50:1408  $\text{mg}/\text{kg}$  GISAAA 47(4),30,82

**SAFETY PROFILE:** Moderately toxic by ingestion and subcutaneous routes. Questionable carcinogen with experimental carcinogenic data. Mutation data reported. When heated to decomposition it emits toxic fumes of  $\text{Cl}^-$  and  $\text{NO}_x$ .

### VKA650 CAS: 93165-23-2 HR: D

#### VIDANGA DRIED BERRY EXTRACT

**SAFETY PROFILE:** Experimental reproductive effects.

### VKA675 HR: D

#### VIDR-2GD

**PROP:** Extracted from the powdered kernel of the seed of *Ensete superbum*, *cheesm*, *musaceae* (*bannakadali*) (FESTAS 21,247,70).

**SAFETY PROFILE:** Experimental reproductive effects.

### VKA875 CAS: 46817-91-8 HR: 3

#### VILOXAZINE

mf:  $\text{C}_{13}\text{H}_{19}\text{NO}_3$  mw: 237.33

**SYNS:** 2-((2-ETHOXYPHENOXY)METHYL)MORPHOLINE □ 2-(2-ETHOXYPHENOXYMETHYL)TETRAHYDRO-1,4-OXAZINE □ ICI-58834 □ VILOXAZIN

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:2000  $\text{mg}/\text{kg}$  HEPHD2 55,527,80  
ivn-rat LD50:60  $\text{mg}/\text{kg}$  HEPHD2 55,527,80  
orl-mus LD50:1000  $\text{mg}/\text{kg}$  HEPHD2 55,527,80  
ivn-mus LD50:60  $\text{mg}/\text{kg}$  HEPHD2 55,527,80

**SAFETY PROFILE:** Poison by intravenous route. Moderately toxic by ingestion. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of  $\text{NO}_x$ . See also VILOXAZINE HYDROCHLORIDE.

### VKF000 CAS: 35604-67-2 HR: 3

#### VILOXAZINE HYDROCHLORIDE

mf:  $\text{C}_{13}\text{H}_{19}\text{NO}_3 \cdot \text{ClH}$  mw: 273.79

**PROP:** Mp: 185–186°.

**SYNS:** 2-((o-ETHOXYPHENOXY)METHYL)MORPHOLINE HYDROCHLORIDE □ 2-((2-ETHOXYPHENOXY)METHYL)-MORPHOLINE HYDROCHLORIDE □ 2-(2-ETHOXYPHENOXY-METHYL)TETRAHYDRO-1,4-OXAZINE HYDROCHLORIDE □ ICI 58,834 □ VICILAN □ VIVALAN

#### TOXICITY DATA with REFERENCE:

orl-hmn TDLo:25  $\text{mg}/\text{kg}/6\text{D}$ :CNS BMJOAE 2,96,77  
ipr-rat LD50:162  $\text{mg}/\text{kg}$  FRPSAX 35,812,80  
orl-mus LD50:1  $\text{g}/\text{kg}$  MEIEDD 10,1427,83  
ipr-mus LD50:162  $\text{mg}/\text{kg}$  FRPSAX 35,812,80  
ivn-mus LD50:60  $\text{mg}/\text{kg}$  MEIEDD 10,1427,83

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion. Human systemic effects by ingestion: hallucinations, distorted perceptions and convulsions or effect on seizure threshold. When heated to decomposition it emits very toxic fumes of  $\text{NO}_x$  and  $\text{HCl}$ . Used as an antidepressant. See also VILOXAZINE.

### VKP000 CAS: 125-44-0 HR: 3

#### VINBARBITAL SODIUM

mf:  $\text{C}_{11}\text{H}_{15}\text{N}_2\text{O}_3 \cdot \text{Na}$  mw: 246.27

**PROP:** Hygroscopic crystals; bitter taste. Sltly sol in ether and chloroform.

**SYNS:** DELVINAL SODIUM □ 5-ETHYL-5-(1-METHYL-1-BUTENYL)BARBITURIC ACID SODIUM SALT □ 5-ETHYL-5-(1-METHYL-1-BUTENYL)-2,4,6(1H,3H,5H)-PYRIMIDINETRIONE SODIUM SALT □ SODIUM DELVINAL □ SODIUM-5-ETHYL-5-(1-METHYL-1-BUTENYL) BARBITURATE □ SODIUM VINBARBITAL

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:130  $\text{mg}/\text{kg}$  MEIEDD 10,1427,83  
ipr-rat LD50:80  $\text{mg}/\text{kg}$  JAPMA8 32,180,43  
orl-dog LD50:66  $\text{mg}/\text{kg}$  JPETAB 68,22,40

**SAFETY PROFILE:** Poison by ingestion and intraperitoneal routes. Used as a sedative. When heated to decomposition it emits toxic fumes of  $\text{Na}_2\text{O}$  and  $\text{NO}_x$ . See also BARBITURATES.

**VKZ000 CAS: 865-21-4 HR: 3****VINCALEUKOBLASTINE**mf:  $C_{46}H_{58}N_4O_9$  mw: 811.08**PROP:** A solid. Mp: 180–182°, ( $Et_2O$  solvate); mp: 216° (dry).**SYNS:** NCI-C04842 □ NDC 002-1452-01 □

NINCALUICOLFLASTINE □ NSC 47842 □ VINBLASTIN □

VINBLASTINE □ VINCALEUKOBLASTIN □ VINCOBLASTINE □ VLB

**TOXICITY DATA with REFERENCE:**

dni-hmn:oth 200 µg/L 26QZAP 2,377,72

cyt-mus-ipr 900 µg/kg ENMUDM 8,273,86

ivn-man LDLo:2319 µg/kg/38W-I:CVS LANCAO 2,692,80

ocu-hmn TDLo:14 µg/kg:EYE BJOPAL 62,97,78

unr-man TDLo:80 µg/kg:BLD CROBU 50,219,66

ipr-rat LD50:1 mg/kg VINIT\* #3713-83

**CONSENSUS REPORTS:** NCI Carcinogenesis Studies (ipr); No Evidence: mouse CANCAR 40,1935,77; (ipr); Clear Evidence: rat CANCAR 40,1935,77. EPA Genetic Toxicology Program.**SAFETY PROFILE:** Human poison by intravenous route. Experimental poison by intraperitoneal route. Human systemic effects by intravenous and ocular routes: visual field changes, conjunctiva irritation and other eye effects, cardiomyopathy including infarction, and changes in bone marrow. Experimental teratogenic and reproductive effects. Questionable carcinogen with experimental tumorigenic data. Human mutation data reported. When heated to decomposition it emits toxic fumes of  $NO_x$ . Used as an antineoplastic agent. See also VINCALEUKOBLASTINE SULFATE (1:1) (SALT).**VKZ100 CAS: 95273-83-9 HR: 3****VINCALEUKOBLASTINE, O-DEACETYL-3-DE(METHOXYCARBONYL)-4'-DEOXY-3-(((2-ETHOXY-1-(1H-INDOL-3-YLMETHYL)-2-OXOETHYL)AMINO)CARBONYL)-, (3(S))-**mf:  $C_{56}H_{68}N_6O_8$  mw: 953.30**SYNS:** DEOXY-V-TRYPT E □ ETHYL N-(O-4-DEACETYL-4'-DEOXYVINBLASTIN-23-OYL-B)-TRYPTOPHANATE**TOXICITY DATA with REFERENCE:**

unr-mus LD50:91 mg/kg USXXAM #4639456

**SAFETY PROFILE:** A poison by an unreported route. When heated to decomposition it emits toxic vapors of  $NO_x$ .**VLA000 CAS: 143-67-9 HR: 3****VINCALEUKOBLASTINE SULFATE (1:1) (SALT)**mf:  $C_{46}H_{58}N_4O_9 \cdot H_2O_4S$  mw: 909.16**PROP:** A solid. Mp: 284–285°.**SYNS:** EXAL □ 29060 LE □ NSC 49842 □ VELBAN □ VELBE □ VINBLASTINE SULFATE □ VINCALEUKOBLASTINE SULFATE □ VLB MONOSULFATE**TOXICITY DATA with REFERENCE:**

pic-esc 500 mg/L APMBAY 12,234,64

cyt-hmn:lym 3750 µg/L CUSCAM 54,807,85

ivn-hmn TDLo:557 µg/kg:BLD,SKN CNCRA6 29,111,63

orl-rat LD50:305 mg/kg OYYAA2 3,68,69

ipr-rat LD50:2200 µg/kg NIIRDN 6,650,82

ipr-mus LD50:5600 µg/kg NIIRDN 6,650,82

ivn-mus LD50:15 mg/kg NIIRDN 6,650,82

ipr-ham LD50:4300 µg/kg CALEDQ 2,267,77

**CONSENSUS REPORTS:** IARC Cancer Review:

Group 3 IMEMDT 7,371,87; Animal Inadequate Evidence IMEMDT 26,349,81; Human Inadequate Evidence IMEMDT 26,349,81. EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, and intravenous routes. An experimental teratogen. Human systemic effects by intravenous route: blood leukopenia and hair changes. Experimental reproductive effects. Questionable carcinogen. Human mutation data reported. When heated to decomposition it emits very toxic fumes of  $NO_x$  and  $SO_x$ . See also VINCALEUKOBLASTINE and SULFATES.**VLF000 CAS: 1617-90-9 HR: 3****VINCAMINE**mf:  $C_{21}H_{26}N_2O_3$  mw: 354.49**PROP:** Yellow crystals from acetone or methanol. Mp: 232–233°.**SYNS:** ANASCLEROL □ ANGIOPAC □ ARTERIOVINCA □ DECINCAN □ DEVINCAN □ 14,15,DIHYDRO-14-HYDROXY-EBURNAMENINE-14-CARBOXYLIC ACID METHYL ESTER □ EQUIPUR □ NOVICET □ OCU-VINC □ OXYGERON □ PERVAL □ PERVINCAMINE □ PERVONE □ TRIPERVAN □ VINCADAR □ VINCAFOLINA □ VINCAFOR □ VINCAGIL □ VINCAMIDOL □ (+)-VINCAMINE □ VINCAPAN □ VINCAPRONT □ VINCASAUNIER □ VINCIMAX □ VINODREL RETARD**TOXICITY DATA with REFERENCE:**

ipr-rat LD50:253 mg/kg ARZNAD 32,601,82

orl-mus LD50:1 g/kg ARZNAD 10,811,60

ipr-mus LD50:215 mg/kg EJMCA5 16,191,81

ivn-mus LD50:47,740 µg/kg AGSOA6 19,211,78

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion. When heated to decomposition it emits toxic fumes of  $NO_x$ . Used as a vasodilator.**VLF300 HR: 3****VINCA MINOR L., TOTAL ALKALOIDS****PROP:** Total alkaloid extract of the leaves of *Vinca minor* L. (APFRAD 12,799,54).**TOXICITY DATA with REFERENCE:**

orl-mus LD50:500 mg/kg APFRAD 12,799,54

ipr-mus LD50:76 mg/kg APFRAD 12,799,54

ivn-mus LD50:24 mg/kg APFRAD 12,799,54

ivn-gpg LDLo:16 mg/kg APFRAD 12,799,54

**SAFETY PROFILE:** Poison by intravenous and intraperitoneal routes. Moderately toxic by ingestion.**VLF400 CAS: 125317-39-7 HR: D****VINORELBINE DITARTRATE**mf:  $C_{45}H_{54}N_4O_8 \cdot 2C_4H_6O_6$  mw: 1079.23**PROP:** Clear colorless to light yellow solution.**SYNS:** KW-2307 □ NAVELBINE □ C'-NORVINCALEUKOBLASTINE, 3',4'-DIDEHYDRO-4'-DIOXY-, (R-(R\*,R\*))-2,3-DIHYDROXYBUTANEDIOATE (1:2)**TOXICITY DATA with REFERENCE:**

ivn-rat TDLo:2 mg/kg (female 7-16D post):REP  
KSRNAM 27,1375,93

**SAFETY PROFILE:** Experimental reproductive effects. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VLU200 CAS: 83768-87-0 HR: 3  
VINTHIONINE**

mf: C<sub>6</sub>H<sub>11</sub>NO<sub>2</sub>S mw: 161.24

**SYNS:** S-ETHENYL-DL-HOMOCYSTEINE □ S-VINYLDL-HOMOCYSTEINE

**TOXICITY DATA with REFERENCE:**

mno-sat 50 nmol/plate BBRC9 88,395,79  
orl-rat TDLo:18 g/kg/86W-C:CAR CNREA8 42,4364,82  
orl-rat TD:36 g/kg/86W-C:CAR CNREA8 42,4364,82  
ipr-rat TDLo:5625 mg/kg/12W-I:CAR,REP CNREA8 42,4364,82

**SAFETY PROFILE:** Experimental reproductive effects. Suspected carcinogen with experimental carcinogenic data. Mutation data reported. When heated to decomposition it emits toxic fumes of SO<sub>x</sub> and NO<sub>x</sub>.

**VLU210 CAS: 70858-14-9 HR: D  
I-VINTHIONINE**

mf: C<sub>6</sub>H<sub>11</sub>NO<sub>2</sub>S mw: 161.24

**SYNS:** S-ETHENYL-I-HOMOCYSTEINE □ S-VINYLI-HOMOCYSTEINE

**TOXICITY DATA with REFERENCE:**

mno-sat 5 nmol/plate CNREA8 42,4364,82  
dnd-rat-ivr 31 mg/kg CNREA8 42,4364,82

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic fumes of SO<sub>x</sub> and NO<sub>x</sub>. See also VINTHIONINE.

**VLU220 CAS: 4091-14-9 HR: 2  
N-VINYLACETANILIDE**

mf: C<sub>10</sub>H<sub>11</sub>NO mw: 161.22

**SYNS:** ACETAMIDE, N-ETHENYL-N-PHENYL- □ ACETAMIDE, N-PHENYL-N-VINYLD □ ACETANILIDE, N-VINYLD-(8CI) □ N-PHENYL-N-VINYLACETAMIDE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:2460 mg/kg JPMSAE 63,1068,1974

**SAFETY PROFILE:** Moderately toxic by ingestion. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VLU250 CAS: 108-05-4 HR: 3  
VINYL ACETATE**

**DOT:** UN 1301

mf: C<sub>4</sub>H<sub>6</sub>O<sub>2</sub> mw: 86.10



**PROP:** Colorless, mobile liquid; polymerizes to solid on exposure to light. Mp: -92.8°, fp: -100°, bp: 73°, flash p: 18°F, d: 0.9335 @ 20°, autoign temp: 800°F, vap press: 100 mm @ 21.5°, lel: 2.6%, uel: 13.4%, vap d: 3.0. Misc in alc, ether. Somewhat sol in water.

**SYNS:** ACETATE DE VINYLE □ ACETIC ACID, ETHENYL ESTER □ ACETIC ACID, ETHYLENE ETHER □ ACETIC ACID VINYL ESTER □ 1-ACETOXYETHYLENE □ ETHANOIC ACID,

ETHENYL ESTER □ ETHENYL ACETATE □ ETHENYL ETHANOATE □ OCTAN VINYL (POLISH) □ VAC □ VINILE (ACETATO di) (ITALIAN) □ VINYLACETAAT (DUTCH) □ VINYLACETAT (GERMAN) □ VINYL ACETATE, inhibited (DOT) □ VINYL ACETATE H.Q. □ VINYL A MONOMER □ VINYLE (ACETATE de) (FRENCH) □ VINYLESTER KYSELINY OCTOVE □ VINYL ETHANOATE □ VYAC □ ZESET T

**TOXICITY DATA with REFERENCE:**

eye-hmn 22 ppm AIHAAP 30,449,69  
skn-rbt 10 mg/24H open JIHTAB 30,63,48  
eye-rbt 500 mg open JIHTAB 30,63,48  
eye-rbt 500 mg/24H MLD 85JCAE -,354,86  
cyt-hmn:lym 250 μmol/L MUREAV 159,109,86  
sce-ham:ovr 125 μmol/L CNREA8 45,4816,85  
ihl-rat TCLo:600 ppm/6H/5D/2Y-I:ETA EPASR\* 8EHQ-0187-0650  
orl-rat LD50:2920 mg/kg UCDS\*\* 4/25/58  
ihl-rat LC50:4000 ppm/2H DUPON\* ES-3574,75  
orl-mus LD50:1613 mg/kg GISAA 31(8),19,66  
ihl-mus LC50:1550 ppm/4H DUPON\* ES-3574,75  
ihl-rbt LC50:2500 ppm/4H 85INA8 5,621,86  
skn-rbt LD50:2335 mg/kg DUPON\* ES-3574,75  
ihl-gpg LC50:6215 ppm/4H 85INA8 6,1685,91  
ipr-gpg LDLo:500 mg/kg AIHAAP 35,21,74

**CONSENSUS REPORTS:** IARC Cancer Review:

Group 3 IMEMDT 7,56,87; Animal Inadequate Evidence IMEMDT 19,341,79; IMEMDT 39,113,86; Human Inadequate Evidence IMEMDT 39,113,86. Reported in EPA TSCA Inventory. Community Right-To-Know List. EPA Extremely Hazardous Substances List.

**OSHA PEL:** TWA 10 ppm; STEL 20 ppm

**ACGIH TLV:** 10 ppm, STEL: 15 ppm; Animal Carcinogen

**DFG MAK:** 10 ppm (35 mg/m<sup>3</sup>); Confirmed Animal Carcinogen with Unknown Relevance to Humans

**NIOSH REL:** (Vinyl Acetate) CL 15 mg/m<sup>3</sup>/15M

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Confirmed carcinogen with experimental carcinogenic and tumorigenic data. Moderately toxic by ingestion, inhalation, and intraperitoneal routes. A skin and eye irritant. Experimental reproductive effects. Human mutation data reported. Highly dangerous fire hazard when exposed to heat, flame, or oxidizers. A storage hazard, it may undergo spontaneous exothermic polymerization. Reaction with air or water to form peroxides that catalyze an exothermic polymerization reaction has caused several large industrial explosions. Reaction with hydrogen peroxide forms the explosive peracetic acid. Reacts with oxygen above 50°C to form an unstable explosive peroxide. Reacts with ozone to form the explosive vinyl acetate ozonide. Solution polymerization of the acetate dissolved in toluene has resulted in large industrial explosions. Polymerization reaction with dibenzoyl peroxide + ethyl acetate may release ignitable and explosive vapors. The vapor may react vigorously with desiccants (e.g., silica gel or alumina). Incompatible (explosive) with 2-amino ethanol, chlorosulfonic acid, ethylenediamine, ethyleneimine, HCl, HF, HNO<sub>3</sub>, oleum, peroxides, H<sub>2</sub>SO<sub>4</sub>. See also ESTERS.

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #51 or NIOSH: Vinyl Acetate, P&CAM 278.

**VLU310 HR: 3**

**VINYL ACETATE OZONIDE**

mf:  $C_4H_6O_5$  mw: 134.09



**SYN:** 3-ACETOXY-1,2,4-TRIOXOLANE

**SAFETY PROFILE:** The dry material is explosive. When heated to decomposition it emits acrid smoke and irritating fumes.

**VLY300 CAS: 7570-25-4 HR: 3**

**VINYL AZIDE**

mf:  $C_2H_3N_3$  mw: 69.07

**PROP:** Very volatile liquid. Fp:  $-80^\circ$ , bp:  $30^\circ$ .

**SAFETY PROFILE:** A shock-sensitive explosive. When heated to decomposition it emits toxic fumes of  $NO_x$ . See also AZIDES.

**VLZ000 CAS: 5628-99-9 HR: 3**

**1-VINYL AZIRIDINE**

mf:  $C_4H_7N$  mw: 69.12

**SYNS:** 1-ETHENYL AZIRIDINE □ N-VINYLETHYLENEIMINE

**TOXICITY DATA with REFERENCE:**

skn-rbt 2 mg/24H SEV 85JCAE -,816,86  
eye-rbt 50 µg/24H SEV 85JCAE -,816,86  
ihl-rat LCLo:100 ppm/4H TXAPA9 28,313,74  
skn-rbt LD50:20 mg/kg TXAPA9 28,313,74

**SAFETY PROFILE:** Poison by inhalation and skin contact. A severe skin and eye irritant. When heated to decomposition it emits toxic fumes of  $NO_x$ .

**VMA000 CAS: 3691-16-5 HR: 3**

**α-VINYL-1-AZIRIDINEETHANOL**

mf:  $C_6H_{11}NO$  mw: 113.18

**PROP:** A liquid. Bp:  $60-63^\circ$  @ 3 mm.

**SYNS:** AETHOXEN □ AETHYLENIMINO-2-OXYBUTEN (GERMAN) □ 4-AZIRIDINYL-3-HYDROXY-1,2-BUTENE □ 2-(1-AZIRIDINYL)-1-VINYLETHANOL □ α-ETHENYL-1-AZIRIDINEETHANOL (9CI) □ ETHOXENE □ 1-ETHYLENE-IMINO-2-HYDROXY-3-BUTENE □ 1-ETHYLENIMINO-2-HYDROXYBUTENE □ 1-(2-HYDROXYBUT-1-ENYL)AZIRIDINE □ NSC-26806 □ TETRAMIN □ α-VINYL AE

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:33 mg/kg NCISA\* PH-43-63-1132  
ivn-dog LDLo:3 mg/kg CCSUBJ 2,202,65  
ivn-mky LDLo:11 mg/kg CCSUBJ 2,202,65

**SAFETY PROFILE:** Poison by intraperitoneal and intravenous routes. When heated to decomposition it emits toxic fumes of  $NO_x$ .

**VMF000 CAS: 61695-70-3 HR: 2**

**7-VINYLBENZ(a)ANTHRACENE**

mf:  $C_{20}H_{14}$  mw: 254.34

**SAFETY PROFILE:** Questionable carcinogen with experimental tumorigenic data. When heated to decomposition it emits acrid smoke and irritating fumes.

**VMK000 CAS: 769-78-8 HR: 2**

**VINYL BENZOATE**

mf:  $C_9H_8O_2$  mw: 148.17

**PROP:** A liquid. Bp:  $72-76^\circ$ .

**SYN:** BENZOIC ACID, VINYL ESTER

**TOXICITY DATA with REFERENCE:**

skn-rbt 10 mg/24H open AMIHBC 10,61,54  
eye-rbt 500 mg open AMIHBC 10,61,54  
orl-rat LD50:3250 mg/kg AMIHBC 10,61,54

**SAFETY PROFILE:** Moderately toxic by ingestion. A skin and eye irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ESTERS.

**VMP000 CAS: 593-60-2 HR: 3**

**VINYL BROMIDE**

**DOT:** UN 1085

mf:  $C_2H_3Br$  mw: 106.96

**PROP:** A gas or liquid. Mp:  $-138^\circ$ , bp:  $15.6^\circ$ , d: 1.51. Insol in water; misc in alc, ether.

**SYNS:** BROMOETHENE □ BROMOETHYLENE □ BROMURE de VINYLE (FRENCH) □ VINILE (BROMURO di) (ITALIAN) □ VINYL BROMID (GERMAN) □ VINYL BROMIDE, inhibited (DOT) □ VINYLE (BROMURE de) (FRENCH)

**TOXICITY DATA with REFERENCE:**

mma-sat 2 pph/16H ARTODN 41,249,79  
mmo-sat 2 pph/16H ARTODN 41,249,79  
otr-rat-ihl 2000 ppm/14W-I ARTODN 47,71,81  
ihl-rat TCLo:250 ppm/1Y:NEO CHWKA9 121(20),40,77  
orl-rat LD50:500 mg/kg DOWCC\*,12,66

**CONSENSUS REPORTS:** NTP 10th Report on Carcinogens. IARC Cancer Review: Group 2A IMEMDT 7,56,87; Animal Sufficient Evidence IMEMDT 39,133,86; Animal Inadequate Evidence IMEMDT 19,367,79. Community Right-To-Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**OSHA PEL:** TWA 5 ppm

**ACGIH TLV:** TWA 0.5 ppm; Suspected Human Carcinogen

**DFG MAK:** Human Carcinogen

**NIOSH REL:** (Vinyl Bromide) Lowest Detectable Level

**DOT CLASSIFICATION:** 2.1; Label: Flammable Gas

**SAFETY PROFILE:** Confirmed carcinogen with experimental carcinogenic, neoplastigenic, and tumorigenic data. Moderately toxic by ingestion. Mutation data reported. A very dangerous fire hazard when exposed to heat or flame. Can react violently with oxidizing materials. May polymerize in sunlight. To fight fire, use  $CO_2$ , dry chemical, or water spray. When heated to decomposition it emits toxic fumes of  $Br^-$ . See also BROMIDES and VINYL CHLORIDE.

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #08 or NIOSH: Vinyl Bromide, 1009.

**VMU000 CAS: 4223-11-4 HR: 2**

**VINYL-2-(BUTOXYETHYL) ETHER**mf: C<sub>8</sub>H<sub>16</sub>O<sub>2</sub> mw: 144.24**SYNS:** 2-BUTOXYETHYL VINYL ETHER □ 1-BUTOXY-2-(VINILOXY)ETHANE □ 1-(2-(ETHENYLOXY)ETHOXY)BUTANE**TOXICITY DATA with REFERENCE:**

skn-rbt 10 mg/24H open MLD AMIHBC 10,61,54

eye-rbt 20 mg open SEV AMIHBC 10,61,54

orl-rat LD50:3100 mg/kg AMIHBC 10,61,54

ihl-rat LCLo:2000 ppm/8H AMIHBC 10,61,54

skn-rbt LD50:3000 mg/kg AMIHBC 10,61,54

**SAFETY PROFILE:** Moderately toxic by ingestion and skin contact. Mildly toxic by inhalation. A skin and severe eye irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ETHERS.**VMZ000 CAS: 111-34-2 HR: 3  
VINYL BUTYL ETHER****DOT:** UN 2352mf: C<sub>6</sub>H<sub>12</sub>O mw: 100.18**PROP:** Liquid. Mp: -112.7°, bp: 94.2°, flash p: -9°, d: 0.7803 @ 20°/20°, vap d: 3.45.**SYNS:** BUTOXYETHENE □ BUTYL VINYL ETHER □ BUTYL VINYL ETHER (inhibited) □ 1-(ETHENYLOXY) BUTANE □ VINYL-n-BUTYL ETHER**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg open MLD UCDS\*\* 6/28/73

eye-rbt 500 mg open AMIHBC 10,61,54

orl-rat LD50:10 g/kg UCDS\*\* 6/28/72

ihl-uns LC50:60 g/m<sup>3</sup> GTPZAB 32(10),25,88ihl-mus LC50:62 g/m<sup>3</sup>/2H 85GMAT -,119,82

skn-rbt LD50:4240 mg/kg AMIHBC 10,61,54

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**DOT CLASSIFICATION:** 3; Label: Flammable Liquid**SAFETY PROFILE:** Mildly toxic by ingestion, skin contact, and inhalation. A skin and eye irritant. A very dangerous fire hazard when exposed to heat or flame. To fight fire, use foam, CO<sub>2</sub>, dry chemical, alcohol foam. Moderately explosive by spontaneous chemical reaction. Can react with oxidizing materials. When heated to decomposition it emits acrid smoke and irritating fumes. See also ETHERS.**VNA000 CAS: 6607-49-4 HR: 3  
VINYL 2-(BUTYLMERCAPTOETHYL) ETHER**mf: C<sub>8</sub>H<sub>16</sub>OS mw: 160.30**SYNS:** 2-(BUTYLMERCAPTO)ETHYL VINYL ETHER □ 2-(BUTYLTHIO)ETHYL VINYL ETHER**TOXICITY DATA with REFERENCE:**

skn-rbt 10 mg/24H open SEV AIHAAP 23,95,62

orl-rat LDLo:2830 mg/kg AIHAAP 23,95,62

skn-rbt LD50:10 mg/kg AIHAAP 23,95,62

**SAFETY PROFILE:** Poison by skin contact. Moderately toxic by ingestion. A severe skin irritant. Flammable when exposed to heat or flame. When heated to decomposition it emits toxic fumes of SO<sub>x</sub>. See also MERCAPTANS and ETHERS.**VNF000 CAS: 123-20-6 HR: 3****VINYL BUTYRATE****DOT:** UN 2838mf: C<sub>6</sub>H<sub>10</sub>O<sub>2</sub> mw: 114.16**PROP:** D: 0.9, vap d: 4.0, bp: 116°, flash p: 68°F (OC), lel: 1.4%, uel: 8.8%.**SYNS:** BUTYRIC ACID, VINYL ESTER □ VINYL BUTYRATE, INHIBITED (DOT) □ VINYLESTER KYSELINY MASELNE**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg open MLD UCDS\*\* 3/24/70

eye-rbt 500 mg open AMIHBC 4,119,51

orl-rat LD50:8530 mg/kg UCDS\*\* 3/24/70

ihl-rat LCLo:4000 ppm/4H AMIHBC 4,119,51

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid**SAFETY PROFILE:** Mildly toxic by inhalation and ingestion. A skin and eye irritant. A very dangerous fire hazard when exposed to heat, flame, or oxidizers. Explosive in the form of vapor when exposed to heat or flame. To fight fire, use alcohol foam, fog, mist, CO<sub>2</sub>. When heated to decomposition it emits acrid smoke and irritating fumes. See also ESTERS.**VNK000 CAS: 15805-73-9 HR: 3  
VINYL CARBAMATE**mf: C<sub>3</sub>H<sub>5</sub>NO<sub>2</sub> mw: 87.09**PROP:** White crystalline powder. Mp: 54–55°. Mod sol in water.**SYN:** CARBAMIC ACID, VINYL ESTER**TOXICITY DATA with REFERENCE:**

sce-hmn:lym 10 mmol/L MUREAV 89,75,81

sce-rat-ipr 25 mg/kg MUREAV 126,159,84

ipr-mus LDLo:125 mg/kg CNREA8 38,3793,78

**SAFETY PROFILE:** Poison by intraperitoneal route. Questionable carcinogen with experimental neoplastic data. Human mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also ESTERS and CARBAMATES.**VNK100 CAS: 1484-13-5 HR: 3  
N-VINYLCARBAZOLE**mf: C<sub>14</sub>H<sub>11</sub>N mw: 193.26**PROP:** White microcrystalline powder. Mp: 64–66°.**SYNS:** 9H-CARBAZOLE, 9-ETHENYL-(9CI) □ CARBAZOLE, 9-VINY- □ N-ETHENYLCARBAZOLE □ 9-ETHENYL-9H-CARBAZOLE □ VINYLCARBAZOLE □ 9-VINYLCARBAZOLE □ N-VINYLCARBAZOL**TOXICITY DATA with REFERENCE:**

orl-mus LD50:50 mg/kg 85JCAE -,824,86

orl-gpg LD50:100 mg/kg 85JCAE -,824,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Poison by ingestion. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.**VNK200 CAS: 25067-59-8 HR: 1  
9-VINYLCARBAZOLE HOMOPOLYMER**mf: (C<sub>14</sub>H<sub>11</sub>N)<sub>x</sub>**PROP:** Mp: 63–64°.**SYNS:** 9H-CARBAZOLE, 9-ETHENYL-, HOMOPOLYMER □ CARBAZOLE, 9-VINY-, POLYMER (8CI) □ DH 700 □ LUVICAN M

150 □ LUVICAN M 170 □ POLY(VINYLCARBAZOLE) □ POLY(N-VINYLCARBAZOLE) □ POLY(9-VINYLCARBAZOLE) □ PVK □ TUVICAL 210 □ N-VINYLCARBAZOLE HOMOPOLYMER □ VINYLCARBAZOLE POLYMER

#### TOXICITY DATA with REFERENCE:

orl-rat LD50: >5 g/kg ATDAEI 15(Suppl 1),S30,1996

**SAFETY PROFILE:** Low toxicity by ingestion. When heated to decomposition it emits acrid smoke and irritating vapors.

**VNP000 CAS: 75-01-4 HR: 3**  
**VINYL CHLORIDE**

**DOT:** UN 1086

mf: C<sub>2</sub>H<sub>3</sub>Cl mw: 62.50

**PROP:** Colorless liquid or gas (when inhibited); faintly sweet odor. Mp: -160°, bp: -13.9°, lel: 4%, uel: 22%, flash p: 17.6°F (COC), fp: -159.7°, d (liquid): 0.9195 @ 15°/4°, vap press: 2600 mm @ 25°, vap d: 2.15, autoign temp: 882°F. Sltly sol in water; sol in alc; very sol in ether.

**SYNS:** CHLORETHENE □ CHLORETHYLENE □ CHLOROETHENE □ CHLOROETHYLENE □ CHLORURE de VINYLE (FRENCH) □ CLORURO di VINILE (ITALIAN) □ ETHYLENE MONOCHLORIDE □ MONOCHLOROETHENE □ MONOCHLOROETHYLENE (DOT) □ RCRA WASTE NUMBER U043 □ TROVIDUR □ VC □ VCM □ VINILE (CLORURO di) (ITALIAN) □ VINYLCHLORID (GERMAN) □ VINYL CHLORIDE MONOMER □ VINYL C MONOMER □ VINYLE (CHLORURE de) (FRENCH) □ WINYLU CHLOREK (POLISH)

#### TOXICITY DATA with REFERENCE:

mma-sat 1 pph CBTOE2 1,159,85  
cyt-hmn:hla 10 mmol/L TXYAC 9,21,78  
ihl-rat TCLo:500 ppm/7H (female 6-15D post):TER TXAPA9 33,134,75  
ihl-man TCLo:200 ppm/14Y-I:CAR,LIV VAPHDQ 372,195,76  
ihl-rat TCLo:10,000 ppm/4H (12-18D preg):CAR,TER CSHCAL 4,119,77  
ihl-hmn TC:300 mg/m<sup>3</sup>/W-C:CAR,BLD GTPZAB 26(1),28,82  
orl-rat LD50:500 mg/kg DOWCC\*

**CONSENSUS REPORTS:** NTP 10th Report on Carcinogens. IARC Cancer Review: Group 1 IMEMDT 7,373,87; Animal Sufficient Evidence IMEMDT 19,377,79; IMEMDT 7,291,74; Human Limited Evidence IMEMDT 7,291,74; Human Sufficient Evidence IMEMDT 19,377,79. Community Right-To-Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**OSHA PEL:** Cancer Suspect Agent

**ACGIH TLV:** TWA 1 ppm; Confirmed Human Carcinogen

**DFG MAK:** DFG TRK: Confirmed Human Carcinogen

**NIOSH REL:** (Vinyl Chloride) Lowest Detectable Level

**DOT CLASSIFICATION:** 2.1; Label: Flammable Gas

**SAFETY PROFILE:** Confirmed human carcinogen producing liver and blood tumors. Moderately toxic by ingestion. Experimental teratogenic data. Experimental reproductive effects. Human reproductive effects by inhalation: changes in spermatogenesis. Human mutation data reported. A severe irritant to skin, eyes, and mucous membranes. Causes skin burns by rapid evaporation and

consequent freezing. In high concentration it acts as an anesthetic. Chronic exposure has produced liver injury. Circulatory and bone changes in the fingertips have been reported in workers handling unpolymerized materials.

A very dangerous fire hazard when exposed to heat, flame, or oxidizers. Large fires of this material are practically inextinguishable. A severe explosion hazard in the form of vapor when exposed to heat or flame. Long-term exposure to air may result in formation of peroxides that can initiate explosive polymerization of the chloride. Can react vigorously with oxidizing materials. Can explode on contact with oxides of nitrogen. Obtain instructions for its use from the supplier before storing or handling this material. To fight fire, stop flow of gas. When heated to decomposition it emits highly toxic fumes of Cl<sup>-</sup>. See also CHLORINATED HYDROCARBONS, ALIPHATIC.

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #04 or NIOSH: Vinyl Chloride, 1007.

**VNU000 CAS: 14861-06-4 HR: 3**  
**VINYL CROTONATE**

mf: C<sub>6</sub>H<sub>8</sub>O<sub>2</sub> mw: 112.14

**PROP:** Sltly sol in water. D: 0.9, vap d: 4.0, bp: 134°, flash p: 78°F (OC).

**SYNS:** 2-BUTENOIC ACID, ETHENYL ESTER □ CROTONIC ACID, VINYL ESTER □ VINYL 2-BUTENOATE

#### TOXICITY DATA with REFERENCE:

skn-rbt 500 mg open MLD UCDS\*\* 11/15/71  
eye-rbt 500 mg open AMIHBC 10,61,54  
orl-rat LD50:6500 mg/kg UCDS\*\* 11/15/71  
ihl-rat LCLo:4000 ppm/4H AMIHBC 10,61,54

**SAFETY PROFILE:** Mildly toxic by ingestion and inhalation. A skin and eye irritant. A very dangerous fire hazard when exposed to heat, flame or oxidizers. To fight fire, use alcohol foam. When heated to decomposition it emits acrid smoke and irritating fumes. Used as a cross-linking agent for acrylic and polyolefin plastics. See also ESTERS.

**VNZ000 CAS: 106-86-5 HR: 3**  
**VINYL CYCLOHEXANE MONOXIDE**

mf: C<sub>8</sub>H<sub>12</sub>O mw: 124.20

**PROP:** Liquid. D: 0.9598 @ 20°/20°, bp: 169°, flash p: 136°F, fp: -100°. Very sltly sol in water.

**SYNS:** 1,2-EPOXY-4-VINYLCYCLOHEXANE □ 4-VINYLCYCLOHEXENE-1,2-EPOXIDE □ VINYL CYCLOHEXENE MONOXIDE □ 4-VINYLCYCLOHEXENE MONOXIDE □ 1-VINYLCYCLOHEXANE-3,4-EPOXYCICLOHEXANE □ 3-VINYLCYCLOHEXANE-4,1,0-HEPTANE

#### TOXICITY DATA with REFERENCE:

skn-rbt 10 mg/24H open MLD AIHAAP 23,95,62  
eye-rbt 20 mg/24H MOD 85JCAE -775,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Experimental reproductive effects. A skin irritant. Flammable liquid when exposed to heat, sparks, or flame. To fight fire, use foam, alcohol foam, mist. When heated to decomposition it emits acrid smoke and irritating fumes.

**VNZ990 CAS: 2622-21-1 HR: 1**  
**1-VINYLCYCLOHEXENE**mf: C<sub>8</sub>H<sub>12</sub> mw: 108.20**SYNS:** CYCLOHEXENE, 1-VINYL- □ 1-ETHENYLCYCLOHEXENE**TOXICITY DATA with REFERENCE:**ihl-rat LC50:10,500 mg/m<sup>3</sup>/4H 85JCAE -,24,86**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Slightly toxic by inhalation. When heated to decomposition it emits acrid smoke and irritating vapors.**VOA000 CAS: 106-87-6 HR: 3**  
**VINYL CYCLOHEXENE DIOXIDE**mf: C<sub>8</sub>H<sub>12</sub>O<sub>2</sub> mw: 140.20**PROP:** Colorless liquid. D: 1.098 @ 20°/20°, bp: 227°, flash p: 230°F, mp: -55°. Very sol in water.**SYNS:** CHISSONOX 206 □ EP-206 □ 1,2-EPOXY-4-(EPOXY-ETHYL)CYCLOHEXANE □ 1-EPOXYETHYL-3,4-EPOXYCYCLOHEXANE □ 3-(EPOXYETHYL)-7-OXABICYCLO(4.1.0)HEPTANE □ 3-(1,2-EPOXYETHYL)-7-OXABICYCLO(4.1.0)HEPTANE □ 4-(EPOXYETHYL)-7-OXABICYCLO(4.1.0)HEPTANE □ 4-(1,2-EPOXYETHYL)-7-OXABICYCLO(4.1.0)HEPTANE □ ERLA-2270 □ ERLA-2271 □ 1-ETHYLENEOXY-3,4-EPOXYCYCLOHEXANE □ NCI-C60139 □ 3-OXIRANYL-7-OXABICYCLO(4.1.0)HEPTENE □ UCET TEXTILE FINISH 11-74 (OBS.) □ UNOX EPOXIDE 206 □ VINYL CYCLOHEXENE DIEPOXIDE □ 4-VINYLCYCLOHEXENE DIEPOXIDE □ 4-VINYL-1-CYCLOHEXENE DIEPOXIDE □ 4-VINYL-1,2-CYCLOHEXENE DIEPOXIDE □ 1-VINYL-3-CYCLOHEXENE DIOXIDE □ 4-VINYLCYCLO-HEXENE DIOXIDE □ 4-VINYL-1-CYCLOHEXENE DIOXIDE (MAK)**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg SEV SCCUR\* -,9,61

mmo-klp 1 mmol/L MUREAV 89,269,81

mmo-smc 25 mmol/L BSIBAC 56,1803,80

mrc-smc 25 mmol/L BSIBAC 56,1803,80

orl-rat LD50:2130 mg/kg SCCUR\* -,9,61

ihl-rat LC50:800 ppm/4H SCCUR\* -,9,61

skn-mus LDLo:3216 mg/kg NTPTR\* NTP-TR-362,89

skn-rbt LD50:620 mg/kg UCDS\*\* 8/29/75

**CONSENSUS REPORTS:** NTP 10th Report on Carcinogens. IARC Cancer Review: Group 3 IMEMDT 7,56,87; Animal Sufficient Evidence IMEMDT 11,141,76. Reported in EPA TSCA Inventory.**OSHA PEL:** TWA 10 ppm (skin)**ACGIH TLV:** TWA 0.1 ppm; Animal Carcinogen**DFG MAK:** Animal Carcinogen, Suspected Human Carcinogen**SAFETY PROFILE:** Confirmed carcinogen with experimental carcinogenic and tumorigenic data. Poison by unspecified route. Moderately toxic by ingestion and skin contact. Mildly toxic by inhalation. Experimental reproductive effects. Mutation data reported. A severe skin irritant. Combustible when exposed to heat or flame. To fight fire, use water, foam, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes.**VOA550 CAS: 55520-67-7 HR: D****5-VINYL-DEOXYURIDINE**mf: C<sub>11</sub>H<sub>14</sub>N<sub>2</sub>O<sub>5</sub> mw: 254.27**SYN:** 2'-DEOXY-5-VINYLRIDINE**TOXICITY DATA with REFERENCE:**

sce-hmn:lym 5 mg/L BMJOAE 283,817,81

sce-hmn:lng 50 µg/L MUREAV 117,317,83

**SAFETY PROFILE:** Human mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.**VOF000 CAS: 3622-76-2 HR: 2**  
**VINYL-2-(N,N-DIMETHYLAMINO)ETHYL ETHER**mf: C<sub>6</sub>H<sub>13</sub>NO mw: 115.20**SYN:** 2-(N,N-DIMETHYLAMINO)ETHYL VINYL ETHER**TOXICITY DATA with REFERENCE:**

skn-rbt 100 mg/24H MOD 85JCAE -,720,86

eye-rbt 2 mg/24H SEV 85JCAE -,720,86

ihl-rat LCLo:500 ppm/4H TXAPA9 28,313,74

**SAFETY PROFILE:** Moderately toxic by inhalation and skin contact. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. See also ETHERS.**VOF300 CAS: 14150-71-1 HR: 3**  
**VINYLENE BISTHIOCYANATE**mf: C<sub>4</sub>H<sub>2</sub>N<sub>2</sub>S<sub>2</sub> mw: 142.20**SYNS:** THIOCYANIC ACID, 1,2-ETHANEDIYL ESTER □ THIOCYANIC ACID, VINYLENE ESTER (6CI,7CI,8CI)**TOXICITY DATA with REFERENCE:**

orl-rat LD50:77 mg/kg DIMCAL 12,404,71

**SAFETY PROFILE:** A poison by ingestion. When heated to decomposition it emits toxic vapors of NO<sub>x</sub> and SO<sub>x</sub>.**VOK000 CAS: 872-36-6 HR: 2**  
**VINYLENE CARBONATE**mf: C<sub>3</sub>H<sub>2</sub>O<sub>3</sub> mw: 86.05**PROP:** A liquid. D: 1.35 @ 25°/4°, mp: 22°, bp: 162°.**SYNS:** CARBONIC ACID, cyclic VINYLENE ESTER □ 1,3-DIOXOL-4-EN-2-ONE □ 1,3-DIOXOL-2-ONE**SAFETY PROFILE:** Questionable carcinogen with experimental neoplastigenic data. When heated to decomposition it emits acrid smoke and irritating fumes.**VOP000 CAS: 109-93-3 HR: 3**  
**VINYL ETHER****DOT:** UN 1167mf: C<sub>4</sub>H<sub>6</sub>O mw: 70.10(H<sub>2</sub>C=CH)<sub>2</sub>O**PROP:** Colorless liquid; very volatile with characteristic odor. Bp: 39°, ULC: 100, lel: 1.7%, uel: 27%, flash p: <-22°F (CC), d: 0.774 @ 20°/20°, autoign temp: 680°F, vap d: 2.41. Very sltly sol in water; misc in alc, ether.**SYNS:** DIVINYL ETHER (DOT) □ DIVINYL ETHER, inhibited (DOT) □ DIVINYL OXIDE □ ETHENYLOXYETHENE □ 1,1'-OXYBISETHENE □ VINESTHENE □ VINESTHESIN □ VINETHEN □ VINETHENE □ VINETHER □ VINIDYL □ VINYDAN**TOXICITY DATA with REFERENCE:**

mmo-sat 1 pph BIANAD 51,417,79

mma-sat 1 pph BJANAD 51,417,79  
 sce-ham:ovr 19,900 ppm ANESAV 50,426,79  
 ihl-mus LC50:329 g/m<sup>3</sup>/15M ANESAV 11,455,50

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Mildly toxic by inhalation. Mutation data reported. Prolonged exposure causes liver injury. A very dangerous fire hazard when exposed to heat or flame; can react vigorously with oxidizing materials. A severe explosion hazard in the form of vapor when exposed to heat or flame. Forms peroxides when exposed to air or oxygen. Hypergolic reaction with concentrated nitric acid. To fight fire, use CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes. Used as an inhalation anesthetic. See also ETHERS.

**VOU000 CAS: 94-04-2 HR: 2**  
**VINYL-2-ETHYLHEXOATE**

mf: C<sub>10</sub>H<sub>18</sub>O<sub>2</sub> mw: 170.28

**PROP:** Liquid. Flash p: 165°F (OC), d: 0.8751, bp: 185.2°, fp: -90°, vap d: 6.0. Insol in water.

**SYNS:** 2-ETHYLHEXANOIC ACID, VINYL ESTER □ 2-ETHYLHEXOIC ACID, VINYL ESTER

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg open SEV UCDS\*\* 4/25/58

eye-rbt 500 mg open AMIHBC 10,61,54

orl-rat LD50:4290 mg/kg AMIHBC 10,61,54

**SAFETY PROFILE:** Mildly toxic by ingestion. An eye and severe skin irritant. Combustible when exposed to heat, flame, or oxidizers. To fight fire, use foam, alcohol foam, mist. When heated to decomposition it emits acrid smoke and irritating fumes. See also ESTERS.

**VPA000 CAS: 75-02-5 HR: 3**  
**VINYL FLUORIDE**

**DOT:** UN 1860

mf: CH<sub>2</sub>:CHF mw: 46

**PROP:** Colorless gas. Mp: -160.5°, bp: -51°, fp: -160.5°, lel: 2.6%, uel: 21.7%. Insol in water; sol in alc, ether.

**SYNS:** ETHENE, FLUORO- □ ETHYLENE, FLUORO-(8CI) □

FLUOROETHENE □ FLUOROETHYLENE □

MONOFLUOROETHYLENE □ VINYL FLUORIDE, inhibited (DOT)

**TOXICITY DATA with REFERENCE:**

otr-rat-ihl ARTODN 47,71,81

mnt-mus-ihl EMMUEG 19(Suppl 20),5,92

**CONSENSUS REPORTS:** NTP 10th Report on Carcinogens. Reported in EPA TSCA Inventory.

**ACGIH TLV:** TWA 1 ppm; Suspected Human Carcinogen

**NIOSH REL:** (Vinyl Chloride) TWA 1 ppm; CL 5

ppm/15M

**DOT CLASSIFICATION:** 2.1; Label: Flammable Gas

**SAFETY PROFILE:** Confirmed carcinogen. A poison. Mutation data reported. A very dangerous fire hazard. To fight fire, stop flow of gas. When heated to decomposition it emits toxic fumes of F<sup>-</sup>. See also FLUORIDES.

**VPF000 CAS: 692-45-5 HR: 2**  
**VINYL FORMATE**

mf: C<sub>3</sub>H<sub>4</sub>O<sub>2</sub> mw: 72.07

**PROP:** Flash p: <32°F.

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 mg open MLD UCDS\*\* 11/15/71

eye-rbt 1 mg SEV UCDS\*\* 11/15/71

orl-rat LD50:2820 mg/kg UCDS\*\* 11/15/71

**SAFETY PROFILE:** Moderately toxic by ingestion. A severe eye and mild skin irritant. A very dangerous fire hazard when exposed to heat or flame. When heated to decomposition it emits acrid smoke and irritating fumes. See also ACRYLIC ACID.

**VPF100 CAS: 7786-61-0 HR: D**  
**4-VINYLGUAIACOL**

mf: C<sub>9</sub>H<sub>10</sub>O<sub>2</sub> mw: 150.19

**PROP:** Peppery spice flavoring.

**SYNS:** 4-ETHENYL-2-METHOXYPHENOL □ 4-HYDROXY-3-METHOXYSTYRENE □ 2-METHOXY-4-VINYLPHENOL □ PHENOL, 4-ETHENYL-2-METHOXY-(9CI) □ PHENOL, 2-METHOXY-4-VINYLS- □ p-VINYLGUAIACOL

**TOXICITY DATA with REFERENCE:**

sce-hmn:lyms 500 µmol/L MUREAV 206,17,88

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Experimental reproductive effects. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating vapors.

**VPF150 CAS: 3763-39-1 HR: 2**  
**VINYLHEPTACYCLOTETRASILOXANE**

mf: C<sub>9</sub>H<sub>24</sub>O<sub>4</sub>Si<sub>4</sub> mw: 308.69

**SYNS:** CYCLOTETRASILOXANE, ETHENYLHEPTAMETHYL- □ HEPTAMETHYLVINYLCYCLOTETRASILOXANE □

MONOVINYLHEPTAMETHYLCYCLOTETRASILOXANE □ 1-VINYLS-1,3,3,5,5,7,7-HEPTAMETHYLCYCLOTETRASILOXANE

**TOXICITY DATA with REFERENCE:**

skn-rbt 500 µL/24H SEV IJTOFN 19,348,2000

orl-rat LD50:>4810 mg/kg IJTOFN 19,348,2000

**SAFETY PROFILE:** Low toxicity by ingestion. A severe skin irritant. When heated to decomposition it emits acrid smoke and irritating vapors.

**VPF200 CAS: 593-92-0 HR: 2**  
**VINYLIDENE BROMIDE**

mf: C<sub>2</sub>H<sub>2</sub>Br<sub>2</sub> mw: 185.86

**SYNS:** 1,1-DIBROMOETHENE □ GEM-DIBROMOETHYLENE □

1,1-DIBROMOETHYLENE □ ETHENE, 1,1-DIBROMO- □

ETHYLENE, 1,1-DIBROMO-(6CI,7CI,8CI)

**TOXICITY DATA with REFERENCE:**

ihl-rat LCLo:471 ppm/4H AEHLAU 30,26,75

**SAFETY PROFILE:** Moderately toxic by inhalation. When heated to decomposition it emits toxic vapors of Br<sup>-</sup>.

**VPK000 CAS: 75-35-4 HR: 3**  
**VINYLIDENE CHLORIDE**

**DOT:** UN 1303

mf: C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub> mw: 96.94

**PROP:** Colorless, volatile liquid. Bp: 31.6°, lel: 7.3%, uel: 16.0%, fp: -122°, flash p: 0°F (OC), d: 1.213 @ 20°/4°, autoign temp: 1058°F.

**SYNS:** CHLORURE de VINYLIDENE (FRENCH) □ 1-1-DCE □ 1,1-DICHLOROETHENE □ 1,1-DICHLOROETHYLENE □ NCI-C54262 □ RCRA WASTE NUMBER U078 □ SCONATEX □ VDC □ VINYLIDENE CHLORIDE (II) □ VINYLIDENE DICHLORIDE □ VINYLIDINE CHLORIDE

#### TOXICITY DATA with REFERENCE:

mmo-sat 5 pph MUREAV 57,141,78  
 dns-mus-ihl 50 ppm TXAPA9 53,357,80  
 ihl-hmn TClO:25 ppm:CNS,LIV,KID CHINAG (11),463,76  
 orl-rat LD50:200 mg/kg DCTODJ 1,63,77  
 ihl-rat LC50:6350 ppm/4H TXAPA9 18,168,71  
 orl-mus LD50:194 mg/kg BJCAAI 37,411,78  
 orl-dog LDLo:5750 mg/kg QJPPAL 7,205,34  
 ivn-dog LDLo:225 mg/kg QJPPAL 7,205,34  
 scu-rbt LDLo:3700 mg/kg QJPPAL 7,205,34

#### CONSENSUS REPORTS: IARC Cancer Review:

Group 3 IMEMDT 7,376,87; Human Inadequate Evidence IMEMDT 39,195,86, IMEMDT 19,439,79; Animal Limited Evidence IMEMDT 39,195,86; Animal Sufficient Evidence IMEMDT 19,439,79. EPA Genetic Toxicology Program. Reported in EPA TSCA Inventory. Community Right-To-Know List.

**OSHA PEL:** TWA 1 ppm

**ACGIH TLV:** TWA 5 ppm; Not Classifiable as a Human Carcinogen

**DFG MAK:** 2 ppm (8 mg/m<sup>3</sup>); Confirmed Animal Carcinogen with Unknown Relevance to Humans

**NIOSH REL:** (Vinyl Halides) TWA reduce to lowest detectable level

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Suspected carcinogen with experimental carcinogenic, neoplastigenic, tumorigenic, and teratogenic data. Poison by inhalation, ingestion, and intravenous routes. Moderately toxic by subcutaneous route. Human systemic effects by inhalation: general anesthesia, liver and kidney changes. Experimental reproductive effects. Mutation data reported. See also VINYL CHLORIDE. A very dangerous fire hazard when exposed to heat or flame. Moderately explosive in the form of gas when exposed to heat or flame. It forms explosive peroxides upon exposure to air. Potentially explosive reaction with chlorotrifluoroethylene at 180°C. Reaction with ozone forms dangerous products. Explosive reaction with perchloryl fluoride when heated above 100°C. Also can explode spontaneously. Reacts violently with chlorosulfonic acid, HNO<sub>3</sub>, oleum. Can react vigorously with oxidizing materials. To fight fire, use alcohol foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits toxic fumes of Cl<sup>-</sup>. See also CHLORINATED HYDROCARBONS, ALIPHATIC.

**ANALYTICAL METHOD:** For occupational chemical analysis use OSHA: #19 or NIOSH: Vinylidene Chloride, 1015.

**VPK333 CAS: 9011-09-0 HR: 2**  
**VINYLIDENE CHLORIDE-BUTYL ACRYLATE**

#### COPOLYMER

mf: (C<sub>7</sub>H<sub>12</sub>O<sub>2</sub>•C<sub>2</sub>H<sub>2</sub>Cl)<sub>x</sub>

**SYNS:** ACRAMOLL W □ BUTYL ACRYLATE-1,1-DICHLORO-ETHYLENE COPOLYMER □ BUTYL ACRYLATE-VINYLIDINE CHLORIDE COPOLYMER □ BUTYL ACRYLATE-VINYLIDINE CHLORIDE POLYMER □ DARAN 212 □ DARAN X 66919M □ E 518 □ ETHENE, 1,1-DICHLORO-, POLYMER WITH BUTYL 2-PROPENOATE □ 2-PROPENOIC ACID, BUTYL ESTER, POLYMER WITH 1,1-DICHLOROETHENE

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:>5 g/kg OEMEEM 54,376,1997  
 itr-gpg LD50:467 mg/kg OEMEEM 54,376,1997

**SAFETY PROFILE:** Moderately toxic by intratracheal route. Low toxicity by ingestion. When heated to decomposition it emits toxic vapors of Cl<sup>-</sup>.

**VPP000 CAS: 75-38-7 HR: 3**  
**VINYLIDENE FLUORIDE**

**DOT:** UN 1959

mf: C<sub>2</sub>H<sub>2</sub>F<sub>2</sub> mw: 64.04

**PROP:** Odorless, colorless gas. Bp: <-70°, fp: -144°, lel: 5.5%, uel: 21.3%.

**SYNS:** 1,1-DIFLUOROETHENE □ 1,1-DIFLUOROETHYLENE (DOT, MAK) □ ETHENE, 1,1-DIFLUORO- □ HALOCARBON 1132A □ NCI-C60208 □ R1132a (DOT) □ VDF □ VINYLIDENE DIFLUORIDE

#### TOXICITY DATA with REFERENCE:

mma-sat 50 pph/24H ARTODN 41,249,79  
 ihl-rat LCLo:128,000 ppm/4H JOCMA7 4,262,62

**CONSENSUS REPORTS:** IARC Cancer Review: Group 3 IMEMDT 7,56,87; Animal Inadequate Evidence IMEMDT 39,227,86. Reported in EPA TSCA Inventory.

**ACGIH TLV:** TWA 500 ppm; Not Classifiable as a Human Carcinogen

**DFG MAK:** Confirmed Animal Carcinogen with Unknown Relevance to Humans

**DOT CLASSIFICATION:** 2.1; Label: Flammable Gas

**NIOSH REL:** (Vinyl Halides) TWA reduce to lowest detectable level

**SAFETY PROFILE:** Suspected carcinogen with experimental neoplastigenic data. Mildly toxic by inhalation. Mutation data reported. A very dangerous fire hazard when exposed to heat, flame, or oxidizers. Explosive in the form of vapor when exposed to heat or flame. Violent reaction with hydrogen chloride when heated under pressure. To fight fire, stop flow of gas. When heated to decomposition it emits toxic fumes of F<sup>-</sup>. See also FLUORIDES.

**VPP100 CAS: 25232-42-2 HR: 3**  
**1-VINYLMIDAZOLE HOMOPOLYMER**

mf: (C<sub>5</sub>H<sub>6</sub>N<sub>2</sub>)<sub>x</sub>

**SYNS:** 1H-IMIDAZOLE, 1-ETHENYL-, HOMOPOLYMER □ IMIDAZOLE, 1-VINYL-, POLYMERS □ LUFIXAN □ POLY(VINYLMIDAZOLE) □ POLY(N-VINYLMIDAZOLE) □ POLY(1-VINYLMIDAZOLE) □ N-VINYLMIDAZOLE HOMOPOLYMER □ N-VINYLMIDAZOLE POLYMER

#### TOXICITY DATA with REFERENCE:

ivn-mus LD50:180 mg/kg CSLNX\* NX#00056

**SAFETY PROFILE:** A poison by intravenous route. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**VPU000 CAS: 917-57-7 HR: 3**  
**VINYLLITHIUM**

mf: C<sub>2</sub>H<sub>3</sub>Li mw: 33.99

**PROP:** A solid.

**SAFETY PROFILE:** Ignites spontaneously and burns violently in air. See also LITHIUM COMPOUNDS and ORGANOMETALS.

**VPZ000 CAS: 1663-35-0 HR: 2**  
**VINYL-2-METHOXYETHYL ETHER**

mf: C<sub>5</sub>H<sub>10</sub>O<sub>2</sub> mw: 102.15

**PROP:** Liquid. Mp: -82.8°, bp: 108.8°, flash p: 65°F (OC), d: 0.8967, vap d: 3.53.

**SYNS:** 2-METHOXYETHYL VINYL ETHER □ 1-METHOXY-2-(VINILOXY)ETHANE

**TOXICITY DATA with REFERENCE:**

eye-rbt 500 mg open AMIHBC 10,61,54  
 orl-rat LD50:3900 mg/kg AMIHBC 10,61,54  
 ihl-rat LCLo:8000 ppm/4H AMIHBC 10,61,54  
 skn-rbt LD50:7130 mg/kg AMIHBC 10,61,54

**SAFETY PROFILE:** Moderately toxic by ingestion. Mildly toxic by inhalation and skin contact. An eye irritant. May form dangerous peroxides in storage. A very dangerous fire hazard when exposed to heat or flame; can react with oxidizing materials. To fight fire, use foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes. See also ETHERS.

**VPZ333 CAS: 940-14-7 HR: D**  
**VINYL p-NITROPHENYL ETHER**

mf: C<sub>8</sub>H<sub>7</sub>NO<sub>3</sub> mw: 165.16

**SYNS:** BENZENE, 1-(ETHENYLOXY)-4-NITRO- □ ETHER, p-NITROPHENYL VINYL □ p-NITROPHENYL VINYL ETHER □ 4-NITROPHENYL VINYL ETHER

**TOXICITY DATA with REFERENCE:**

mic-sat 12 µLg/plate CRNGDP 18,431,1997

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

**y000 CAS: 3048-64-4 HR: 1**  
**5-VINYL-2-NORBORNENE**

mf: C<sub>9</sub>H<sub>12</sub> mw: 120.21

**PROP:** Bp: 137°.

**SYNS:** 5-ETHENYLBI-CYCLO(2.2.1)HEPT-2-ENE □ VINYL NORBORNENE □ 2-VINYLNORBORNENE □ 5-VINYLNORBORNENE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:4365 mg/kg AIHAAP 30,470,6  
 ihl-rat LCLo:4000 ppm/4H AIHAAP 30,470,69  
 ihl-mus LC50:17,700 mg/m<sup>3</sup>/2H GTPZAB 18(10),52,74  
 skn-rbt LD50:13,372 mg/kg AIHAAP 30,470,69

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Mildly toxic by ingestion, inhalation, and skin contact. When heated to decomposition it emits acrid smoke and irritating fumes.

**VQA100 CAS: 1072-93-1 HR: 2**  
**(R)-5-VINYL-2-OXAZOLIDINETHIONE**

mf: C<sub>5</sub>H<sub>7</sub>NOS mw: 129.19

**PROP:** A solid. Mp: 47-48°.

**SYNS:** BA 51-090278 □ D-GOITRIN □ (R)-GOITRIN □ 2-OXAZOLIDINETHIONE, 5-ETHENYL-, (R)-(9CI) □ 2-OXAZOLIDINETHIONE, 5-VINYL-, (R)-

**TOXICITY DATA with REFERENCE:**

uns-mus LD50:1260 mg/kg JAFCAU 17,483,69

**SAFETY PROFILE:** Moderately toxic by unspecified route. An experimental teratogen. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>.

**VQA150 CAS: 1464-69-3 HR: 2**  
**2-(VINILOXY)ETHYL METHACRYLATE**

mf: C<sub>8</sub>H<sub>12</sub>O<sub>3</sub> mw: 156.20

**SYNS:** 2-(ETHENYLOXY)ETHYL 2-METHYL-2-PROPENOATE □ METHACRYLIC ACID, 2-(VINILOXY)ETHYL ESTER □ 2-PROPENOIC ACID, 2-METHYL-, 2-(ETHENYLOXY)ETHYL ESTER (9CI)

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:5940 mg/kg GTPZAB 31(2),45,87  
 orl-mus LD50:3830 mg/kg GTPZAB 31(2),45,87  
 ihl-mus LC50:2115 mg/m<sup>3</sup> GTPZAB 31(2),45,87

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion and inhalation. When heated to decomposition it emits acrid smoke and irritating vapors.

**VQA200 CAS: 2628-17-3 HR: 3**  
**4-VINYLPHENOL**

mf: C<sub>8</sub>H<sub>8</sub>O mw: 120.16

**PROP:** Needles by sublimation. Mp: 68-69°.

**SYNS:** p-HYDROXYSTYRENE □ 4-HYDROXYSTYRENE □ PHENOL, 4-ETHENYL- (9CI) □ PHENOL, p-VINYL- □ p-VINYLPHENOL

**TOXICITY DATA with REFERENCE:**

eye-rbt 100 mg SEV EPASR\* 8EHQ-1285-0579S  
 skn-rbt LDLo:200 mg/kg EPASR\* 8EHQ-1285-0579S  
 ocu-rbt LDLo:50 mg/kg EPASR\* 8EHQ-1285-0579S

**SAFETY PROFILE:** Poison by skin and eye contact. Severe eye irritant. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.

**VQA400 CAS: 36885-49-1 HR: 2**  
**VINYL PHOSPHATE**

mf: C<sub>2</sub>H<sub>5</sub>O<sub>4</sub>P mw: 124.04

**PROP:** Very unstable oil, usually isolated as the di-lithium salt. Sol in Et<sub>2</sub>O and dioxane; insol in ligroin.

**SYNS:** MONOVINYL PHOSPHATE □ VINYL DIHYDROGEN PHOSPHATE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:2550 mg/kg GNAMAP 17,33,78

## 3680 VQF000 VINYLPHOSPHONIC ACID BIS(2-CHLORO-ETHYL)

orl-ckn LD50:1500 mg/kg TIVSAI 58,88,77

orl-brd LD50:823 mg/kg TIVSAI 58,88,77

**SAFETY PROFILE:** Moderately toxic by ingestion.

When heated to decomposition it emits toxic fumes of PO<sub>x</sub>.

### VQF000 CAS: 115-98-0 HR: 2 VINYLPHOSPHONIC ACID BIS(2-CHLORO-ETHYL) ESTER

mf: C<sub>6</sub>H<sub>11</sub>Cl<sub>2</sub>O<sub>3</sub>P mw: 233.04

**SYN:** BIS-(2-CHLOROETHYL)VINYLFOSFONAT (CZECH)

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:990 mg/kg MarJV# 29MAR77

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion.

When heated to decomposition it emits very toxic fumes of PO<sub>x</sub> and Cl<sup>-</sup>. See also ESTERS.

### VQK000 CAS: 105-38-4 HR: 3 VINYL PROPIONATE

mf: C<sub>5</sub>H<sub>8</sub>O<sub>2</sub> mw: 100.13

**PROP:** Liquid. D: 0.9173 @ 20°/20°, bp: 95°, fp: -81.1°, flash p: 34°F (OC), vap d: 3.3. Almost insol in water.

**SYN:** PROPANOIC ACID, ETHENYL ESTER

#### TOXICITY DATA with REFERENCE:

skn-rat 500 mg MLD AMIHBC 2,582,50

skn-rbt 10 mg/24H open MLD AIHAAP 23,95,62

eye-rbt 10 mg MLD AMIHBC 2,582,50

sce-hmn:lym 400 µmol/L MUREAV 279,75,92

orl-rat LD50:4760 mg/kg AIHAAP 23,95,62

ihl-rat LCLo:4000 ppm/4H AIHAAP 23,95,62

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Mildly toxic by ingestion and inhalation. A skin and eye irritant. Mutation data reported. A very dangerous fire hazard when exposed to heat or flame. To fight fire, use alcohol foam, mist, fog. When heated to decomposition it emits acrid smoke and irritating fumes. See also ESTERS.

### VQK550 CAS: 1337-81-1 HR: 3 VINYL PYRIDINE

mf: C<sub>7</sub>H<sub>7</sub>N mw: 105.14

**SAFETY PROFILE:** Spontaneous polymerization may be explosive. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

### VQK560 CAS: 100-69-6 HR: 3 2-VINYLPYRIDINE

mf: C<sub>7</sub>H<sub>7</sub>N mw: 105.15

**SYNS:** 2-ETHENYLPYRIDINE □ PYRIDINE, 2-ETHENYL-(9CI) □ PYRIDINE, 2-VINY- □ α-VINYLPYRIDINE

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:100 mg/kg 85JCAE -,845,86

ihl-rat LC50:610 mg/m<sup>3</sup> GISAAA 57(9-10),64,92

orl-mus LD50:420 mg/kg GTPZAB 10(3),9,66

ihl-mus LC50:460 mg/m<sup>3</sup> GTPZAB 10(3),9,66

skn-gpg LDLo:500 mg/kg 85JCAE -,845,86

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** A poison by ingestion. Moderately toxic by inhalation and skin contact. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

### VQK590 CAS: 100-43-6 HR: 3 4-VINYLPYRIDINE

mf: C<sub>7</sub>H<sub>7</sub>N mw: 105.15

**PROP:** Bp: 121°, d: 0.9888. Flash pt: 132° F.

**SYNS:** 4-ETHENYLPYRIDINE □ PYRIDINE, 4-VINY-

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:100 mg/kg 85JCAE -,845,86

ihl-rat LC50:170 mg/m<sup>3</sup> GISAAA 57(9-10),64,92

orl-mus LD50:161 mg/kg GTPZAB 28(6),55,84

ihl-mus LC50:380 mg/m<sup>3</sup>/2H GTPZAB 28(6),55,84

skn-gpg LDLo:500 mg/kg 85JCAE -,845,86

orl-brd LD50:100 mg/kg AECTCV 12,355,83

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by ingestion. Slightly toxic by inhalation. A combustible liquid. When heated to decomposition it emits toxic vapors of NO<sub>x</sub>.

### VQK595 CAS: 25086-29-7 HR: 1 VINYLPIRROLIDINONE-STYRENE POLYMER

mf: (C<sub>8</sub>H<sub>8</sub>•C<sub>6</sub>H<sub>9</sub>NO)<sub>x</sub>

**PROP:** Film former/opacifier.

**SYNS:** 1-ETHENYL-2-PYRROLIDINONE POLYMER with ETHENYLBENZENE □ POLECTRON 430 □ POLECTRON 450 □ PORAPAK B □ 2-PYRROLIDINONE, 1-ETHENYL-, POLYMER with ETHENYLBENZENE □ 2-PYRROLIDINONE, 1-VINY-, POLYMER with STYRENE (8CI) □ STYRENE-VINYLPYRROLIDINONE POLYMER □ STYRENE-VINYLPYRROLIDONE COPOLYMER □ STYRENE-N-VINYLPYRROLIDONE POLYMER □ 1-VINY-2-PYRROLIDINONE POLYMER with STYRENE

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:>40 g/kg FMCHA2 -,C11,91

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Low toxicity by ingestion. When heated to decomposition it emits toxic vapors of NO<sub>x</sub> and Cl<sup>-</sup>.

### VQK600 CAS: 2097-18-9 HR: 2 1-VINYLSILATRANE

mf: C<sub>8</sub>H<sub>15</sub>NO<sub>3</sub>Si mw: 201.33

**SYNS:** 1-ETHENYLSILATRANE □ 2,8,9-TRIOXA-5-AZA-1-SILABICYCLO(3.3.3)UNDECANE, 1-ETHENYL- □ 2,8,9-TRIOXA-5-AZA-1-SILABICYCLO(3.3.3)UNDECANE, 1-VINY- □ VINYLILATRAN □ VINYLILATRANE □ 1-VINY-2,8,9-TRIOXA-5-AZA-1-SILABICYCLO(3.3.3)UNDECANE

#### TOXICITY DATA with REFERENCE:

orl-mus LD50:1750 mg/kg PHARAT 26,224,70

ipr-mus LD50:1100 mg/kg PHARAT 26,224,70

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion and intraperitoneal routes. When heated to decomposition it emits toxic vapors of  $\text{NO}_x$ .

**VQK650 CAS: 25013-15-4 HR: 3**

### VINYL TOLUENE

**DOT:** UN 2618

mf:  $\text{C}_9\text{H}_{10}$  mw: 118.19

**PROP:** Clear colorless liquid. Mp: 75 °C, bp: 170°. Sol in water: <1 mg/mL @ 24.5°. IDLH 400 ppm.

**SYNS:** METHYLSTYRENE □ NCI-C56406 □ TOLUENE, VINYL (mixed isomers) □ VINYL TOLUENE, inhibited mixed isomers (DOT) □ 3- and 4-VINYL TOLUENE (mixed isomers)

### TOXICITY DATA with REFERENCE:

skn-rbt 100% MOD AMIHAB 14,387,56

eye-rbt 90 mg MLD AMIHAB 14,387,56

ihl-hmn TCLO:400 ppm:NOSE,EYE AMIHAB 14,387,56

orl-rat LD50:2255 mg/kg JACTDZ 1,77,90

ipr-rat LD50:2324 mg/kg JACTDZ 1,77,90

orl-rat LD50:4 g/kg AMIHAB 14,387,56

orl-mus LD50:3160 mg/kg HYSAAV 34(7-9),334,69

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**OSHA PEL:** TWA 100 ppm

**ACGIH TLV:** TWA 50 ppm; STEL 100 ppm; Not Classifiable as a Human Carcinogen

**DFG MAK:** 100 ppm (490 mg/m<sup>3</sup>)

**DOT CLASSIFICATION:** 3; Label: Flammable Liquid

**SAFETY PROFILE:** Moderately toxic by ingestion and inhalation. An experimental teratogen. Human systemic effects by inhalation: eye and olfactory effects.

Experimental reproductive effects. Mutation data reported. A skin and eye irritant. Flammable when exposed to heat or flame; can react vigorously with oxidizing materials. When heated to decomposition it emits acrid smoke and irritating fumes.

**ANALYTICAL METHOD:** For occupational chemical analysis use NIOSH: Hydrocarbons, Aromatic, 1501.

**VQK660 CAS: 611-15-4 HR: D**

### 2-VINYLTOLUENE

mf:  $\text{C}_9\text{H}_{10}$  mw: 118.19

**PROP:** Mp: -69°, bp: 170°.

**SYNS:** BENZENE, 1-ETHENYL-2-METHYL- (9CI) □ 1-ETHENYL-2-METHYLBENZENE □ o-METHYLSTYRENE □ 2-METHYLSTYRENE □ 1-METHYL-2-VINYLBENZENE □ STYRENE, o-METHYL- □ o-VINYLTOLUENE

### TOXICITY DATA with REFERENCE:

sce-hmn-lym 1 mmol/L MUREAV 116,379,83

**CONSENSUS REPORTS:** IARC Cancer Review: Group 3 IMEMDT 60,373,94; Human Inadequate Evidence IMEMDT 60,373,94; Animal lack of carcinogenicity IMEMDT 60,373,94.

**SAFETY PROFILE:** Mutation data reported.

Questionable carcinogen. When heated to decomposition it emits acrid smoke and irritating vapors.

**VQK670 CAS: 100-80-1 HR: D**

### 3-VINYLTOLUENE

mf:  $\text{C}_9\text{H}_{10}$  mw: 118.19

**PROP:** Liquid with characteristic odor.

**SYNS:** BENZENE, 1-ETHENYL-3-METHYL- (9CI) □ 1-ETHENYL-3-METHYLBENZENE □ m-METHYLSTYRENE □ 3-METHYLSTYRENE □ 1-METHYL-3-VINYLBENZENE □ STYRENE, m-METHYL- □ m-VINYLTOLUENE

### TOXICITY DATA with REFERENCE:

sce-hmn-lym 1 mmol/L MUREAV 116,379,83

**CONSENSUS REPORTS:** IARC Cancer Review:

Group 3 IMEMDT 60,373,94; Human Inadequate Evidence IMEMDT 60,373,94; Animal Sufficient Evidence IMEMDT 60,373,94. Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Mutation data reported. No evidence of carcinogenic activity. When heated to decomposition it emits acrid smoke and irritating vapors.

**VQK700 CAS: 622-97-9 HR: 3**

### 4-VINYLTOLUENE

mf:  $\text{C}_9\text{H}_{10}$  mw: 118.19

**PROP:** Colorless liquid with aromatic odor. Mp: -34°, bp: 170°, d: 0.892 @ 25°. Insol in water.

**SYNS:** BENZENE, 1-ETHENYL-4-METHYL- (9CI) □ 1-ETHENYL-4-METHYLBENZENE □ p-METHYLSTYRENE □ STYRENE, p-METHYL- □ 1-p-TOLYLETHENE □ p-VINYLTOLUENE

### TOXICITY DATA with REFERENCE:

cyt-hmn-lyms 330 μmol/L CRNGDP 2,237,81

sce-hmn-lyms 330 μmol/L CRNGDP 2,237,81

orl-rat LD50:2255 mg/kg JACTDZ 1,77,90

ipr-rat LD50:2324 mg/kg JACTDZ 1,77,90

orl-mus LD50:1072 mg/kg JACTDZ 1,76,90

ipr-mus LD50:581 mg/kg JACTDZ 1,76,90

ivn-mus LD50:280 mg/kg JACTDZ 1,76,90

orl-dog LD50:>5 g/kg JACTDZ 1,77,90

skn-rbt LD50:>5 g/kg JACTDZ 1,77,90

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by intravenous route. Moderately toxic by ingestion. Slightly toxic by skin contact. Human mutation data reported.

**VQR300 CAS: 463-88-7 HR: 3**

### VINYLTRIMETHYLAMMONIUM HYDROXIDE

mf:  $\text{C}_5\text{H}_{12}\text{N}^+\text{HO}^-$  mw: 103.19

**PROP:** Syrupy liquid; fishy odor. Forms a crystalline trihydrate. Readily absorbs  $\text{CO}_2$  from the air. Sol in water, alc. Decomp readily forming trimethylamine. Forms an HCl salt.

**SYNS:** NEIRINE □ NEURIN □ NEURINE □ N,N,N-TRIMETHYLETHENAMINIUM HYDROXIDE □ TRIMETHYL VINYL AMMONIUM HYDROXIDE □ VITALOID

### TOXICITY DATA with REFERENCE:

ipr-mus LDLo:100 mg/kg HBAMAK 4,1289,35

scu-mus LDLo:46 mg/kg JPETAB 28,367,26

orl-rbt LDLo:90 mg/kg HBAMAK 4,1289,35

ipr-gpg LDLo:30 mg/kg HBAMAK 4,1289,35

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of  $\text{NO}_x$  and  $\text{NH}_3$ .

**VQU000 CAS: 10141-19-2 HR: 2****VINYL-2,6,8-TRIMETHYLNONYL ETHER**mf: C<sub>14</sub>H<sub>28</sub>O mw: 212.42**PROP:** Mp: -90°, bp: 223.5°, flash p: 200°F (OC), vap d: 7.33, d: 0.8075 @ 20°/20°.**SYN:** 2,6,8-TRIMETHYLNONYL VINYL ETHER**TOXICITY DATA with REFERENCE:**

skn-rbt 10 mg/24H open SEV AMIHBC 10,61,54

eye-rbt 500 mg open AMIHBC 10,61,54

orl-rat LD50:1220 mg/kg AMIHBC 10,61,54

**SAFETY PROFILE:** Moderately toxic by ingestion. An eye and severe skin irritant. Combustible when exposed to heat, flame, or oxidizing agents. To fight fire, use foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and irritating fumes. See also ETHERS.**VQU333 CAS: 15188-09-7 HR: 3****VINYLTRIS(tert-BUTYLDIOXY)SILANE**mf: C<sub>14</sub>H<sub>30</sub>O<sub>6</sub>Si mw: 322.53**SYNS:** PEROXIDE, (VINYL-SILYLIDYNE)TRIS(tert-BUTYL- □ SILANE 32-61 □ SILANE, TRIS(tert-BUTYLDIOXY)VINYL- □ SILANE, TRIS((1,1-DIMETHYLETHYL)DIOXY)ETHENYL- □ TRIS(tert-BUTYLPEROXY)VINYLSILANE □ TRIS((1,1-DIMETHYLETHYL)DIOXY)ETHENYLSILANE □ VINYLTRIS(tert-BUTYLPEROXY)SILANE □ X 12-530**TOXICITY DATA with REFERENCE:**

skn-rbt 10 µL/24H MLD NTIS\*\* OTS0543713

eye-rbt 5 µL MOD NTIS\*\* OTS0543713

orl-rat LD50:1870 µL/kg NTIS\*\* OTS0543713

ipr-rat LD50:1070 µL/kg NTIS\*\* OTS0543713

skn-rbt LD50:71 µL/kg NTIS\*\* OTS0543713

**SAFETY PROFILE:** A poison by ingestion, intraperitoneal, and skin contact routes. A mild skin and moderate eye irritant. When heated to decomposition it emits acrid smoke and irritating vapors.**VQU450 CAS: 1404-96-2 HR: 3****VIOLACETIN**mf: C<sub>18</sub>H<sub>28</sub>N<sub>10</sub>O<sub>16</sub>•2ClH mw: 713.48**PROP:** Antifungal.**TOXICITY DATA with REFERENCE:**

orl-mus LD50:375 mg/kg 85GDA2 4(1),197,80

ipr-mus LD50:45 mg/kg 85GDA2 4(1),197,80

scu-mus LD50:75 mg/kg 85GDA2 4(1),197,80

ivn-mus LD50:37 mg/kg 85GDA2 4(1),197,80

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and HCl.**VQU500 CAS: 80539-34-0 HR: D****VIOLET BNP**mf: C<sub>37</sub>H<sub>36</sub>N<sub>3</sub>O<sub>6</sub>S<sub>2</sub>•Na mw: 705.87**SYNS:** □ C.I. 42581 □ C.I. FOOD VIOLET 3**TOXICITY DATA with REFERENCE:**

mma-sat 100 µg/plate FCTXAV 19,419,81

mrc-smc 76,700 nmol/L FCTXAV 19,419,81

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits toxic fumes of SO<sub>x</sub>, NO<sub>x</sub>, and Na<sub>2</sub>O.**VQZ000 CAS: 32988-50-4 HR: 3****VIOMYCIN**mf: C<sub>25</sub>H<sub>43</sub>N<sub>13</sub>O<sub>10</sub> mw: 685.81**PROP:** Purple crystals from MeOH (strong base) aq. Sol in water.**SYNS:** CELIOMYCIN □ FLORIMYCIN □ FLOROMYCIN □ TUBERACTINOMYCIN B □ VINACETIN A □ VIOACTANE □ VIOCIN □ VIOMICINAE (ITALIAN)**TOXICITY DATA with REFERENCE:**

ipr-rat LD50:1075 mg/kg 85GMAT -,69,82

scu-rat LD50:1750 mg/kg 85GMAT -,69,82

ivn-rat LD50:340 mg/kg OYYAA2 8,817,74

ims-rat LD50:1300 mg/kg OYYAA2 8,817,74

orl-mus LD50:1637 mg/kg 85GMAT -,69,82

ipr-mus LD50:973 mg/kg ANTBAL 8,910,63

scu-mus LD50:1184 mg/kg ANTBAL 8,910,63

ivn-mus LD50:150 mg/kg ANTBAL 8,910,63

ims-mus LD50:840 mg/kg OYYAA2 8,817,74

**SAFETY PROFILE:** Poison by intravenous route.Moderately toxic by ingestion, intraperitoneal, intramuscular and subcutaneous routes. An experimental teratogen. Other experimental reproductive effects. Used as an antibiotic. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.**VQZ100 HR: 2****VIOMYCIN SULFATE SALT (2:3)**mf: C<sub>25</sub>H<sub>43</sub>N<sub>13</sub>O<sub>10</sub>•3/2H<sub>2</sub>O<sub>4</sub>S mw: 933.59**SYNS:** ENVIOMYCIN SULFATE □ TUBERACTINOMYCIN-N SULFATE □ TUBERACTIN SULFATE □ VIOMYCIN, 1-(threo-4-HYDROXY-L-3,6-DIAMINOHEXANOIC ACID)-6-(L-2-(2-AMINO-1,4,5,6-TETRAHYDRO-4-PYRIMIDINYL)GLYCINE)-, (R)-, SESQUISULFATE**TOXICITY DATA with REFERENCE:**

ipr-rat LD50:640 mg/kg YAKUD5 17,1217,75

ipr-mus LD50:420 mg/kg YAKUD5 17,1217,75

**SAFETY PROFILE:** Moderately toxic by intraperitoneal route. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>.**VQZ425 HR: 3****VIPERA AMMODYTES VENOM****SYNS:** V. AMMODYTES VENOM □ VENOM, SNAKE, VIPERA AMMODYTES**TOXICITY DATA with REFERENCE:**

par-rat LD50:850 ng/kg TOXIA6 20,191,82

ipr-mus LD50:1400 µg/kg TOXIA6 11,47,73

scu-mus LD50:2 mg/kg JOIMA3 67,299,51

ivn-mus LD50:10 µg/kg 29QKAZ 3,863,73

**SAFETY PROFILE:** Poison by subcutaneous, parenteral, intravenous, and intraperitoneal routes.**VQZ475 HR: 3****VIPERA BERUS VENOM****SYN:** VENOM, SNAKE, VIPERA ASPIS**TOXICITY DATA with REFERENCE:**

scu-mus LD50:1 mg/kg JOIMA3 67,299,51

ivn-mus LD50:850 µg/kg ACPMAP 24,179,72

par-mus LD50:200 µg/kg ACATA5 108,226,80

ivn-rbt LDLo:175 µg/kg SCIEAS 117,47,53

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and parenteral routes. An experimental teratogen. Experimental reproductive effects.

### VQZ500 HR: 3

#### VIPERA BORNMULLERI VENOM

**SYN:** VENOM, SNAKE, VIPERA BORNMULLERI

#### TOXICITY DATA with REFERENCE:

ipr-mus LD50:1920 µg/kg TOXIA6 22,265,84

scu-mus LD50:6250 µg/kg TOXIA6 22,625,84

ivn-mus LD50:605 µg/kg TOXIA6 22,625,84

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes.

### VQZ525 HR: 3

#### VIPERA LATIFII VENOM

**SYN:** VENOM, SNAKE, VIPERA LATIFII

#### TOXICITY DATA with REFERENCE:

ipr-mus LD50:2070 µg/kg TOXIA6 22,625,84

scu-mus LD50:4610 µg/kg TOXIA6 22,625,84

ivn-mus LD50:224 µg/kg TOXIA6 22,373,84

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes.

### VQZ550 HR: 3

#### VIPERA LEBETINA VENOM

**SYN:** VENOM, SNAKE, VIPERA LEBETINA

#### TOXICITY DATA with REFERENCE:

scu-mus LD50:2720 µg/kg AIPSAH 34,100,56

ivn-mus LD50:568 µg/kg TOXIA6 22,373,84

ivn-rbt LDLo:2500 µg/kg AIPSAH 34,100,56

**SAFETY PROFILE:** Poison by subcutaneous and intravenous routes.

### VQZ575 HR: 3

#### VIPERA PALESTINAE VENOM

**SYN:** VENOM, SNAKE, VIPERA PALESTINAE

#### TOXICITY DATA with REFERENCE:

ims-rat LDLo:2500 µg/kg NATUAS 189,320,61

ipr-mus LD50:1900 µg/kg TOXIA6 6,11,68

ivn-mus LD50:500 µg/kg TOXIA6 4,205,66

ims-rbt LDLo:2 mg/kg NATUAS 189,320,61

**SAFETY PROFILE:** Poison by intramuscular, intravenous, and intraperitoneal routes.

### VQZ625 HR: 3

#### VIPERA RUSSELLII FORMOSENSIS VENOM

**SYN:** VENOM, SNAKE, VIPERA RUSSELLII FORMOSENSIS

#### TOXICITY DATA with REFERENCE:

ipr-mus LD50:489 µg/kg TOXIA6 9,131,71

scu-mus LD50:1400 µg/kg TIHHAH 61,239,62

ivn-mus LD50:178 µg/kg TOXIA6 9,131,71

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes.

### VQZ635 HR: 3

#### VIPERA RUSSELLII VENOM

**SYNS:** RUSSELL'S VIPER VENOM □ VENOM, SNAKE, VIPERA RUSSELLII

#### TOXICITY DATA with REFERENCE:

ipr-mus LD50:400 µg/kg TOXIA6 9,131,71

scu-mus LD50:8250 µg/kg JOIMA3 95,867,65

ivn-mus LD50:35 µg/kg JPPMAB 16,79,64

ivn-dog LDLo:100 µg/kg 19DDA6 1,269,67

ivn-rbt LDLo:25 µg/kg SCIEAS 117,47,53

ivn-mam LD50:80 µg/kg CLPTAT 8,849,67

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes.

### VQZ650 HR: 3

#### VIPERA XANTHINA PALAESTINAE VENOM

**SYN:** VENOM, SNAKE, VIPERA XANTHINA PALAESTINAE

#### TOXICITY DATA with REFERENCE:

scu-mus LD50:2333 µg/kg HAREA6 53,309,57

ipr-mus LD50:2500 µg/kg AJTHAB 6,180,57

ivn-mus LD50:200 µg/kg TOXIA6 14,146,76

ivn-rbt LDLo:750 µg/kg TOXIA6 2,5,64

**SAFETY PROFILE:** Poison by subcutaneous, intravenous, and intraperitoneal routes.

### VQZ675 HR: 1

#### VIPER'S BUGLOSS

**PROP:** Bristly biennials which grow to 2 feet and are speckled with red. The prickly leaves are oblong, about 6 inches long and alternate on the stem. They produce bright blue flowers on spikes and small nuts. They are native to Eurasia but are common in the eastern United States and most of Canada and Hawaii.

**SYNS:** BLUE DEVIL WEED □ ECHIU PLANTAGINEUM □ ECHIU VULGARE □ SNAKE FLOWER □ VIPERINE (CANADA)

**SAFETY PROFILE:** The whole plant contains poisonous pyrrolizidine alkaloids. The plant is used in herbal teas. Ingestion of plant parts or tea can cause nausea, vomiting, and diarrhea. Chronic ingestion can result in liver damage.

### VRA000 CAS: 53762-93-9 HR: 3

#### VIRACTIN

**PROP:** An antibiotic produced by a strain of *Streptomyces griseus* (85ERAY 2,1247,78). Liquid. Bp: 105–135° @ 200 mm.

#### TOXICITY DATA with REFERENCE:

scu-mus LD50:300 mg/kg MEIEDD 10,1432,83

ivn-mus LD50:300 mg/kg 85ERAY 2,1247,78

**SAFETY PROFILE:** Poison by subcutaneous and intravenous routes.

### VRA700 CAS: 3131-03-1 HR: 3

#### VIRGIMYCIN

mF: C<sub>45</sub>H<sub>54</sub>N<sub>8</sub>O<sub>10</sub> mw: 867.07

**PROP:** Needles or platelets from toluene or MeOH. Mp: 266–268°, mp: 160° (monohydrate).

**SYNS:** ANTIBIOTIC 899 □ ANTIBIOTIC PA 11481 □ ANTIBIOTIC PA 114 B1 □ ESKALIN V □ MIKAMYCIN B □ MIKAMYCIN IA □ OSTREOGRYCIN B □ PA 114B □ PRISTINAMYCIN IA □ SKF 7988

□ STAFAC □ STAPHYLOMY-CIN □ STAPHYLOMYCINE □  
STREPTOGRAMIN B □ VERNAMYCIN BA

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:200 mg/kg 85FZAT -,750,67

ipr-mus LD50:350 µg/kg 85ERAY 1,367,78

scu-mus LD50:200 mg/kg 85FZAT -,750,67

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VRF000 CAS: 11006-76-1 HR: 2**  
**VIRGINIAMYCIN**

**PROP:** White powder. Decomp @ 138–140°. Sltly sol in water and dil acid; sol in methanol, ethanol, acetone, benzene; almost insol in ligroin.

**SYNS:** ANTIBIOTIC No. 899 □ ESKALIN V □ MIKAMYCIN □ OSTREOGRYCIN □ PATRICIN □ PRISTINAMYCIN □ PYOSTACINE □ RP7293 □ SKF 7988 □ STAFAC □ STAPHYLOMYCIN □ STAPYOCINE □ STREPTOGRAMIN □ VERNAMYCIN □ VIRGIMYCIN

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:2100 mg/kg 85ERAY 1,383,78

ipr-mus LD50:450 mg/kg MEIEDD 10,1432,83

scu-mus LD50:2500 mg/kg 85ERAY 1,383,78

**SAFETY PROFILE:** Moderately toxic by ingestion, intraperitoneal, and subcutaneous routes. Used as an antibiotic.

**VRP000 CAS: 39277-41-3 HR: 3**  
**VIRIDICATUMTOXIN**

mf: C<sub>30</sub>H<sub>31</sub>NO<sub>10</sub> mw: 565.62

**PROP:** Crystals from MeOH. Mp: 235° (decomp).

**TOXICITY DATA with REFERENCE:**

mma-sat 25 µg/plate MUREAV 58,193,78

orl-rat LD50:122 mg/kg TXAPA9 24,507,73

ipr-rat LD50:90 mg/kg TOLED5 22,287,84

ipr-mus LD50:80 mg/kg TOLED5 22,287,84

**CONSENSUS REPORTS:** EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Poison by ingestion and intraperitoneal routes. Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VRP200 CAS: 35483-50-2 HR: 3**  
**VIRIDITOXIN**

mf: C<sub>30</sub>H<sub>26</sub>O<sub>6</sub> mw: 482.56

**PROP:** Green crystals from C<sub>6</sub>H<sub>6</sub>. Mp: 242–245° (decomp).

**SYNS:** (8,8'-BI-1H-NAPHTHO(2,3-*c*)PYRAN)-3,3'-DIACETIC ACID, 3,3',4,4'-TETRAHYDRO-9,9',10,10'-TETRAHYDRO-7,7'-DIMETHOXY-1,1'-DIOXO-, DIMETHYL ESTER □ CROTALUS VIRIDIS VIRIDIS TOXIN □ C. VIRIDIS VIRIDIS TOXIN □ SC 28762

**TOXICITY DATA with REFERENCE:**

ipr-mus LD50:2800 µg/kg 85GDA2 5,408,81

ims-mus LD50:50 µg/kg TOXIA6 25,1329,87

**SAFETY PROFILE:** Poison by intramuscular and intraperitoneal routes. An experimental teratogen. When heated to decomposition it emits acrid smoke and irritating fumes.

**VRP775 CAS: 84777-85-5 HR: 3**  
**VIRUSTOMYCIN A**

mf: C<sub>48</sub>H<sub>71</sub>NO<sub>14</sub> mw: 886.20

**PROP:** Pale-yellow needles from Me<sub>2</sub>CO. Mp: 204–205°.

**SYNS:** AM-2604 A □ ANTIBIOTIC AM-2604 A

**TOXICITY DATA with REFERENCE:**

dni-omi 300 µg/L JANTAJ 36,1755,83

oms-omi 30 µg/L JANTAJ 36,1755,83

ipr-mus LDLo:10 mg/kg JANTAJ 35,1632,82

**SAFETY PROFILE:** Poison by intraperitoneal route. Mutation data reported. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**VRP780 CAS: 56731-15-8 HR: 2**  
**VISCO 31**

**SYNS:** BEROL VISCO 31 □ VISCO 31

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:1700 mg/kg GTPZAB 29(12),53,85

**SAFETY PROFILE:** Moderately toxic by ingestion.

When heated to decomposition it emits acrid smoke and irritating vapors.

**VRP790 CAS: 64366-96-7 HR: 1**  
**VISCO 34**

**SYN:** BEROL VISCO 34

**TOXICITY DATA with REFERENCE:**

orl-mus LD50:6 g/kg GTPZAB 29(12),53,85

**SAFETY PROFILE:** Low toxicity by ingestion. When heated to decomposition it emits acrid smoke and irritating vapors.

**VRU000 CAS: 76822-96-3 HR: 3**  
**VISCOTOXIN**

mf: C<sub>36</sub>H<sub>63</sub>N<sub>10</sub>O<sub>21</sub>S mw: 1004.15

**TOXICITY DATA with REFERENCE:**

ivn-rat LD50:260 µg/kg AEPPAE 209,165,50

ivn-rbt LDLo:500 µg/kg AEPPAE 209,165,50

**SAFETY PROFILE:** Poison by intravenous route. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>.

**VRU300 CAS: 64741-71-5 HR: 2**  
**VISCOUS POLYMER (PETROLEUM)**

**SYNS:** BRANCHED MONO-OLEFINS □ CRUDE PROPYLENE POLYMERS □ LIGHT POLYMER □ POLYMERS (PETROLEUM), VISCOUS

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:>5 g/kg JACTDZ 1,742,92

ihl-rat LC50:>5050 mg/m<sup>3</sup>/4H JACTDZ 1,742,92

skn-rat LD50:>2 g/kg JACTDZ 1,742,92

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by skin contact. Low toxicity by ingestion and inhalation. When heated to decomposition it emits acrid smoke and irritating vapors.

**VRZ000 CAS: 522-48-5 HR: 3**  
**VISINE**

mf:  $C_{13}H_{16}N_2 \cdot ClH$  mw: 236.77

**SYNS:** 4,5-DIHYDRO-2-(1,2,3,4-TETRAHYDRO-1-NAPHTH-ALENYL)-1H-IMIDAZOLE MONOHYDROCHLORIDE □ 2-(1,2,3,4-TETRAHYDRO-1-NAPHTHYL)-2-IMIDAZOLINE HYDROCHLORIDE □ 2-(1,2,3,4-TETRAHYDRO-1-NAPHTHYL)-2-IMIDAZOLINE MONOHYDROCHLORIDE □ TETRAHYDROZOLINE HYDROCHLORIDE □ dl-TETRAHYDROZOLINE HYDROCHLORIDE □ TYZANOL HYDROCHLORIDE □ TYZINE □ TYZINE HYDROCHLORIDE □ VISINE HYDROCHLORIDE

#### TOXICITY DATA with REFERENCE:

unr-inf TDLo:80 mg/kg; CNS, PUL, MET SCMBE9 29,17,55  
 orl-rat LD50:785 mg/kg NIIRDN 6,495,82  
 ipr-rat LD50:122 mg/kg NIIRDN 6,495,82  
 scu-rat LD50:500 mg/kg NIIRDN 6,495,82  
 ivn-rat LD50:35 mg/kg NIIRDN 6,495,82  
 orl-mus LD50:345 mg/kg NIIRDN 6,495,82  
 ipr-mus LD50:110 mg/kg CLDND\* 6,495,82  
 ivn-mus LD50:39 mg/kg 29ZVAB -,113,69  
 ims-brd LD50:150 mg/kg CLDND\* 6,495,82

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, intravenous, subcutaneous, and intramuscular routes. Human systemic effects by an unspecified route: sleep changes, dyspnea and body temperature decrease. When heated to decomposition it emits very toxic fumes of HCl and  $NO_x$ .

**VSA000 CAS: 13523-86-9 HR: 3**  
**VISKEN**

mf:  $C_{14}H_{20}N_2O_2$  mw: 248.36

**SYNS:** CALVISKEN □ CARDILATE □ 4-(2-HYDROXY-3-ISOPROPYLAMINOPROPOXY)-INDOLE □ 1-(4-INDOLYLOXY)-3-(ISOPROPYLAMINO)-2-PROPANOL □ 1-(1H-INDOL-4-YLOXY)-3-((1-METHYLETHYL)AMINO)-2-PROPANOL □ LB-46 □ PINDOLOL □ PRINODOLOL

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:263 mg/kg NIGZAY 84,438,70  
 ipr-rat LD50:110 mg/kg IYKEDH 4,90,73  
 scu-rat LD50:251 mg/kg NIGZAY 84,438,70  
 ivn-rat LD50:51 mg/kg NIGZAY 84,438,70  
 orl-mus LD50:235 mg/kg JTSCDR 6,301,81  
 ipr-mus LD50:80 mg/kg YACHDS 9,3573,81  
 scu-mus LD50:336 mg/kg NIGZAY 84,438,70  
 ivn-mus LD50:22,600 µg/kg ARZNAD 28,794,78  
 ivn-rbt LD50:10 mg/kg ARZNAD 27,1022,77

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intraperitoneal, and intravenous routes. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of  $NO_x$ .

**VSF000 CAS: 1244-76-4 HR: 3**  
**VISTARIL HYDROCHLORIDE**

mf:  $C_{21}H_{27}ClN_2O_2 \cdot ClH$  mw: 411.41

**SYNS:** ATARAX HYDROCHLORIDE □ 1-(p-CHLORO BENZ-HYDRYL)-4-(2-(2-HYDROXYETHOXY)ETHYL)DIETHYLENEDIAMINE HYDROCHLORIDE □ HYDROXYZINE HYDROCHLORIDE

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:690 mg/kg NIIRDN 6,621,82

ipr-rat LD50:126 mg/kg TXAPA9 18,185,71  
 orl-mus LD50:515 mg/kg JPETAB 127,318,59  
 ipr-mus LD50:137 mg/kg NIIRDN 6,621,82  
 ivn-mus LD50:56 mg/kg NIIRDN 6,621,82

**SAFETY PROFILE:** Poison by intraperitoneal and intravenous routes. Moderately toxic by ingestion. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits very toxic fumes of  $Cl^-$  and  $NO_x$ . Used as a tranquilizer.

**VSF400 CAS: 20231-45-2 HR: 3**  
**VITACAMPHER**

mf:  $C_{10}H_{14}O_2$  mw: 166.24

**SYN:** trans-pi-OXOCAMPHOR

#### TOXICITY DATA with REFERENCE:

orl-rat LD50:3100 mg/kg NIIRDN 6,514,82  
 ipr-rat LD50:890 mg/kg NIIRDN 6,514,82  
 scu-rat LD50:1650 mg/kg NIIRDN 6,514,82  
 orl-mus LD50:400 mg/kg NIIRDN 6,514,82  
 ipr-mus LD50:260 mg/kg NIIRDN 6,514,82  
 scu-mus LD50:550 mg/kg NIIRDN 6,514,82

**SAFETY PROFILE:** Poison by ingestion and intraperitoneal routes. Moderately toxic by subcutaneous route. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALDEHYDES.

**VSK000 CAS: 12629-02-6 HR: 2**  
**VITALLIUM**

**PROP:** Alloy of chromium, cobalt, and molybdenum (CNREA8 16,439,56). IDLH 1000 mg/m<sup>3</sup> (as Mo).

**SYNS:** CHROMIUM-COBALT-MOLYBDENUM ALLOY □ COBALT-CHROMIUM-MOLYBDENUM ALLOY □ MOLYBDENUM-COBALT-CHROMIUM ALLOY □ STELLITE

**CONSENSUS REPORTS:** Cobalt and its compounds, as well as chromium and its compounds, are on the Community Right-To-Know List.

**OSHA PEL:** TWA Total Dust: 10 mg/m<sup>3</sup>; Respirable Fraction: 5 mg/m<sup>3</sup>

**ACGIH TLV:** Insoluble Compounds: inhalable fraction, 10 mg(Mo)/m<sup>3</sup>, 3 mg(Mo)/m<sup>3</sup>, respirable fraction.

**NIOSH REL:** (Cobalt) Insufficient evidence for recommending limit

**SAFETY PROFILE:** Questionable carcinogen with experimental tumorigenic data.

**VSK600 CAS: 68-26-8 HR: 3**  
**VITAMIN A**

mf:  $C_{20}H_{30}O$  mw: 286.50

**PROP:** Yellow crystals or light-yellow to red oil; mild fishy odor. Mp: 63–64°, bp: 137–138° @ 0.000001 mm. Very sol in chloroform, ether; sol in abs alc, vegetable oil; insol in glycerin, water.

**SYNS:** ACON □ AFAXIN □ AGIOLAN □ ALPHALIN □ ALPHASTEROL □ ANATOLA □ ANTI-INFECTION VITAMIN □ ANTIXEROPHTHALMIC VITAMIN □ AORAL □ APEXOL □ AQUASYNTH □ AVIBON □ AVITA □ AVITOL □ BIOSTEROL □ CHOCOLA A □ 3,7-DIMETHYL-9-(2,6,6-TRIMETHYL-1-

CYCLOHEXEN-1-YL)-2,4,6,8-NONATETRAEN-1-OL □ DISATABS  
 TABS □ DOFSOL □ EPITELIOL □ HI-A-VITA □ LARD FACTOR  
 □ MYVPACK □ OLEOVITAMIN A □ OPHTHALAMIN □  
 PREPALIN □ RETINOL □ all-trans RETINOL □ RETROVITAMIN A  
 □ TESTAVOL □ VAFLOL □ VI-ALPHA □ VITAMIN A1 □  
 VITAMIN A1 ALCOHOL □ all-trans-VITAMIN A ALCOHOL □  
 VITAVEL-A □ VITPEX □ VOGAN □ VOGAN-NEU

**TOXICITY DATA with REFERENCE:**

oms-hmn:lym 4 mg/L EJCODS 21,1089,85  
 sce-hmn:lym 4 mg/L EJCODS 21,1089,85  
 dni-rat:mmr 3 µmol/L JJIND8 70,949,83  
 orl-rat LD50:2000 mg/kg AVSUAR 74,29,75  
 orl-mus LD50:1510 mg/kg 51ZKAW 2,287,84

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Moderately toxic by ingestion. Human teratogenic effects by ingestion: developmental abnormalities of the craniofacial area and urogenital system. An experimental teratogen. Experimental reproductive effects. Human mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.

**VSK900 CAS: 127-47-9 HR: 2**  
**VITAMIN A ACETATE**

mf: C<sub>22</sub>H<sub>32</sub>O<sub>2</sub> mw: 328.54

**PROP:** Crystals from MeOH. Mp: 57–58°.

**SYNS:** CRYSTALETs □ MYVAK □ MYVAX □ RETINOL  
 ACETATE □ RETINYL ACETATE □ all-trans-RETINYL ACETATE  
 □ trans-VITAMIN A ACETATE □ VITAMIN A ALCOHOL  
 ACETATE

**TOXICITY DATA with REFERENCE:**

dni-rat:mmr 3 µmol/L JJIND8 70,949,83  
 orl-mus LDLo:1000 mg/kg APMIAL 70,398,67

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by ingestion. Experimental teratogenic and reproductive effects. Questionable carcinogen with experimental neoplastigenic data. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes. See also VITAMIN A.

**VSK950 CAS: 302-79-4 HR: 3**  
**VITAMIN A ACID**

mf: C<sub>20</sub>H<sub>28</sub>O<sub>2</sub> mw: 300.48

**PROP:** Crystals from MeOH. Mp: 180–182°.

**SYNS:** ABEREL □ 3,7-DIMETHYL-9-(2,6,6-TRIMETHYL-1-CYCLOHEXEN)-1-YL-2,4,6,8-NONATETRAENOIC ACID □ NSC-122758 □ β-RA □ RETIN-A □ RETINOIC ACID □ β-RETINOIC ACID □ all-trans-RETINOIC ACID □ TRETINOIN

**TOXICITY DATA with REFERENCE:**

skn-hmn 525 mg/21D-I MLD AVSUAR 74,128,75  
 dni-hmn:leu 1 µmol/L CNREA8 46,1388,86  
 oms-hmn-skn 1000 ppm 26UYA8 -,335,71  
 orl-rat LD50:1960 mg/kg KSRNAM 7,3194,73  
 ipr-rat LD50:96 mg/kg KSRNAM 7,3194,73  
 scu-rat LD50:53 mg/kg KSRNAM 7,3194,73  
 ivn-rat LD50:78 mg/kg KSRNAM 7,3194,73  
 orl-mus LD50:216 mg/kg VOONAW 25(12),84,79

ipr-mus LD50:394 mg/kg KSRNAM 7,3194,73  
 scu-mus LD50:253 mg/kg KSRNAM 7,3194,73  
 ivn-mus LD50:191 mg/kg KSRNAM 7,3194,73

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, subcutaneous, and intravenous routes. Experimental reproductive effects. Questionable carcinogen with experimental neoplastigenic and teratogenic data. Human mutation data reported. A human skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. Used to treat acne and other skin problems.

**VSK955 CAS: 4759-48-2 HR: 3**  
**13-cis-VITAMIN A ACID**

mf: C<sub>20</sub>H<sub>28</sub>O<sub>2</sub> mw: 300.48

**PROP:** Crystals from EtOH. Mp: 189–190°.

**SYNS:** ISOTRETINOIN □ NEOVITAMIN A ACID □ 13-RA □ 13-cis-RETINOIC ACID □ RO-4-3780

**TOXICITY DATA with REFERENCE:**

sce-hmn:lym 50 µmol/L BLFSBY 29A,333,84  
 sce-mus:emb 7100 nmol/L ANYAA9 359,237,81  
 orl-man TDLo:37 mg/kg/5W-I:SKN,ALR ARDEAC 122,815,86  
 orl-man TDLo:24 mg/kg/4W-I:GIT GASTAB 93,606,87  
 orl-wmn TDLo:56 mg/kg/8W-I:SKN CUTIBC 37,115,86  
 unr-man TDLo:21 mg/kg/3W-I:SKN BMJOAE 290,820,85  
 orl-cld TDLo:360 mg/kg/26W-I:SKN CUTIBC 38,275,86  
 orl-mus LD50:3389 mg/kg 51ZKAW 2,287,84  
 ipr-mus LD50:138 mg/kg 51ZKAW 2,287,84  
 orl-rbt LD50:1960 mg/kg 51ZKAW 2,287,84

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by intraperitoneal route. Moderately toxic by ingestion. A human teratogen by ingestion with fetal developmental abnormalities of the skin and appendages and other postnatal effects. Human reproductive effects. Human systemic effects: decreased immune response, diarrhea, hypermotility, irritative dermatitis, sweating. Human mutation data reported. An experimental teratogen. Other experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.

**VSK975 CAS: 514-85-2 HR: D**  
**9-cis-VITAMIN A ALDEHYDE**

mf: C<sub>20</sub>H<sub>28</sub>O mw: 284.48

**SYNS:** 9-cis-3,7-DIMETHYL-9-(2,6,6-TRIMETHYL-1-CYCLOHEXEN-1-YL)-2,4,6,8-NONATETRAENAL □ ISORETINENE a □ 9-cis-RETINAL □ 9-cis-RETINALDEHYDE

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.

**VSK985 CAS: 116-31-4 HR: D**  
**trans-VITAMIN A ALDEHYDE**

mf: C<sub>20</sub>H<sub>28</sub>O mw: 284.48

**SYNS:** AXEROPHTHAL □ RETINAL (9CI) □ RETINAL, all-trans- □ all-E-RETINAL □ all-trans-RETINAL □ E-RETINAL □ trans-RETINAL □ RETINALDEHYDE □ RETINENE □  $\alpha$ -RETINENE □ RETINENE 1 □ VITAMIN A ALDEHYDE □ VITAMIN A1 ALDEHYDE

**TOXICITY DATA with REFERENCE:**

dni-rat:mmr 3  $\mu\text{mol/L}$  JJIND8 70,949,83

dni-mus:lyms 100  $\mu\text{mol/L}$  ONCOBS 44,356,87

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Mutation data reported. When heated to decomposition it emits acrid smoke and irritating vapors.

**VSP000 CAS: 79-81-2 HR: 1**

**VITAMIN A PALMITATE**

mf:  $\text{C}_{36}\text{H}_{60}\text{O}_2$  mw: 524.96

**PROP:** A solid or liquid. Mp: 28–29°.

**SYNS:** AQUASOL □ AROVIT □ RETINOL PALMITATE □ RETINYL PALMITATE

**TOXICITY DATA with REFERENCE:**

sce-hmn:fbr 27,500  $\mu\text{g/L}$  MUREAV 58,317,78

orl-mus LD50:4760 mg/kg VOONAW 25(12),84,79

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**SAFETY PROFILE:** Mildly toxic by ingestion. An experimental teratogen. Experimental reproductive effects. Human mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.

**VSU000 CAS: 65-22-5 HR: 3**

**VITAMIN B<sub>6</sub> HYDROCHLORIDE**

mf:  $\text{C}_8\text{H}_9\text{NO}_3 \cdot \text{ClH}$  mw: 203.64

**SYNS:** 3-HYDROXY-5-(HYDROXYMETHYL)-2-METHYL-ISONICOTINALDEHYDE, HYDROCHLORIDE □ 2-METHYL-3-HYDROXY-4-FORMYL-5-HYDROXYMETHYLPYRIDINE HYDROCHLORIDE □ PYRIDOXAL HYDROCHLORIDE

**TOXICITY DATA with REFERENCE:**

orl-rat LD50:2150 mg/kg ARZNAD 11,922,61

scu-rat LD50:530 mg/kg ARZNAD 11,922,61

ivn-rat LD50:320 mg/kg ARZNAD 11,922,61

orl-mus LD50:1800 mg/kg ARZNAD 11,922,61

ipr-mus LD50:400 mg/kg NTIS\*\* AD691-490

scu-mus LD50:530 mg/kg ARZNAD 11,922,61

ivn-mus LD50:390 mg/kg ARZNAD 11,922,61

ivn-cat LD50:160 mg/kg ARZNAD 11,922,61

ims-cat LD50:152 mg/kg ARZNAD 11,922,61

ivn-rbt LD50:465 mg/kg ARZNAD 11,922,61

ivn-pgn LD50:262 mg/kg ARZNAD 11,922,61

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Poison by intramuscular, intravenous, and intraperitoneal routes. Moderately toxic by ingestion and subcutaneous routes. When heated to decomposition it emits very toxic fumes of  $\text{NO}_x$  and HCl. See also ALDEHYDES.

**VSU100 CAS: 58-85-5 HR: D**

**VITAMIN B<sub>7</sub>**

mf:  $\text{C}_{10}\text{H}_{16}\text{N}_2\text{O}_3\text{S}$  mw: 244.34

**SYNS:** BIOEPIDERM □ BIOS II □ BIOTIN □ (+)-BIOTIN □ d-BIOTIN □ d-(+)-BIOTIN □ COENZYME R □ FACTOR S □ FACTOR S (vitamin) □ 1H-THIENO(3,4-d)IMIDAZOLE-4-PENTANOIC ACID, HEXAHYDRO-2-OXO-, (3aS-(3a- $\alpha$ -4 $\beta$ , 6a- $\alpha$ ))- □ VITAMIN H

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits toxic fumes of  $\text{NO}_x$  and  $\text{SO}_x$ .

**VSZ000 CAS: 68-19-9 HR: 3**  
**VITAMIN B<sub>12</sub> COMPLEX**

mf:  $\text{C}_{63}\text{H}_{88}\text{CoN}_{14}\text{O}_{14}\text{P}$  mw: 1355.55

**PROP:** Red needles. Mp: @ >300°. The anti-pernicious-anemia vitamin. All vitamin B<sub>12</sub> compounds contain the cobalt atom in its trivalent state. There are at least three active forms: cyanocobalamin, hydroxycobalamin, and nitrocobalamin. Dark-red crystals or crystalline powder. Very hygroscopic; sltly sol in water; sol in alc; insol in acetone, chloroform, ether.

**SYNS:** ANACOBIN □ B-12 □ BERUBIGEN □ BETALIN 12 CRYSTALLINE □ BEVATINE-12 □ BEVIDOX □ BYLADOCE □ CABADON M □ COBADOCE FORTE □ COBALIN □ COBAMIN □ COBIONE □ COTEL □ COVIT □ CRYSTAMIN □ CRYSTWEL □ CYANO-B12 □ CYANOCOBALAMIN □ CYCOLAMIN □ CYKOBEMINET □ CYREDIN □ CYTACON □ CYTAMEN □ CYTOBION □ DEPINAR □ DIMETHYLBENZIMIDAZOLY-COBAMIDE □ 5,6-DIMETHYLBENZIMIDAZOLYCOBAMIDE CYANIDE □ DISTIVIT (B12 PEPTIDE) □ DOBETIN □ DOCEMINE □ DOCIBIN □ DOCIGRAM □ DODECABEE □ DODECAVITE □ DODEX □ DUCOBEE □ DUODECIBIN □ EMBIOL □ EMOCICLINA □ ERITRONE □ ERYCYTOL □ ERYTHROTIN □ EUHAEMON □ EXTRINSIC FACTOR □ FACTOR II (VITAMIN) □ FRESMIN □ HEMO-B-DOZE □ HEMOMIN □ HEPAGON □ HEPAVIS □ HEPCOVITE □ LACTOBACILLUS LACTIS DORNER FACTOR □ LLD FACTOR □ MACRABIN □ MEGABION □ MEGALOVOL □ MILBEDOCE □ NAGRAVON □ NORMOCYTIN □ PERNAEMON □ PERNAEVIT □ PERNIPURON □ PLECYAMIN □ POYAMIN □ REBRAMIN □ REDAMINA □ REDISOL □ RHODACRYST □ RUBESOL □ RUBRAMIN □ RUBRIPCA □ RUBROCITOL □ SYTOBEX □ VIBALT □ VIBISONE □ VIRUBRA □ VITAMIN B12 (FCC) □ VITARUBIN □ VITA-RUBRA □ VITRAL □ VI-TWEL

**TOXICITY DATA with REFERENCE:**

ipr-mus LDLo:1364 mg/kg ARPAAQ 49,278,50

scu-mus LDLo:3 mg/kg ARPAAQ 49,278,50

**CONSENSUS REPORTS:** Cobalt and its compounds are on the Community Right-To-Know List. Reported in EPA TSCA Inventory. EPA Genetic Toxicology Program.

**NIOSH REL:** (Cobalt) Insufficient evidence for recommending limit

**SAFETY PROFILE:** Poison by subcutaneous route. Moderately toxic by intraperitoneal route. An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits very toxic fumes of  $\text{PO}_x$  and  $\text{NO}_x$ . See also COBALT COMPOUNDS.

**VSZ050 CAS: 13422-55-4 HR: 2  
VITAMIN B<sub>12</sub> METHYL**mf: C<sub>63</sub>H<sub>91</sub>N<sub>13</sub>O<sub>14</sub>P•Co mw: 1344.57**PROP:** Red needles from Me<sub>2</sub>CO (aq). Stable at room temp in the absence of strong light. Spar sol in H<sub>2</sub>O; sol in alcohols.**SYNS:** COBALT-METHYLCOBALAMIN □ COBINAMIDE, COBALT-METHYL derivative, HYDROXIDE, DIHYDROGEN PHOSPHATE (ester), inner salt, 3'-ESTER with 5,6-DIMETHYL-1- $\alpha$ -D-RIBOFURANOSYL.BENZIMIDAZOLE □ MECOBALAMIN □ METHYCOBAL □ METHYL-B<sub>12</sub> □ METHYLCOBALAMIN □ METHYL COBALAMINE**SAFETY PROFILE:** Questionable carcinogen with experimental neoplastigenic data. An experimental teratogen. Other experimental reproductive effects. When heated to decomposition it emits toxic fumes of NO<sub>x</sub> and PO<sub>x</sub>.**VSZ095 CAS: 1406-16-2 HR: 1  
VITAMIN D****TOXICITY DATA with REFERENCE:**orl-wmn TDLo:875  $\mu$ g/kg/6W-I AJMEAZ 82,224,87**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Human systemic effects by ingestion: changes in tubules (including acute renal failure, acute tubular necrosis), depressed renal function tests, calcium level changes. When heated to decomposition it emits acrid smoke and irritating vapors.**VSZ100 CAS: 50-14-6 HR: 3  
VITAMIN D<sub>2</sub>**mf: C<sub>28</sub>H<sub>44</sub>O mw: 396.72**PROP:** White crystals or prisms from Me<sub>2</sub>CO; odorless. Mp: 115–118°. Insol in water; sol in alc, chloroform, ether, and fatty oils.**SYNS:** d-ARTHIN □ CALCIFEROL □ CALCIFERON 2 □ CONDACAPS □ CONDOCAPS □ CONDOL □ CRTRON □ CRYSTALLINA □ DARAL □ DAVITAMON D □ DAVITIN □ DECAPS □ DEE-OSTEROL □ DEE-RON □ DEE-RONAL □ DEE-ROUAL □ DELTALIN □ DERATOL □ DETALUP □ DIACTOL □ DIVIT URTO □ DORAL □ DRISDOL □ ERGOCALCIFEROL □ ERGORONE □ ERGOSTEROL, activated □ ERGOSTEROL, irradiated □ ERTON □ FORTODYL □ GELTABS □ HI-DERATOL □ INFRON □ IRRADIATED ERGOSTA-5,7,22-TRIEN-3- $\beta$ -OL □ METADEE □ Mulsiferol □ MYKOSTIN □ OLEOVITAMIN D □ OSTELIN □ RADIOSTOL □ RADSTERIN □ 9,10,SECOERGOSTA-5,7,10(19),22-TETRAEN-3- $\beta$ -OL □ SHOCK-FEROL □ STEROGYL □ VIGANTOL □ VIOSTEROL □ VITAVEL-D**TOXICITY DATA with REFERENCE:**

orl-wmn TDLo 12,600 mg/kg/72W:CNS,GIT,MET LANCAO 1,1164,80

orl-rat LD50:56 mg/kg 85JFAN A685,85

orl-mus LD50:23,700  $\mu$ g/kg PEMNDP 8,117,87

orl-dog LDLo:4 mg/kg ZGEMAZ 116,138,50

ipr-dog LDLo:10 mg/kg ZGEMAZ 116,138,50

ivn-dog LDLo:5 mg/kg ZGEMAZ 116,138,50

ims-dog LDLo:5 mg/kg ZGEMAZ 116,138,50

orl-cat LDLo:5 mg/kg NIIRDN 6,128,82

orl-gpg LDLo:40 mg/kg NIIRDN 6,128,82

**CONSENSUS REPORTS:** EPA Extremely Hazardous Substances List.**SAFETY PROFILE:** Poison by ingestion, intraperitoneal, intravenous, and intramuscular routes. An experimental teratogen. Human systemic effects by ingestion: anorexia, nausea or vomiting, and weight loss. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.**VSZ450 CAS: 59-02-9 HR: D  
VITAMIN E**mf: C<sub>29</sub>H<sub>50</sub>O<sub>2</sub> mw: 430.79**PROP:** dl-Form: Sltly viscous, pale-yellow oil; d-form: red liquid; odorless. Natural  $\alpha$ -tocopherol has been crystallized. Mp: 2.5–3.5°, d: (25°/4°) 0.950, bp: (0.1 mm Hg) 200–220°. Practically insol in water; freely sol in oils, fats, acetone, alc, chloroform, ether, other fat solvents. Gradually darkens on exposure to light.**SYNS:** ALMEFROL □ ANTISTERILITY VITAMIN □ COVI-OX □ DENAMONE □ EMPHEROL □ ENDO E □ EPHYNAL □ EPROLIN □ EPSILAN □ ESORB □ ETAMICAN □ ETAVIT □ EVION □ EVITAMINUM □ ILITIA □ PHYTOGERMINE □ PROFECUNDIN □ SPAVIT □ SYNTOPHEROL □ d- $\alpha$ -TOCOPHEROL (FCC) □ dl- $\alpha$ -TOCOPHEROL (FCC) □  $\alpha$ -TOCOPHEROL □ (R,R,R)- $\alpha$ -TOCOPHEROL □ (2R,4R,8R)- $\alpha$ -TOCOPHEROL □ TOKOPHARM □ 5,7,8-TRIMETHYLTOLCOL □ VASCUALS □ VERROL □ VITAPLEX E □ VITAYONON □ VITEOLIN**TOXICITY DATA with REFERENCE:**

dnd-rat-ivn 27 nmol/kg EXPEAM 31,1023,75

dni-rat:lv: 100  $\mu$ mol/L CNREA8 45,337,85**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Experimental reproductive effects. Mutation data reported. When heated to decomposition it emits acrid smoke and irritating fumes.**VSZ500 CAS: 12001-79-5 HR: 2  
VITAMIN K****TOXICITY DATA with REFERENCE:**

scu-mus LD50:700 mg/kg ARZNAD 8,25,58

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.**SAFETY PROFILE:** Moderately toxic by subcutaneous route. An experimental teratogen. When heated to decomposition it emits acrid smoke and irritating fumes.**VTA000 CAS: 84-80-0 HR: 2  
VITAMIN K<sub>1</sub>**mf: C<sub>31</sub>H<sub>46</sub>O<sub>2</sub> mw: 450.77**PROP:** Pale-yellow oil or yellow cryst. Mp: –4°.**SYNS:** ANTIHEMORRHAGIC VITAMIN □ AQUA MEPHYTON □ COMBINAL K1 □ KATIV N □ KEPHTON □ KINADION □ KONAKION □ MEPHYTON □ 2-METHYL-3-PHYTHYL-1,4-NAPHTHOCHINON (GERMAN) □ 2-METHYL-3-(3,7,11,15-TETRAMETHYL-2-HEXADECENYL)-1,4-NAPHTHALENEDIONE □ MONODION □ MONO-KAY □ PHYLLIOCHINON (GERMAN) □ PHYLLIOQUINONE □  $\alpha$ -PHYLLIOQUINONE □ trans-

PHYLLLOQUINONE □ PHYTOMENADIONE □ PHYTON-ADIONE

### TOXICITY DATA with REFERENCE:

orl-mus LD50:25 g/kg ARZNAD 17,1339,67

scu-mus LD50:1000 mg/kg ARZNAD 8,25,58

**CONSENSUS REPORTS:** Reported in EPA TSCA Inventory.

**SAFETY PROFILE:** Moderately toxic by subcutaneous route. Mildly toxic by ingestion. An FDA proprietary drug. Used as a vitamin. When heated to decomposition it emits acrid smoke and irritating fumes.

### VTA100 CAS: 573-20-6 HR: 2 VITAMIN K DIACETATE

mf: C<sub>15</sub>H<sub>14</sub>O<sub>4</sub> mw: 258.29

**SYNS:** ACETOMENAPHTHONE □ ADAPRIN □ DAVITAMON-K □ DAVITAMON-K-ORAL □ 1,4-DIACETOXY-2-METHYL-NAPHTHALENE □ KAPILIN □ KAPILON □ KAPPAXAN □ KATIV POWDER □ KAYVITE □ MENADIOL DIACETATE □ 2-METHYL-1,4-NAPHTHOHYDROQUINONE DIACETATE □ 1,4-NAPHTHALENEDIOL, 2-METHYL-, DIACETATE □ PAFAVIT □ PROKAYVIT ORAL □ VITAMIN K4 □ VITAVEL K

### TOXICITY DATA with REFERENCE:

orl-mus LDLo:3600 mg/kg JPETAB 75,111,42

**SAFETY PROFILE:** Moderately toxic by ingestion. When heated to decomposition it emits acrid smoke and irritating vapors.

### VTA650 CAS: 863-61-6 HR: D VITAMIN MK 4

mf: C<sub>31</sub>H<sub>40</sub>O<sub>2</sub> mw: 444.71

**PROP:** Yellow crystals or oily liquid.

**SYNS:** K2<sub>20</sub> □ KAYTWO □ MENAQUINONE-4 □ MENAQUINONE K4 □ MENATETRENONE □ 2-METHYL-3-(3,7,11,15-TETRAMETHYL-2,6,10,14-HEXADECATETRAENYL)-1,4-NAPHTHOQUINONE □ 2-METHYL-3-trans-TETRAMETHYL-1,4-NAPHTHQUINONE □ MK<sub>4</sub> □ VITAMIN K2<sub>20</sub>

**SAFETY PROFILE:** An experimental teratogen. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes.

### VTA750 CAS: 610-88-8 HR: 3 VIVOTOXIN

mf: C<sub>10</sub>H<sub>15</sub>NO<sub>3</sub> mw: 197.26

**PROP:** Pale brown, viscous oil or crystals; gummy substance. Bp: (0.035) 117°, mp: 74–75°. Readily sol in org solvs including pet ether; sparingly sol in water. On long standing, changes into the crystalline iso-form.

**SYNS:** 3-ACETYL-5-sec-BUTYL-4-HYDROXY-3-PYRROLIN-2-ONE □ 3-ACETYL-1,5-DIHYDRO-4-HYDROXY-5-(1-METHYL-PROPYL)-2H-PYRROL-2-ONE □ TENUAZONIC ACID □ L-TENUAZONIC ACID

### TOXICITY DATA with REFERENCE:

orl-mus LD50:225 mg/kg 85GDA2 5,65,81

ipr-mus LD50:81 mg/kg EVHPAZ 4,87,73

scu-mus LD50:145 mg/kg 85GDA2 5,65,81

ivn-mus LD50:125 mg/kg 85GDA2 5,65,81

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

### VTF000 CAS: 595-33-5 HR: 3 VOLIDAN

mf: C<sub>24</sub>H<sub>32</sub>O<sub>4</sub> mw: 384.56

**PROP:** Crystals from MeOH (aq). Mp: 214–216°.

**SYNS:** 17-α-ACETOXY-6-DEHYDRO-6-METHYLPROGESTERONE □ 17-ACETOXY-6-METHYLPREGNA-4,6-DIENE-3,20-DIONE □ 17-α-ACETOXY-6-METHYLPREGNA-4,6-DIENE-3,20-DIONE □ 17-α-ACETOXY-6-METHYL-4,6-PREGNADIENE-3,20-DIONE □ BDH 1298 □ 6-DEHYDRO-6-METHYL-17-α-ACETOXYPROGESTERONE □ DMAP □ 17-HYDROXY-6-METHYLPREGNA-4,6-DIENE-3,20-DIONE ACETATE □ MEGACE □ MEGESTROL ACETATE □ MEGESTRYL ACETATE □ 6-METHYL-17-α-ACETOXYPREGNA-4,6-DIENE-3,20-DIONE □ 6-METHYL-6-DEHYDRO-17-α-ACETOXYPROGESTERONE □ 6-METHYL-6-DEHYDRO-17-α-ACETYLPROGESTERONE □ 6-METHYL-17-α-HYDROXY-Δ<sup>4</sup>-PROGESTERONE ACETATE □ 6-METHYL-Δ<sup>4</sup>-PREGNADIEN-17-α-OL-3,20-DIONE ACETATE □ NSC-71423 □ OVABAN □ SC10363

### TOXICITY DATA with REFERENCE:

dns-mus-scu 200 mg/kg JOENAK 60,167,74

dni-mus-scu 200 mg/kg JOENAK 60,167,74

ivn-mus LD50:56 mg/kg CSLNX\* NX#00931

**CONSENSUS REPORTS:** IARC Cancer Review: Animal Limited Evidence IMEMDT 21,431,79.

**SAFETY PROFILE:** Suspected carcinogen with experimental carcinogenic and teratogenic data. Poison by intravenous route. Human reproductive effects by ingestion and implant routes: effects on ovaries and fallopian tubes, menstrual cycle changes, and female fertility index changes. Mutation data reported. Experimental reproductive effects. When heated to decomposition it emits acrid smoke and irritating fumes. An FDA proprietary drug used to treat endometriosis and breast cancer. A steroid.

### VTF500 CAS: 51481-10-8 HR: 3 VOMITOXIN

mf: C<sub>15</sub>H<sub>20</sub>O<sub>6</sub> mw: 296.35

**PROP:** Fine needles or crystals from ethyl acetate + pet ether. Mp: 151–153°.

**SYNS:** DEHYDRONIVALENOL □ DEOXYNIVALENOL □ 4-DEOXYNIVALENOL □ DESOXYNIVALENOL

### TOXICITY DATA with REFERENCE:

skn-gpg 148 µg MLD FAATDF 4(2, Pt 2),S124,84

orl-mus LD50:46 mg/kg FAATDF 4(2, Pt 2),S124,84

ipr-mus LD50:43 mg/kg TOXIA6 24,985,86

scu-mus LD50:45 mg/kg TOXIA6 24,985,86

scu-dog LD50:27 mg/kg VHTODE 25,335,83

**SAFETY PROFILE:** Poison by ingestion, subcutaneous, and intraperitoneal routes. An experimental teratogen. Experimental reproductive effects. A skin irritant. When heated to decomposition it emits acrid smoke and fumes.