

4.1.4 Saturated Ketones, C₁₂ - C₃₅

(SR)-5,9-Dimethyl-2-decanone [500044-01-9] C₁₂H₂₄O MW = 184.32 265

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
295.15	828.0 ± 1.0	1963-orb/sch

2,2-Dimethyl-3-(1-methylethyl)-4-heptanone [500044-02-0] C₁₂H₂₄O MW = 184.32 266

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	847.6 ± 1.0	1950-naz/kot-1

2-Dodecanone [6175-49-1] C₁₂H₂₄O MW = 184.32 267

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
303.15	819.8 ± 1.0	1936-ceu

2,2,4,4,5,5-Hexamethyl-3-hexanone [5340-46-5] C₁₂H₂₄O MW = 184.32 268

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation $\sigma_w = 0.000$.

Coefficient	$\rho = A + BT$
<i>A</i>	1074.40
<i>B</i>	-0.730

Table 2. Experimental values with uncertainties and deviation from calculated values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m ⁻³	Ref.
288.15	843.4 ± 6.0	-20.65	1933-fav/naz ¹⁾
293.15	860.4 ± 1.0	-0.00	1953-per/wag
303.15	853.1 ± 1.0	0.00	1953-per/wag
313.15	845.8 ± 1.0	-0.00	1953-per/wag

¹⁾ Not included in calculation of linear coefficients.

cont.

2,2,4,4,5,5-Hexamethyl-3-hexanone (cont.)**Table 3.** Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
290.00	862.7 ± 0.9
293.15	860.4 ± 0.8
298.15	856.7 ± 0.7
310.00	848.1 ± 0.8
320.00	840.8 ± 1.1

2-Methyl-3-undecanone

[6315-95-3]

C₁₂H₂₄O

MW = 184.32

269

Table 1. Experimental values with uncertainties.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
288.15	828.6 ± 2.0	1912-pic/ken ¹⁾
293.15	826.4 ± 1.0	1914-low
293.15	826.4 ± 1.0	Recommended

¹⁾ Not included in calculation of recommended value.**2-Methyl-5-undecanone**

[50639-02-6]

C₁₂H₂₄O

MW = 184.32

270

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	826.8 ± 1.0	1944-pow/hag

4-Methyl-3-undecanone

[500023-81-4]

C₁₂H₂₄O

MW = 184.32

271

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
298.15	828.0 ± 2.0	1954-dub/luf-1

2,6,8-Trimethyl-4-nonanone

[123-18-2]

C₁₂H₂₄O

MW = 184.32

272

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	816.6 ± 1.0	1958-ano-13

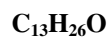
6,10-Dimethyl-2-undecanone**[1604-34-8]****MW = 198.35****273**

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction): $\sigma_{c,w} = 2.1033 \cdot 10^{-1}$ (combined temperature ranges, weighted), $\sigma_{c,uw} = 7.1342 \cdot 10^{-2}$ (combined temperature ranges, unweighted).

Coefficient	T = 293.15 to 350.00 K $\rho = A + BT + CT^2 + DT^3 + \dots$
A	$1.04386 \cdot 10^3$
B	$-7.27571 \cdot 10^{-1}$

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)
293.15	830.80 ± 1.00	0.22	1988-bag/gur(□)	343.15	794.20 ± 1.00	0.00	1988-bag/gur(□)
303.15	823.10 ± 1.00	-0.20	1988-bag/gur(□)	293.15	830.80 ± 1.00	0.22	1990-bag/bel(×)
313.15	815.60 ± 1.00	-0.42	1988-bag/gur(□)	300.00	825.50 ± 1.00	-0.09	1990-bag/bel(×)
323.15	809.10 ± 1.00	0.35	1988-bag/gur(□)	325.00	807.40 ± 1.00	-0.00	1990-bag/bel(×)
333.15	801.40 ± 1.00	-0.07	1988-bag/gur(□)	350.00	789.20 ± 1.00	-0.01	1990-bag/bel(×)

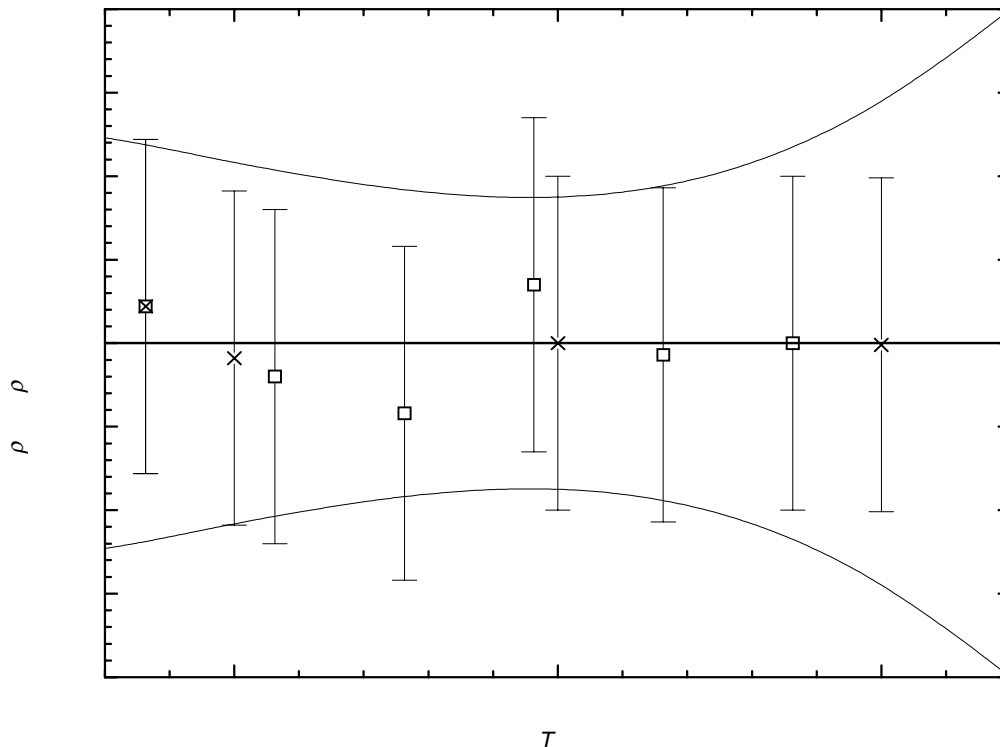


Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The curves above and below the zero line indicate the calculated error region of the recommended values given in Table 3. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

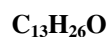
6,10-Dimethyl-2-undecanone (cont.)**Table 3.** Recommended values (fit to the reliable experimental values according to the equations

$$\rho = A + BT + CT^2 + DT^3 + \dots \text{ or } \rho = [1 + 1.75(1 - T/T_c)^{1/3} + 0.75(1 - T/T_c)][\rho_c + A(T_c - T) + B(T_c - T)^2 + C(T_c - T)^3 + D(T_c - T)^4].$$

$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$
290.00	832.87 ± 1.23	310.00	818.32 ± 0.94	350.00	789.21 ± 1.41
293.15	830.58 ± 1.19	320.00	811.04 ± 0.86	360.00	781.94 ± 2.00
298.15	826.94 ± 1.11	330.00	803.76 ± 0.88		
300.00	825.59 ± 1.08	340.00	796.49 ± 1.05		

2,2,3,3,5,5-Hexamethyl-4-heptanone

[500026-41-5]



MW = 198.35

274

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation $\sigma_w = 0.125$.

Coefficient	$\rho = A + BT$
<i>A</i>	1083.90
<i>B</i>	-0.720

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	872.7 ± 0.6	-0.13	1953-per/wag
303.15	865.6 ± 0.6	-0.03	1953-per/wag
313.15	858.6 ± 0.6	0.17	1953-per/wag

Table 3. Recommended values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
290.00	875.1 ± 0.9
293.15	872.8 ± 0.7
298.15	869.2 ± 0.6
310.00	860.7 ± 0.6
320.00	853.5 ± 1.0

2-Tridecanone

[593-08-8]

C₁₃H₂₆O

MW = 198.35

275

Table 1. Experimental and recommended values with uncertainties.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
301.15	822.9 ± 2.0	1882-kra-1 ¹⁾
308.15	813.0 ± 2.0	1919-eyk ¹⁾
352.55	763.0 ± 2.0	1919-eyk ¹⁾
303.15	821.6 ± 1.0	1936-ceu
303.15	821.7 ± 1.0	Recommended

¹⁾ Not included in calculation of recommended value.**6-Tridecanone**

[22026-12-6]

C₁₃H₂₆O

MW = 198.35

276

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
298.15	824.4 ± 1.0	1934-von/man

7-Tridecanone

[462-18-0]

C₁₃H₂₆O

MW = 198.35

277

Table 1. Fit with estimated *B* coefficient for 2 accepted points. Deviation $\sigma_w = 3.075$.

Coefficient	$\rho = A + BT$
<i>A</i>	1110.98
<i>B</i>	-0.980

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
307.65	812.6 ± 2.0	3.07	1919-eyk
352.15	762.8 ± 2.0	-3.08	1919-eyk

Table 3. Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
293.15	823.7 ± 4.0
298.15	818.8 ± 3.9
310.00	807.2 ± 3.7
320.00	797.4 ± 3.6
330.00	787.6 ± 3.6
340.00	777.8 ± 3.6
350.00	768.0 ± 3.7
360.00	758.2 ± 3.9

2,2,3,3,4,4,5-Heptamethyl-4-heptanone [500026-42-6] C₁₄H₂₈O MW = 212.38 278

Table 1. Fit with estimated B coefficient for 3 accepted points. Deviation $\sigma_w = 0.082$.

Coefficient	$\rho = A + BT$
A	1086.81
B	-0.700

Table 2. Experimental values with uncertainties and deviation from calculated values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg·m ⁻³	Ref.
293.15	881.5 ± 0.7	-0.10	1953-per/wag
303.15	874.7 ± 0.7	0.10	1953-per/wag
313.15	867.6 ± 0.7	-0.00	1953-per/wag

Table 3. Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³
290.00	883.8 ± 0.9
293.15	881.6 ± 0.8
298.15	878.1 ± 0.7
310.00	869.8 ± 0.7
320.00	862.8 ± 1.1

2,2-Dimethyl-3-tridecanone [500045-10-3] C₁₅H₃₀O MW = 226.4 279

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³	Ref.
293.15	854.3 ± 1.5	1960-pet/sok

6,10-Dimethyl-2-tridecanone [109091-97-6] C₁₅H₃₀O MW = 226.4 280

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³	Ref.
293.15	844.3 ± 2.0	1961-shv/pet

2-Pentadecanone [2345-28-0] C₁₅H₃₀O MW = 226.4 281

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
312.15	818.2 ± 2.0	1882-kra-1

6,10-Dimethyl-14-pentadecanone [101791-03-1] C₁₇H₃₄O MW = 254.46 282

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	843.4 ± 2.0	1960-naz/mak

2-Heptadecanone [2922-51-2] C₁₇H₃₄O MW = 254.46 283

Table 1. Experimental and recommended values with uncertainties.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
321.15	814.0 ± 3.0	1882-kra-1 ¹⁾
352.75	769.9 ± 3.0	1919-eyk ¹⁾
273.15	844.0 ± 3.0	1919-wil/sch ¹⁾
293.15	834.0 ± 2.0	1919-wil/sch
293.15	834.0 ± 2.0	Recommended

¹⁾ Not included in calculation of recommended value.

6-Methyl-6-propyl-4-tridecanone [101791-04-2] C₁₇H₃₄O MW = 254.46 284

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	836.5 ± 1.0	1961-des/del

2-Octadecanone [7373-13-9] C₁₈H₃₆O MW = 268.48 285

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
303.15	832.7 ± 1.0	1950-nam/nif

3-Octadecanone

[18261-92-2]

C₁₈H₃₆O

MW = 268.48

286

Table 1. Fit with estimated *B* coefficient for 2 accepted points. Deviation $\sigma_w = 0.421$.

Coefficient	$\rho = A + BT$
<i>A</i>	1118.33
<i>B</i>	-0.980

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
352.05	772.9 ± 2.0	-0.42	1919-eyk
382.40	744.0 ± 2.0	0.42	1919-eyk

Table 3. Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
350.00	775.3 ± 2.5
360.00	765.5 ± 2.0
370.00	755.7 ± 1.9
380.00	745.9 ± 2.2
390.00	736.1 ± 2.9

2,2,5,5-Tetramethyl-4,4-di-tert-butyl-3-hexanone

[500044-04-2]

C₁₈H₃₆O

MW = 268.48

287

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
288.15	883.8 ± 2.0	1933-fav/naz

6,10,14-Trimethyl-2-pentadecanone

[502-69-2]

C₁₈H₃₆O

MW = 26

288

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction): $\sigma_{c,w} = 2.9554 \cdot 10^{-1}$ (combined temperature ranges, weighted), $\sigma_{c,uw} = 1.3849 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

Coefficient	$T = 293.15 \text{ to } 343.15 \text{ K}$ $\rho = A + BT + CT^2 + DT^3 + \dots$
<i>A</i>	$1.04276 \cdot 10^3$
<i>B</i>	$-7.05326 \cdot 10^{-1}$

cont.

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)
298.15	831.70 ± 1.00	-0.77	1928-fis/low(\square)	313.15	822.00 ± 0.50	0.11	1988-bag/gur(\circ)
298.15	832.30 ± 1.00	-0.17	1928-fis/low(\square)	323.15	814.80 ± 0.50	-0.03	1988-bag/gur(\circ)
293.15	836.60 ± 0.50	0.61	1988-bag/gur(\circ)	333.15	807.80 ± 0.50	0.02	1988-bag/gur(\circ)
303.15	828.90 ± 0.50	-0.04	1988-bag/gur(\circ)	343.15	801.00 ± 0.50	0.27	1988-bag/gur(\circ)

Further references: [1960-sar/mol].

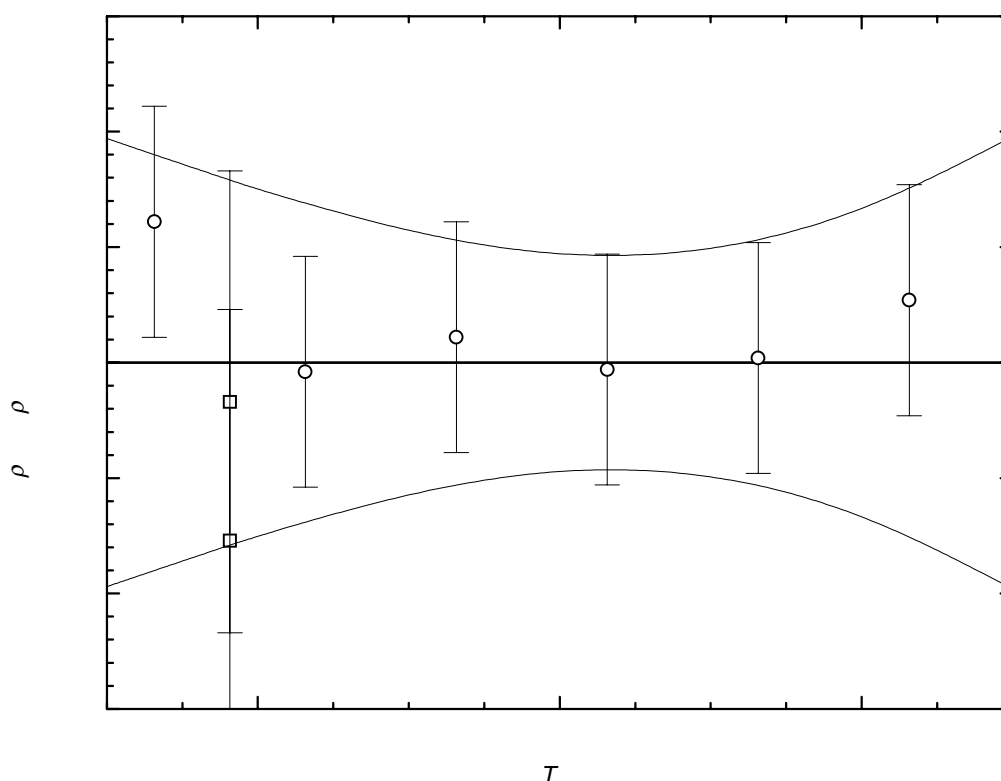


Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The curves above and below the zero line indicate the calculated error region of the recommended values given in Table 3. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Recommended values (fit to the reliable experimental values according to the equations

$$\rho = A + BT + CT^2 + DT^3 + \dots \text{ or } \rho = [1 + 1.75(1 - T/T_c)^{1/3} + 0.75(1 - T/T_c)][\rho_c + A(T_c - T) + B(T_c - T)^2 + C(T_c - T)^3 + D(T_c - T)^4]$$

$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$
290.00	838.22 ± 0.97	300.00	831.16 ± 0.75	330.00	810.00 ± 0.47
293.15	835.99 ± 0.90	310.00	824.11 ± 0.56	340.00	802.95 ± 0.64
298.15	832.47 ± 0.79	320.00	817.06 ± 0.45	350.00	795.90 ± 0.98

2-Nonadecanone [629-66-3] C₁₉H₃₈O MW = 282.51 289

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
328.65	810.8 ± 2.0	1882-kra-1

4-Nonadecanone [116530-28-0] C₁₉H₃₈O MW = 282.51 290

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
352.15	772.2 ± 1.0	1919-eyk

6,10,14-Trimethyl-2-hexadecanone [102013-45-6] C₁₉H₃₈O MW = 282.51 291

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	839.1 ± 2.0	1960-naz/mak

6,10,14,15,15-Pentamethyl-2-hexadecanone [114161-32-9] C₂₁H₄₂O MW = 310.56 292

Table 1. Experimental value with uncertainty.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	851.1 ± 2.0	1960-naz/mak

12-Tricosanone [540-09-0] C₂₃H₄₆O MW = 338.62 293

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation $\sigma_w = 3.136$.

Coefficient	$\rho = A + BT$
<i>A</i>	1144.78
<i>B</i>	-0.990

cont.

Table 2. Experimental values with uncertainties and deviation from calculated values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m ⁻³	Ref.
342.15	803.6 ± 1.0	-2.45	1882-kra-1
343.85	802.4 ± 1.0	-1.97	1882-kra-1
364.05	788.8 ± 1.0	4.43	1882-kra-1

Table 3. Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³
340.00	808.2 ± 3.4
350.00	798.3 ± 3.3
360.00	788.4 ± 3.4
370.00	778.5 ± 3.8

14-Heptacosanone

[542-50-7]

C₂₇H₅₄O

MW = 394.73

294

Table 1. Fit with estimated B coefficient for 3 accepted points. Deviation $\sigma_w = 0.460$.

Coefficient	$\rho = A + BT$
A	1046.44
B	-0.700

Table 2. Experimental values with uncertainties and deviation from calculated values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m ⁻³	Ref.
349.45	801.3 ± 1.0	-0.52	1882-kra-1
353.95	798.6 ± 1.0	-0.07	1882-kra-1
364.05	792.2 ± 1.0	0.60	1882-kra-1

Table 3. Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³
340.00	808.4 ± 1.9
350.00	801.4 ± 1.2
360.00	794.4 ± 1.1
370.00	787.4 ± 1.7

16-Hentriacontanone**[502-73-8]****C₃₁H₆₂O****MW = 450.83****295****Table 1.** Fit with estimated *B* coefficient for 5 accepted points. Deviation $\sigma_w = 0.536$.

Coefficient	$\rho = A + BT$
<i>A</i>	1031.81
<i>B</i>	-0.650

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.	$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
355.95	799.7 ± 2.0	-0.74	1882-kra-1	453.15	738.0 ± 2.0	0.74	1950-boe/ned
364.05	794.7 ± 2.0	-0.48	1882-kra-1	513.15	698.0 ± 2.5	-0.26	1950-boe/ned ¹⁾
363.15	796.0 ± 2.0	0.24	1950-boe/ned	573.15	657.0 ± 2.5	-2.26	1950-boe/ned ¹⁾
403.15	770.0 ± 2.0	0.24	1950-boe/ned				

Table 3. Recommended values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
350.00	804.3 ± 2.3	390.00	778.3 ± 1.4	430.00	752.3 ± 2.5
360.00	797.8 ± 2.0	400.00	771.8 ± 1.5	440.00	745.8 ± 3.0
370.00	791.3 ± 1.6	410.00	765.3 ± 1.8	450.00	739.3 ± 3.4
380.00	784.8 ± 1.4	420.00	758.8 ± 2.1	460.00	732.8 ± 3.9

18-Pentatriacontanone**[504-53-0]****C₃₅H₇₀O****MW = 506.94****296****Table 1.** Fit with estimated *B* coefficient for 2 accepted points. Deviation $\sigma_w = 0.026$.

Coefficient	$\rho = A + BT$
<i>A</i>	1058.24
<i>B</i>	-0.720

Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
361.55	797.9 ± 1.0	-0.03	1882-kra-1
368.15	793.2 ± 1.0	0.03	1882-kra-1

Table 3. Recommended values.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
360.00	799.0 ± 1.0
370.00	791.8 ± 1.0