

3.4 Diethers

Dimethoxymethane [109-87-5] **C₃H₈O₂** **MW = 76.1** **689**

Table 1. Fit with estimated *B* coefficient for 9 accepted points. Deviation $\sigma_w = 0.340$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1232.21 |
| <i>B</i> | -1.270 |

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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|------------------------|----------------------|--|--|--------------|
| 293.15 | 860.4 ± 1.0 | 0.49 | 1880-bru-1 | 288.15 | 866.4 ± 0.5 | 0.17 | 1928-tim/mar |
| 291.35 | 862.1 ± 1.0 | -0.09 | 1897-bru-1 | 303.15 | 847.4 ± 0.5 | 0.22 | 1928-tim/mar |
| 273.15 | 885.5 ± 0.6 | 0.14 | 1910-tim | 293.15 | 859.3 ± 0.6 | -0.61 | 1948-vog-8 |
| 285.55 | 877.3 ± 3.0 | 7.73 | 1911-sch ¹⁾ | 287.15 | 866.9 ± 0.6 | -0.63 | 1948-vog-8 |
| 273.15 | 885.4 ± 0.5 | 0.12 | 1928-tim/mar | 293.15 | 860.1 ± 0.6 | 0.19 | 1963-lef/sun |

¹⁾ Not included in calculation of linear coefficients.

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 270.00 | 889.3 ± 0.9 | 290.00 | 863.9 ± 0.6 | 298.15 | 853.6 ± 0.8 |
| 280.00 | 876.6 ± 0.7 | 293.15 | 859.9 ± 0.7 | 310.00 | 838.5 ± 1.1 |

1,1-Dimethoxyethane [534-15-6] **C₄H₁₀O₂** **MW = 90.12** **690**

Table 1. Fit with estimated *B* coefficient for 6 accepted points. Deviation $\sigma_w = 0.936$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1182.35 |
| <i>B</i> | -1.130 |

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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|------------|----------------------|--|--|------------|
| 335.85 | 801.3 ± 1.0 | -1.54 | 1883-sch-3 | 293.15 | 851.6 ± 0.6 | 0.51 | 1948-vog-8 |
| 335.85 | 801.3 ± 1.0 | -1.54 | 1883-sch-3 | 314.15 | 827.9 ± 0.6 | 0.54 | 1948-vog-8 |
| 336.15 | 801.3 ± 1.0 | -1.20 | 1884-sch-6 | 333.55 | 806.3 ± 0.8 | 0.86 | 1948-vog-8 |

cont.

Dimethoxymethane (cont.)

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 854.6 ± 1.5 | 310.00 | 832.0 ± 1.2 | 330.00 | 809.4 ± 1.3 |
| 293.15 | 851.1 ± 1.4 | 320.00 | 820.7 ± 1.2 | 340.00 | 798.1 ± 1.4 |
| 298.15 | 845.4 ± 1.3 | | | | |

1,2-Dimethoxyethane [110-71-4] C₄H₁₀O₂ MW = 90.12 691

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction): $\sigma_{\text{c,w}} = 1.8844$ (combined temperature ranges, weighted), $\sigma_{\text{c,uw}} = 4.1174 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

| Coefficient | T = 198.15 to 333.00 K $\rho = A + BT + CT^2 + DT^3 + \dots$ |
|-------------|---|
| A | $1.04210 \cdot 10^3$ |
| B | $-1.64857 \cdot 10^{-1}$ |
| C | $-1.48205 \cdot 10^{-3}$ |

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) |
|----------------------|--|--|----------------------------|----------------------|--|--|-------------------------|
| 198.15 | 957.00 ± 1.50 | 5.75 | 1965-car/tol(∇) | 288.00 | 870.30 ± 0.20 | -1.40 | 1978-sha/bai(□) |
| 203.15 | 952.00 ± 1.50 | 4.55 | 1965-car/tol(∇) | 293.40 | 867.20 ± 0.20 | 1.04 | 1978-sha/bai(□) |
| 213.15 | 942.00 ± 1.50 | 2.37 | 1965-car/tol(∇) | 297.50 | 862.70 ± 0.20 | 0.81 | 1978-sha/bai(□) |
| 223.15 | 932.00 ± 1.50 | 0.48 | 1965-car/tol(∇) | 301.00 | 858.80 ± 0.20 | 0.59 | 1978-sha/bai(□) |
| 233.15 | 923.00 ± 1.50 | -0.11 | 1965-car/tol(∇) | 307.30 | 851.70 ± 0.20 | 0.21 | 1978-sha/bai(□) |
| 243.15 | 913.00 ± 1.50 | -1.40 | 1965-car/tol(∇) | 312.70 | 845.70 ± 0.20 | 0.06 | 1978-sha/bai(□) |
| 248.15 | 908.00 ± 1.50 | -1.93 | 1965-car/tol(∇) | 319.50 | 838.20 ± 0.20 | 0.06 | 1978-sha/bai(□) |
| 253.15 | 903.00 ± 1.50 | -2.39 | 1965-car/tol(∇) | 326.70 | 830.20 ± 0.20 | 0.14 | 1978-sha/bai(□) |
| 263.15 | 893.00 ± 1.00 | -3.09 | 1965-car/tol(∇) | 333.00 | 823.10 ± 0.20 | 0.24 | 1978-sha/bai(□) |
| 273.15 | 883.00 ± 1.00 | -3.50 | 1965-car/tol(∇) | 293.15 | 866.71 ± 0.20 | 0.30 | 1994-sen(○) |
| 278.15 | 879.00 ± 1.00 | -2.59 | 1965-car/tol(∇) | 298.15 | 861.24 ± 0.20 | 0.03 | 1994-sen(○) |
| 283.15 | 874.00 ± 1.00 | -2.60 | 1965-car/tol ¹⁾ | 303.15 | 855.80 ± 0.20 | -0.13 | 1994-sen(○) |
| 298.15 | 859.00 ± 1.00 | -2.21 | 1965-car/tol ¹⁾ | 313.15 | 844.55 ± 0.20 | -0.60 | 1994-sen(○) |
| 273.15 | 887.60 ± 0.50 | 1.10 | 1972-can(Δ) | 328.15 | 827.81 ± 0.20 | -0.61 | 1994-sen(○) |

¹⁾ Not included in Fig. 1.

Further references: [1893-lip, 1912-cla-1, 1937-pal/hon, 1945-cap, 1951-boh/sch, 1954-gis/mas, 1960-ryu-1, 1963-wal/mat, 1964-bur, 1965-for/pli, 1967-tom/tur, 1974-ren/jus, 1977-bur/lee, 1978-kus, 1980-bru, 1981-kor/kov, 1982-ano-1, 1985-alk/ari, 1991-aiz/kat, 1991-cab/bel, 1991-tre, 1996-pal/sin, 1996-ste/chi-1, 1998-pal/sha].

cont.

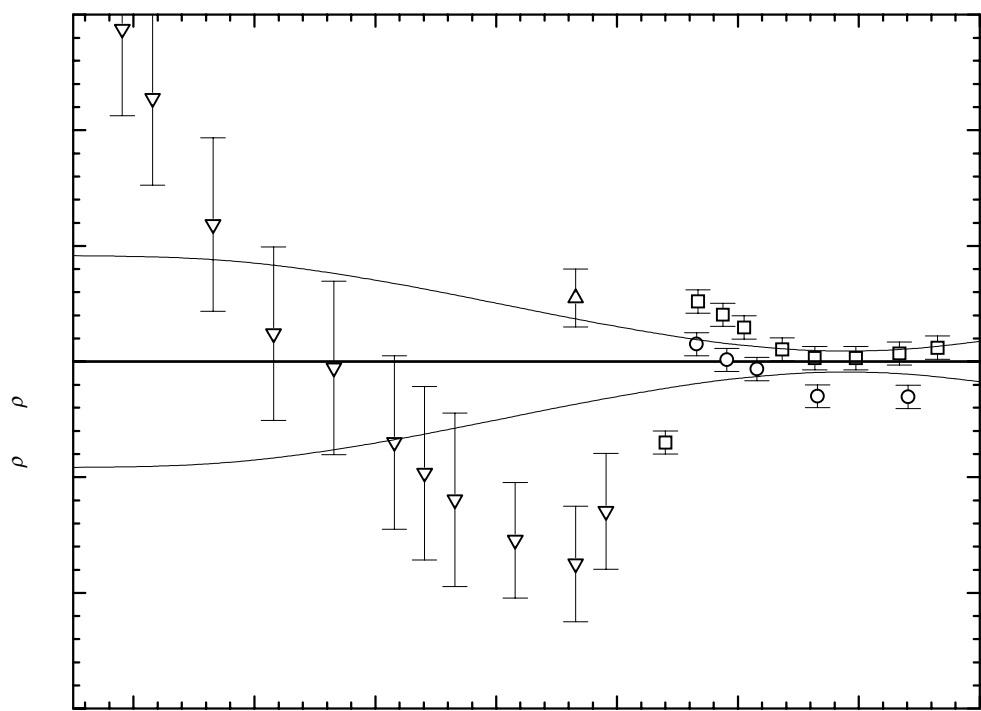


Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The curves above and below the zero line indicate the calculated error region of the recommended values given in Table 3. The error bars represent the experimental errors. (Error bars smaller than the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

Table 3. Recommended values (fit to the reliable experimental values according to the equations $\rho = A + BT + CT^2 + DT^3 + \dots$ or $\rho = [1 + 1.75(1 - T/T_c)^{1/3} + 0.75(1 - T/T_c)][\rho_c + A(T_c - T) + B(T_c - T)^2 + C(T_c - T)^3 + D(T_c - T)^4]$).

| $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 190.00 | 957.28 ± 1.83 | 250.00 | 908.26 ± 1.22 | 298.15 | 861.21 ± 0.31 |
| 200.00 | 949.85 ± 1.82 | 260.00 | 899.06 ± 1.01 | 300.00 | 859.26 ± 0.29 |
| 210.00 | 942.13 ± 1.79 | 270.00 | 889.55 ± 0.80 | 310.00 | 848.57 ± 0.19 |
| 220.00 | 934.10 ± 1.71 | 280.00 | 879.75 ± 0.60 | 320.00 | 837.59 ± 0.17 |
| 230.00 | 925.79 ± 1.58 | 290.00 | 869.66 ± 0.43 | 330.00 | 826.31 ± 0.22 |
| 240.00 | 917.17 ± 1.41 | 293.15 | 866.41 ± 0.38 | 340.00 | 814.73 ± 0.35 |

Diethoxymethane [462-95-3] C₅H₁₂O₂ MW = 104.15 692

Table 1. Fit with estimated *B* coefficient for 5 accepted points. Deviation σ_w = 0.399.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1142.40 |
| <i>B</i> | -1.064 |

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. |
|----------------------|--|--|------------|
| 293.15 | 830.8 ± 0.6 | 0.31 | 1948-vog-8 |
| 313.35 | 809.4 ± 0.6 | 0.40 | 1948-vog-8 |
| 332.45 | 789.3 ± 0.8 | 0.62 | 1948-vog-8 |
| 293.15 | 830.1 ± 0.5 | -0.40 | 1969-man |
| 298.15 | 824.8 ± 0.5 | -0.33 | 1969-man |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 833.8 ± 0.8 | 310.00 | 812.6 ± 0.7 | 330.00 | 791.3 ± 1.1 |
| 293.15 | 830.5 ± 0.7 | 320.00 | 801.9 ± 0.9 | 340.00 | 780.6 ± 1.3 |
| 298.15 | 825.2 ± 0.7 | | | | |

2,2-Dimethoxypropane [77-76-9] C₅H₁₂O₂ MW = 104.15 693

Table 1. Fit with estimated *B* coefficient for 6 accepted points. Deviation σ_w = 0.231.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1172.26 |
| <i>B</i> | -1.100 |

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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|--------------|----------------------|--|--|--------------|
| 293.15 | 849.50 ± 0.3 | -0.30 | 1988-bag/gur | 323.15 | 817.10 ± 0.3 | 0.30 | 1988-bag/gur |
| 303.15 | 838.70 ± 0.3 | -0.10 | 1988-bag/gur | 333.15 | 805.80 ± 0.3 | 0.00 | 1988-bag/gur |
| 313.15 | 828.10 ± 0.3 | 0.30 | 1988-bag/gur | 343.15 | 794.60 ± 0.3 | -0.20 | 1988-bag/gur |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 853.3 ± 0.7 | 310.00 | 831.3 ± 0.4 | 340.00 | 798.3 ± 0.6 |
| 293.15 | 849.8 ± 0.6 | 320.00 | 820.3 ± 0.4 | 350.00 | 787.3 ± 0.7 |
| 298.15 | 844.3 ± 0.5 | 330.00 | 809.3 ± 0.4 | | |

1-Ethoxy-2-methoxyethane

[5137-45-1]

C₅H₁₂O₂

MW = 104.15

694

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. |
|----------------------|--|----------------------------|
| 293.15 | 852.9 ± 1.5 | 1937-pal/hon ¹⁾ |
| 293.15 | 825.0 ± 5.0 | 1966-mik/mik ¹⁾ |
| 298.15 | 846.0 ± 0.4 | 1978-kus |
| 298.15 | 846.0 ± 0.4 | Recommended |

¹⁾ Not included in calculation of recommended value.

1,1-Diethoxyethane

[105-57-7]

C₆H₁₄O₂

MW = 118.18

695

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation σ_{w} = 0.606.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1134.13 |
| <i>B</i> | -1.050 |

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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|--------------------------|----------------------|--|--|----------------------------|
| 293.15 | 831.4 ± 2.0 | 5.08 | 1880-bru-1 ¹⁾ | 333.65 | 784.3 ± 0.8 | 0.50 | 1948-vog-8 |
| 376.35 | 736.3 ± 2.0 | -2.66 | 1883-sch-3 ¹⁾ | 293.15 | 825.4 ± 0.6 | -0.92 | 1967-dei |
| 376.35 | 736.3 ± 2.0 | -2.66 | 1884-sch-6 ¹⁾ | 293.15 | 821.8 ± 2.0 | -4.52 | 1968-pih/hei ¹⁾ |
| 293.15 | 826.4 ± 0.6 | 0.08 | 1948-vog-8 | 313.15 | 828.0 ± 1.5 | 22.68 | 1977-bur/lee ¹⁾ |
| 314.75 | 804.2 ± 0.6 | 0.56 | 1948-vog-8 | | | | |

¹⁾ Not included in calculation of linear coefficients.

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 829.6 ± 0.8 | 310.00 | 808.6 ± 0.7 | 330.00 | 787.6 ± 1.0 |
| 293.15 | 826.3 ± 0.8 | 320.00 | 798.1 ± 0.8 | 340.00 | 777.1 ± 1.2 |
| 298.15 | 821.1 ± 0.7 | | | | |

1,2-Diethoxyethane

[629-14-1]

C₆H₁₄O₂

MW = 118.18

696

Table 1. Fit with estimated *B* coefficient for 6 accepted points. Deviation σ_{w} = 0.288.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1139.30 |
| <i>B</i> | -1.020 |

cont.

1,2-Diethoxyethane (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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|----------------------------|----------------------|--|--|----------------|
| 273.15 | 799.3 ± 3.0 | -61.39 | 1859-wur ¹⁾ | 293.15 | 840.1 ± 0.4 | -0.14 | 1969-man |
| 273.15 | 862.8 ± 1.5 | 2.11 | 1893-lip ¹⁾ | 298.15 | 835.1 ± 0.4 | -0.11 | 1969-man |
| 293.15 | 848.4 ± 1.5 | 8.11 | 1893-lip ¹⁾ | 298.15 | 835.1 ± 0.4 | -0.08 | 1978-kus |
| 303.15 | 842.1 ± 3.0 | 12.01 | 1954-gis/mas ¹⁾ | 293.15 | 840.3 ± 0.4 | 0.01 | 1982-ano-1 |
| 293.15 | 848.7 ± 3.0 | 8.37 | 1965-for/pli ¹⁾ | 298.15 | 836.2 ± 1.0 | 1.02 | 1982-vil/cas-1 |
| 293.15 | 836.8 ± 3.0 | -3.49 | 1965-kut/fil ¹⁾ | 298.15 | 836.2 ± 1.0 | 0.98 | 1984-kum/kim |
| 293.15 | 827.5 ± 3.0 | -12.79 | 1966-mik/mik ¹⁾ | | | | |

¹⁾ Not included in calculation of linear coefficients.

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 | 843.5 ± 1.8 |
| 293.15 | 840.3 ± 0.9 |
| 298.15 | 835.2 ± 0.8 |

1,4-Dimethoxybutane [13179-96-9] C₆H₁₄O₂ MW = 118.18 697

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 | 852.9 ± 0.5 | 1964-bur |

1,1-Dimethoxy-2-methylpropane [41632-89-7] C₆H₁₄O₂ MW = 118.18 698

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 | 844.6 ± 0.4 | 1953-ano-16 |

1-Methoxy-2-propoxyethane [500005-28-7] C₆H₁₄O₂ MW = 118.18 699

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation σ_w = 0.071.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1146.11 |
| <i>B</i> | -1.020 |

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. |
|----------------------|--|--|--------------|
| 293.15 | 847.2 ± 0.8 | 0.10 | 1937-pal/hon |
| 303.15 | 837.0 ± 0.8 | 0.10 | 1937-pal/hon |
| 298.15 | 842.0 ± 0.4 | -0.05 | 1978-kus |

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 | 850.3 ± 0.7 |
| 293.15 | 847.1 ± 0.6 |
| 298.15 | 842.0 ± 0.6 |
| 310.00 | 829.9 ± 0.8 |

Bis(1-methylethoxy)methane [2568-89-0] $\text{C}_7\text{H}_{16}\text{O}_2$ MW = 132.2 700

Table 1. Fit with estimated B coefficient for 4 accepted points. Deviation $\sigma_w = 0.443$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| A | 1102.93 |
| B | -0.970 |

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. |
|----------------------|--|--|------------|
| 293.15 | 818.1 ± 0.6 | -0.48 | 1948-vog-8 |
| 316.35 | 796.5 ± 0.6 | 0.43 | 1948-vog-8 |
| 334.85 | 778.6 ± 0.8 | 0.47 | 1948-vog-8 |
| 359.75 | 753.6 ± 0.8 | -0.38 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 821.6 ± 1.2 | 310.00 | 802.2 ± 0.8 | 340.00 | 773.1 ± 1.0 |
| 293.15 | 818.6 ± 1.1 | 320.00 | 792.5 ± 0.8 | 350.00 | 763.4 ± 1.2 |
| 298.15 | 813.7 ± 1.0 | 330.00 | 782.8 ± 0.8 | 360.00 | 753.7 ± 1.4 |

1-Butoxy-2-methoxyethane [13343-98-1] $\text{C}_7\text{H}_{16}\text{O}_2$ MW = 132.2 701

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 | 840.9 ± 0.3 | 1978-kus |

1,3-Diethoxypropane

[3459-83-4]

C₇H₁₆O₂

MW = 132.2

702

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 | 831.2 ± 0.5 | 1964-bur |

2,2-Diethoxypropane

[126-84-1]

C₇H₁₆O₂

MW = 132.2

703

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. |
|----------------------|--|--------------|
| 298.15 | 868.8 ± 2.0 | 1928-car/adk |
| 293.15 | 829.0 ± 0.6 | 1953-ano-16 |

1,5-Dimethoxypentane

[111-89-7]

C₇H₁₆O₂

MW = 132.2

704

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 | 851.6 ± 0.5 | 1964-bur |

1-Ethoxy-2-(1-methylethoxy)ethane

[18854-32-5]

C₇H₁₆O₂

MW = 132.2

705

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 | 826.0 ± 1.0 | 1966-mik/mik |

1-Ethoxy-2-propoxyethane

[18854-31-4]

C₇H₁₆O₂

MW = 132.2

706

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. |
|----------------------|--|----------------------------|
| 293.15 | 829.9 ± 1.5 | 1966-mik/mik ¹⁾ |
| 298.15 | 832.7 ± 0.4 | 1978-kus |
| 298.15 | 832.7 ± 0.4 | Recommended |

¹⁾ Not included in calculation of recommended value.

1-Methoxy-3-propoxypropane

[89851-49-0]

C₇H₁₆O₂

MW = 132.2

707

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 | 840.3 ± 0.5 | 1964-bur |

1-Butoxy-2-ethoxyethane [4413-13-2] C₈H₁₈O₂ MW = 146.23 708

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. |
|----------------------|--|----------------------------|
| 293.15 | 841.4 ± 1.5 | 1960-mik/pry ¹⁾ |
| 293.15 | 839.5 ± 1.5 | 1966-mik/mik ¹⁾ |
| 298.15 | 833.1 ± 0.6 | 1978-kus |
| 298.15 | 833.1 ± 0.6 | Recommended |

¹⁾ Not included in calculation of recommended value.

1-Butoxy-3-methoxypropane [500028-93-3] C₈H₁₈O₂ MW = 146.23 709

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 | 837.8 ± 0.5 | 1964-bur |

1,4-Diethoxybutane [13344-00-8] C₈H₁₈O₂ MW = 146.23 710

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. |
|----------------------|--|----------|
| 293.15 | 845.5 ± 1.0 | 1934-tal |
| 298.15 | 833.5 ± 0.5 | 1964-bur |

1,6-Dimethoxyhexane [13179-98-1] C₈H₁₈O₂ MW = 146.23 711

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 | 851.8 ± 0.5 | 1964-bur |

2,2-Dimethoxyhexane [98944-43-5] C₈H₁₈O₂ MW = 146.23 712

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 | 852.7 ± 0.7 | 1949-hen/she |

1-(1,1-Dimethylethoxy)-2-ethoxyethane [500028-33-1] C₈H₁₈O₂ MW = 146.23 713

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 | 829.0 ± 2.0 | 1932-nor/rig |

1,1-Dipropoxyethane

[105-82-8]

C₈H₁₈O₂

MW = 146.23

714

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation σ_w = 0.208.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1114.79 |
| <i>B</i> | -0.970 |

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. |
|----------------------|--|--|------------|
| 293.15 | 830.4 ± 0.6 | -0.04 | 1948-vog-8 |
| 314.45 | 809.6 ± 0.6 | -0.17 | 1948-vog-8 |
| 359.45 | 766.5 ± 0.8 | 0.38 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 833.5 ± 1.0 | 310.00 | 814.1 ± 0.7 | 340.00 | 785.0 ± 1.0 |
| 293.15 | 830.4 ± 0.9 | 320.00 | 804.4 ± 0.6 | 350.00 | 775.3 ± 1.2 |
| 298.15 | 825.6 ± 0.8 | 330.00 | 794.7 ± 0.8 | 360.00 | 765.6 ± 1.5 |

1,2-Dipropoxyethane

[18854-56-3]

C₈H₁₈O₂

MW = 146.23

715

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. |
|----------------------|--|--------------|
| 303.15 | 830.7 ± 1.0 | 1954-gis/mas |
| 298.15 | 831.2 ± 0.4 | 1978-kus |

1-Ethoxy-5-methoxypentane

[17315-35-4]

C₈H₁₈O₂

MW = 146.23

716

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 | 843.3 ± 0.5 | 1964-bur |

1-Ethoxy-2-(1-methylpropoxy)ethane

[500035-81-4]

C₈H₁₈O₂

MW = 146.23

717

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 | 832.7 ± 1.0 | 1960-mik/pry |

1-Ethoxy-2-(2-methylpropoxy)ethane [500035-82-5] C₈H₁₈O₂ MW = 146.23 718

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 | 831.0 ± 1.0 | 1966-mik/mik |

1-Methoxy-4-propoxybutane [500028-94-4] C₈H₁₈O₂ MW = 146.23 719

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 | 840.7 ± 0.5 | 1964-bur |

Bis(2-methylpropoxy)methane [2568-91-4] C₉H₂₀O₂ MW = 160.26 720

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation $\sigma_w = 0.299$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1082.64 |
| <i>B</i> | -0.880 |

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. |
|----------------------|--|--|------------|
| 293.15 | 824.4 ± 0.6 | -0.27 | 1948-vog-8 |
| 314.25 | 806.3 ± 0.6 | 0.20 | 1948-vog-8 |
| 334.65 | 788.6 ± 0.8 | 0.45 | 1948-vog-8 |
| 360.15 | 765.4 ± 0.8 | -0.31 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 827.4 ± 1.1 | 320.00 | 801.0 ± 0.7 | 350.00 | 774.6 ± 1.2 |
| 293.15 | 824.7 ± 1.1 | 330.00 | 792.2 ± 0.8 | 360.00 | 765.8 ± 1.4 |
| 298.15 | 820.3 ± 0.9 | 340.00 | 783.4 ± 0.9 | 370.00 | 757.0 ± 1.7 |
| 310.00 | 809.8 ± 0.7 | | | | |

1-Butoxy-4-methoxybutane [91391-43-4] C₉H₂₀O₂ MW = 160.26 721

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 | 840.6 ± 0.5 | 1964-bur |

1-Butoxy-2-propoxyethane

[500011-71-2]

C₉H₂₀O₂

MW = 160.26

722

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 | 831.5 ± 0.3 | 1978-kus |

Dibutoxymethane

[2568-90-3]

C₉H₂₀O₂

MW = 160.26

723

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation σ_w = 0.255.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1076.01 |
| <i>B</i> | -0.820 |

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. |
|----------------------|--|--|------------|
| 293.15 | 835.4 ± 0.6 | -0.23 | 1948-vog-8 |
| 313.65 | 819.1 ± 0.6 | 0.28 | 1948-vog-8 |
| 334.05 | 802.3 ± 0.8 | 0.21 | 1948-vog-8 |
| 359.05 | 781.3 ± 0.8 | -0.29 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 838.2 ± 1.1 | 310.00 | 821.8 ± 0.7 | 340.00 | 797.2 ± 0.9 |
| 293.15 | 835.6 ± 1.0 | 320.00 | 813.6 ± 0.7 | 350.00 | 789.0 ± 1.2 |
| 298.15 | 831.5 ± 0.9 | 330.00 | 805.4 ± 0.8 | 360.00 | 780.8 ± 1.4 |

1,5-Diethoxypentane

[90724-89-3]

C₉H₂₀O₂

MW = 160.26

724

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 | 838.6 ± 0.5 | 1964-bur |

1-Ethoxy-6-methoxyhexane

[93281-63-1]

C₉H₂₀O₂

MW = 160.26

725

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 | 844.0 ± 0.6 | 1964-bur |

1-Ethoxy-2-(3-methylbutoxy)ethane [500035-84-7] C₉H₂₀O₂ MW = 160.26 726

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 | 837.7 ± 1.0 | 1966-mik/mik |

1-Ethoxy-2-pentoxyethane [500035-83-6] C₉H₂₀O₂ MW = 160.26 727

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 | 840.9 ± 1.0 | 1966-mik/mik |

1,1-Bis(2-methylpropoxy)ethane [5669-09-0] C₁₀H₂₂O₂ MW = 174.28 728

Table 1. Fit with estimated B coefficient for 4 accepted points. Deviation sw = 0.194.

| Coefficient | r = A + BT |
|-------------|------------|
| A | 1080.96 |
| B | -0.886 |

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. |
|----------------------|--|--|------------|
| 293.15 | 821.1 ± 0.6 | -0.13 | 1948-vog-8 |
| 317.55 | 799.7 ± 0.6 | 0.09 | 1948-vog-8 |
| 334.75 | 784.7 ± 0.8 | 0.33 | 1948-vog-8 |
| 359.05 | 762.6 ± 0.8 | -0.24 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 824.0 ± 1.1 | 310.00 | 806.3 ± 0.7 | 340.00 | 779.7 ± 0.9 |
| 293.15 | 821.2 ± 1.0 | 320.00 | 797.4 ± 0.7 | 350.00 | 770.9 ± 1.1 |
| 298.15 | 816.8 ± 0.9 | 330.00 | 788.6 ± 0.7 | 360.00 | 762.0 ± 1.4 |

1,2-Bis(2-methylpropoxy)ethane [500028-91-1] C₁₀H₂₂O₂ MW = 174.28 729

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. |
|----------------------|--|--------------|
| 305.15 | 809.6 ± 0.7 | 1954-gis/mas |

1-Butoxy-5-methoxypentane

[41367-99-1]

C₁₀H₂₂O₂

MW = 174.28

730

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 | 840.9 ± 0.5 | 1964-bur |

1,1-Dibutoxyethane

[871-22-7]

C₁₀H₂₂O₂

MW = 174.28

731

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation $\sigma_{\text{w}} = 0.332$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1082.46 |
| <i>B</i> | -0.850 |

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. |
|----------------------|--|--|----------------------------|
| 293.15 | 829.6 ± 2.0 | -3.68 | 1933-hen/mur ¹⁾ |
| 293.15 | 832.9 ± 0.6 | -0.38 | 1948-vog-8 |
| 314.95 | 814.7 ± 0.6 | -0.05 | 1948-vog-8 |
| 334.25 | 798.9 ± 0.8 | 0.55 | 1948-vog-8 |
| 358.55 | 777.9 ± 0.8 | 0.21 | 1948-vog-8 |

¹⁾ Not included in calculation of linear coefficients.

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 836.0 ± 1.1 | 310.00 | 819.0 ± 0.7 | 340.00 | 793.5 ± 0.9 |
| 293.15 | 833.3 ± 1.0 | 320.00 | 810.5 ± 0.6 | 350.00 | 785.0 ± 1.1 |
| 298.15 | 829.0 ± 0.9 | 330.00 | 802.0 ± 0.7 | 360.00 | 776.5 ± 1.4 |

1,2-Dibutoxyethane

[112-48-1]

C₁₀H₂₂O₂

MW = 174.28

732

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 | 835.1 ± 1.5 | 1954-gis/mas ¹⁾ |
| 298.15 | 833.7 ± 1.0 | 1964-bur |
| 298.15 | 831.9 ± 0.4 | 1978-kus |
| 298.15 | 832.1 ± 0.5 | Recommended |

¹⁾ Not included in calculation of recommended value.

1,4-Dipropoxybutane [91179-75-8] C₁₀H₂₂O₂ MW = 174.28 733

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 | 840.9 ± 0.6 | 1934-tal |

Bis(pentyloxy)methane [16849-82-4] C₁₁H₂₄O₂ MW = 188.31 734

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation σ_w = 0.314.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1073.54 |
| <i>B</i> | -0.800 |

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. |
|----------------------|--|--|------------|
| 293.15 | 838.7 ± 0.6 | -0.32 | 1948-vog-8 |
| 314.15 | 822.1 ± 0.6 | -0.12 | 1948-vog-8 |
| 334.05 | 806.6 ± 0.8 | 0.30 | 1948-vog-8 |
| 359.05 | 786.8 ± 0.8 | 0.50 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 841.5 ± 1.1 | 310.00 | 825.5 ± 0.8 | 340.00 | 801.5 ± 0.9 |
| 293.15 | 839.0 ± 1.0 | 320.00 | 817.5 ± 0.7 | 350.00 | 793.5 ± 1.2 |
| 298.15 | 835.0 ± 0.9 | 330.00 | 809.5 ± 0.8 | 360.00 | 785.5 ± 1.4 |

2,2-Dibutoxypropane [141-72-0] C₁₁H₂₄O₂ MW = 188.31 735

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 | 835.4 ± 0.4 | 1954-ano-12 |

1,2-Bis(3-methylbutoxy)ethane [500028-92-2] C₁₂H₂₆O₂ MW = 202.34 736

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. |
|----------------------|--|--------------|
| 305.15 | 818.9 ± 0.7 | 1954-gis/mas |

1,4-Bis(1-methylpropoxy)butane

[500028-96-6]

C₁₂H₂₆O₂

MW = 202.34

737

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 | 823.8 ± 0.6 | 1934-tal |

1,4-Bis(2-methylpropoxy)butane

[500028-95-5]

C₁₂H₂₆O₂

MW = 202.34

738

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 | 826.9 ± 0.6 | 1934-tal |

1,4-Dibutoxybutane

[4161-40-4]

C₁₂H₂₆O₂

MW = 202.34

739

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 | 839.2 ± 0.6 | 1934-tal |

1,1-Diethoxy-2-ethylhexane

[32580-61-3]

C₁₂H₂₆O₂

MW = 202.34

740

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 | 839.4 ± 0.4 | 1954-ano-12 |

1,2-Dipentoxyethane

[500028-90-0]

C₁₂H₂₆O₂

MW = 202.34

741

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. |
|----------------------|--|--------------|
| 305.15 | 831.8 ± 0.6 | 1954-gis/mas |

Bis(hexyloxy)methane

[54815-12-2]

C₁₃H₂₈O₂

MW = 216.36

742

Table 1. Fit with estimated *B* coefficient for 4 accepted points. Deviation σ_w = 0.194.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1064.14 |
| <i>B</i> | -0.760 |

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. |
|----------------------|--|--|------------|
| 293.15 | 841.2 ± 0.6 | -0.15 | 1948-vog-8 |
| 313.85 | 825.5 ± 0.6 | -0.11 | 1948-vog-8 |
| 335.15 | 809.8 ± 0.8 | 0.37 | 1948-vog-8 |
| 359.25 | 791.2 ± 0.8 | 0.09 | 1948-vog-8 |

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 290.00 | 843.7 ± 1.1 | 310.00 | 828.5 ± 0.7 | 340.00 | 805.7 ± 0.9 |
| 293.15 | 841.3 ± 1.0 | 320.00 | 820.9 ± 0.7 | 350.00 | 798.1 ± 1.1 |
| 298.15 | 837.5 ± 0.9 | 330.00 | 813.3 ± 0.7 | 360.00 | 790.5 ± 1.4 |

1,4-Dipentoxybutane [500028-98-8] C₁₄H₃₀O₂ MW = 230.39 743

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 | 840.2 ± 0.6 | 1934-tal |

3.5 Triethers

2,5,8-Trioxanonane [111-96-6] C₆H₁₄O₃ MW = 134.18 744

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction): $\sigma_{c,w} = 9.6773 \cdot 10^{-1}$ (combined temperature ranges, weighted), $\sigma_{c,uw} = 1.3898 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

| Coefficient | T = 253.10 to 353.15 K $\rho = A + BT + CT^2 + DT^3 + \dots$ |
|-------------|---|
| A | $1.23530 \cdot 10^3$ |
| B | $-9.92777 \cdot 10^{-1}$ |

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

| $\frac{T}{K}$ | $\frac{\rho_{exp} \pm 2\sigma_{est}}{kg \cdot m^{-3}}$ | $\frac{\rho_{exp} - \rho_{cal}}{kg \cdot m^{-3}}$ | Ref. (Symbol in Fig. 1) | $\frac{T}{K}$ | $\frac{\rho_{exp} \pm 2\sigma_{est}}{kg \cdot m^{-3}}$ | $\frac{\rho_{exp} - \rho_{cal}}{kg \cdot m^{-3}}$ | Ref. (Symbol in Fig. 1) |
|---------------|--|---|------------------------------|---------------|--|---|----------------------------|
| 293.00 | 944.90 ± 0.50 | 0.48 | 1951-boh/sch(×) | 318.15 | 919.70 ± 0.40 | 0.25 | 1993-ami/pha-1(Δ) |
| 253.10 | 984.40 ± 1.00 | 0.37 | 1960-ryu-1(×) | 298.15 | 939.90 ± 0.50 | 0.59 | 1994-ami/ara ¹⁾ |
| 263.10 | 974.00 ± 1.00 | -0.10 | 1960-ryu-1(×) | 303.15 | 935.60 ± 0.50 | 1.26 | 1994-ami/ara ¹⁾ |
| 273.10 | 964.00 ± 1.00 | -0.18 | 1960-ryu-1(×) | 308.15 | 930.10 ± 0.50 | 0.72 | 1994-ami/ara ¹⁾ |
| 283.10 | 953.40 ± 1.00 | -0.85 | 1960-ryu-1(×) | 313.15 | 925.70 ± 0.50 | 1.28 | 1994-ami/ara(×) |
| 293.10 | 942.90 ± 1.00 | -1.42 | 1960-ryu-1 ¹⁾ | 318.15 | 920.10 ± 0.50 | 0.65 | 1994-ami/ara(×) |
| 298.15 | 938.40 ± 0.30 | -0.91 | 1964-wal/mat(○) | 298.15 | 939.90 ± 0.50 | 0.59 | 1994-ami/gop ¹⁾ |
| 293.15 | 942.70 ± 0.50 | -1.57 | 1967-dei(×) | 308.15 | 930.10 ± 0.50 | 0.72 | 1994-ami/gop ¹⁾ |
| 273.15 | 965.70 ± 0.50 | 1.57 | 1972-can(×) | 318.15 | 920.20 ± 0.50 | 0.75 | 1994-ami/gop(×) |
| 353.15 | 884.80 ± 0.60 | 0.10 | 1981-kor/kov(×) | 298.15 | 939.60 ± 0.50 | 0.29 | 1994-ami/pha ¹⁾ |
| 298.15 | 939.24 ± 0.20 | -0.07 | 1985-det/hvi(□) | 303.15 | 934.60 ± 0.50 | 0.26 | 1994-ami/pha ¹⁾ |
| 298.15 | 939.60 ± 0.40 | 0.29 | 1993-ami/pha ¹⁾ | 308.15 | 929.60 ± 0.50 | 0.22 | 1994-ami/pha ¹⁾ |
| 303.15 | 934.60 ± 0.40 | 0.26 | 1993-ami/pha(∇) | 313.15 | 924.40 ± 0.50 | -0.02 | 1994-ami/pha(×) |
| 308.15 | 929.50 ± 0.40 | 0.12 | 1993-ami/pha(∇) | 318.15 | 919.30 ± 0.50 | -0.15 | 1994-ami/pha(×) |
| 313.15 | 924.40 ± 0.40 | -0.02 | 1993-ami/pha(∇) | 293.15 | 943.57 ± 0.50 | -0.70 | 1994-sen(◆) |
| 298.15 | 939.60 ± 0.40 | 0.29 | 1993-ami/pha-1 ¹⁾ | 298.15 | 938.61 ± 0.50 | -0.70 | 1994-sen ¹⁾ |
| 303.15 | 934.60 ± 0.40 | 0.26 | 1993-ami/pha-1(Δ) | 303.15 | 933.69 ± 0.50 | -0.65 | 1994-sen ¹⁾ |
| 308.15 | 929.50 ± 0.40 | 0.12 | 1993-ami/pha-1(Δ) | 313.15 | 923.63 ± 0.50 | -0.79 | 1994-sen(◆) |
| 313.15 | 924.40 ± 0.40 | -0.02 | 1993-ami/pha-1(Δ) | 328.15 | 908.69 ± 0.50 | -0.83 | 1994-sen(◆) |

¹⁾ Not included in Fig. 1.

Further references: [1925-cre/pit, 1977-bur/lee, 1981-kor/kov, 1982-ano-1, 1982-tre/hal, 1983-alk/boo, 1985-alk/ari, 1988-tre/ben, 1991-tre-4, 1996-pal/sin, 1998-pal/sha].

cont.

2,5,8-Trioxanonane (cont.)

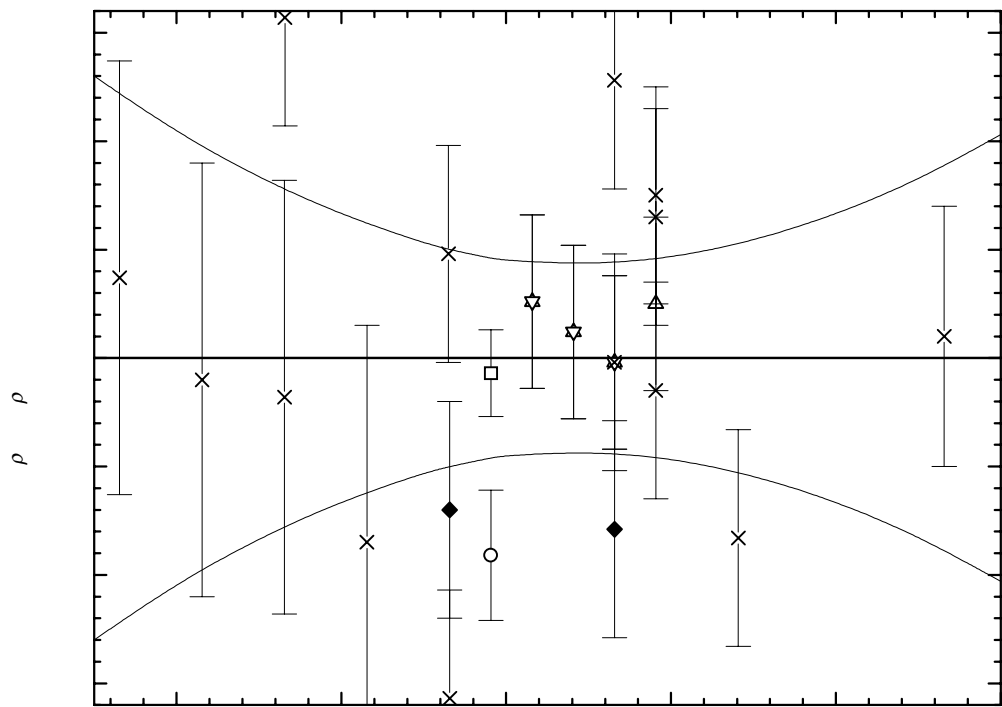


Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The curves above and below the zero line indicate the calculated error region of the recommended values given in Table 3. The error bars represent the experimental errors. (Error bars smaller than the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

Table 3. Recommended values (fit to the reliable experimental values according to the equations $\rho = A + BT + CT^2 + DT^3 + \dots$ or $\rho = [1 + 1.75(1 - T/T_c)^{1/3} + 0.75(1 - T/T_c)][\rho_c + A(T_c - T) + B(T_c - T)^2 + C(T_c - T)^3 + D(T_c - T)^4]$).

| $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 250.00 | 987.11 ± 1.30 | 293.15 | 944.27 ± 0.50 | 330.00 | 907.69 ± 0.54 |
| 260.00 | 977.18 ± 1.04 | 298.15 | 939.31 ± 0.46 | 340.00 | 897.76 ± 0.66 |
| 270.00 | 967.25 ± 0.83 | 300.00 | 937.47 ± 0.45 | 350.00 | 887.83 ± 0.82 |
| 280.00 | 957.33 ± 0.66 | 310.00 | 927.54 ± 0.43 | 360.00 | 877.90 ± 1.03 |
| 290.00 | 947.40 ± 0.53 | 320.00 | 917.62 ± 0.46 | | |

3,5,7-Trioxanonane

[5648-29-3]

C₆H₁₄O₃

MW = 134.18

745

Table 1. Fit with estimated *B* coefficient for 2 accepted points. Deviation $\sigma_w = 0.005$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1198.53 |
| <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. |
|----------------------|--|--|----------|
| 293.15 | 911.2 ± 0.4 | 0.01 | 1969-man |
| 298.15 | 906.3 ± 0.4 | -0.00 | 1969-man |

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 | 914.3 ± 0.4 |
| 293.15 | 911.2 ± 0.4 |
| 298.15 | 906.3 ± 0.4 |

Triethoxymethane

[122-51-0]

C₇H₁₆O₃

MW =148.2

746

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. |
|----------------------|--|----------------------------|
| 291.95 | 897.1 ± 2.0 | 1897-bru-1 ¹⁾ |
| 298.15 | 893.8 ± 2.0 | 1928-car/adk ¹⁾ |
| 288.15 | 896.3 ± 1.0 | 1967-dei-0 |
| 288.15 | 896.3 ± 1.0 | Recommended |

¹⁾Not included in calculation of recommended value.

2,5,8-Trioxadecane

[1002-67-1]

C₇H₁₆O₃

MW = 148.2

747

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 | 922.9 ± 0.4 | 1954-ano-12 |

3,6,9-Trioxaundecane

[112-36-7]

C₈H₁₈O₃

MW = 162.23

748

Table 1. Fit with estimated *B* coefficient for 11 accepted points. Deviation $\sigma_w = 0.582$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1182.72 |
| <i>B</i> | -0.940 |

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. | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$ | Ref. |
|----------------------|--|--|----------------------------|----------------------|--|--|----------------------------|
| 288.15 | 914.1 ± 2.0 | 2.22 | 1925-cre/pit ¹⁾ | 293.15 | 906.5 ± 0.5 | -0.66 | 1968-ano |
| 293.15 | 906.3 ± 0.6 | -0.86 | 1948-vog-8 | 298.15 | 904.3 ± 1.5 | 1.84 | 1971-kus/wad ¹⁾ |
| 315.15 | 886.3 ± 0.6 | -0.18 | 1948-vog-8 | 283.15 | 916.8 ± 0.5 | 0.25 | 1978-rou/per |
| 333.25 | 869.0 ± 0.8 | -0.47 | 1948-vog-8 | 298.15 | 903.3 ± 0.5 | 0.87 | 1978-rou/per |
| 360.25 | 843.5 ± 0.8 | -0.59 | 1948-vog-8 | 313.15 | 888.7 ± 0.5 | 0.32 | 1978-rou/per |
| 293.15 | 908.2 ± 0.8 | 1.04 | 1952-cur/joh | 293.15 | 906.8 ± 0.5 | -0.36 | 1982-ano-1 |
| 293.15 | 907.6 ± 0.6 | 0.44 | 1960-del | | | | |

¹⁾ Not included in calculation of linear coefficients.

Table 3. Recommended values.

| $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ | $\frac{T}{\text{K}}$ | $\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$ |
|----------------------|--|----------------------|--|----------------------|--|
| 280.00 | 919.5 ± 1.0 | 310.00 | 891.3 ± 0.8 | 350.00 | 853.7 ± 1.6 |
| 290.00 | 910.1 ± 0.8 | 320.00 | 881.9 ± 0.9 | 360.00 | 844.3 ± 1.9 |
| 293.15 | 907.2 ± 0.8 | 330.00 | 872.5 ± 1.1 | 370.00 | 834.9 ± 2.2 |
| 298.15 | 902.5 ± 0.8 | 340.00 | 863.1 ± 1.4 | | |

4,7,10-Trioxatridecane

[72072-32-3]

C₁₀H₂₂O₃

MW = 190.28

749

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 | 886.9 ± 0.6 | 1925-cre/pit |

1,1,3-Triethoxyhexane

[101-33-7]

C₁₂H₂₆O₃

MW = 218.34

750

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. |
|----------------------|--|-------------|
| 293.15 | 873.2 ± 0.4 | 1955-ano-13 |
| 293.15 | 873.1 ± 0.5 | 1968-ano |

5,8,11-Trioxapentadecane [112-73-2] C₁₂H₂₆O₃ MW = 218.34 751

Table 1. Fit with estimated *B* coefficient for 3 accepted points. Deviation $\sigma_w = 0.642$.

| Coefficient | $\rho = A + BT$ |
|-------------|-----------------|
| <i>A</i> | 1159.27 |
| <i>B</i> | -0.940 |

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. |
|----------------------|--|--|----------------------------|
| 288.15 | 883.9 ± 2.0 | -4.50 | 1925-cre/pit ¹⁾ |
| 293.15 | 883.8 ± 0.5 | 0.10 | 1968-ano |
| 304.15 | 874.1 ± 0.6 | 0.77 | 1985-alk/ari |
| 298.15 | 878.1 ± 0.6 | -0.90 | 1998-pal/sha |

¹⁾ Not included in calculation of linear coefficients.

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 | 886.7 ± 0.8 |
| 293.15 | 883.7 ± 0.8 |
| 298.15 | 879.0 ± 0.7 |
| 310.00 | 867.9 ± 0.9 |

1,1,3-Tributoxybutane [869-39-6] C₁₆H₃₄O₃ MW = 274.44 752

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 | 868.6 ± 1.0 | 1955-sho/bog |

1,1,3-Triethoxy-4-ethyloctane [500020-24-6] C₁₆H₃₄O₃ MW = 274.44 753

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 | 870.3 ± 0.4 | 1954-ano-12 |

7,10,13-Trioxanonadecane [68191-03-7] C₁₆H₃₄O₃ MW = 274.44 754

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. |
|----------------------|--|--------------|
| 304.15 | 865.1 ± 0.6 | 1985-alk/ari |