

2.1.3 Bromoalkanes, C₆ - C₇

1,2,2,3-Tetrabromohexane [500030-37-5] C₆H₁₀Br₄ MW = 401.76 81

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	2187.30 ± 3.00	1927-bou-1

1,2,3-Tribromohexane [500030-34-2] C₆H₁₁Br₃ MW = 322.87 82

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.
289.15	1942.90 ± 3.00	1927-bou-1

3,3,4-Tribromohexane [49677-06-7] C₆H₁₁Br₃ MW = 322.87 83

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	1943.40 ± 2.00	1929-les/ie -0

1,1,1-Tris(Bromomethyl)propane [6974-30-7] C₆H₁₁Br₃ MW = 322.87 84

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	1912.20 ± 0.70	1949-der/gre

dl-1,4-Dibromo-2,3-dimethylbutane [500035-77-8] C₆H₁₂Br₂ MW = 243.97 85

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	1624.00 ± 3.00	1954-mcc/pro

Meso-1,4-Dibromo-2,3-dimethylbutane [500035-76-7] C₆H₁₂Br₂ MW = 243.97 86

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	1620.00 ± 3.00	1954-mcc/pro

1,2-Dibromohexane [624-20-4] C₆H₁₂Br₂ MW = 243.97 87

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	1560.40 ± 10.00	1930-dyk/lew
293.15	1611.00 ± 20.00	1931-wil
293.15	1577.40 ± 0.70	1932-sch/boo
294.15	1576.70 ± 1.00	1936-you/vog
293.15	1574.50 ± 2.00	1955-kel/gre

1,6-Dibromohexane [629-03-8] C₆H₁₂Br₂ MW = 243.97 88

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	1598.00 ± 1.00	1955-han-1

2,2-Dibromohexane [116530-77-9] C₆H₁₂Br₂ MW = 243.97 89

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.
295.15	1546.30 ± 0.70	1936-you/vog

2,3-Dibromohexane [6423-02-5] C₆H₁₂Br₂ MW = 243.97 90

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	1581.20 ± 1.00	1932-sch/boo

2,5-Dibromohexane [24774-58-1] C₆H₁₂Br₂ MW = 243.97 91

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1578.80 ± 2.00	1951-whi/dea

3,4-Dibromohexane [89583-12-0] C₆H₁₂Br₂ MW = 243.97 92

Table 1. Experimental and recommended values with uncertainties.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1599.50 ± 2.00	1929-les/wie
293.15	1602.70 ± 2.00	1932-sch/boo
293.15	1601.10 ± 2.30	Recommended

1,3-Dibromo-2-(1-methylethyl)propane [64273-85-4] C₆H₁₂Br₂ MW = 243.97 93

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1605.00 ± 1.00	1962-bog/osi

1,2-Dibromo-4-methylpentane [21750-35-6] C₆H₁₂Br₂ MW = 243.97 94

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1548.00 ± 2.00	1930-dyk/lew

1,3-Dibromo-2-methylpentane [500004-88-6] C₆H₁₂Br₂ MW = 243.97 95

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1566.40 ± 1.00	1955-kel/gre

2,3-Dibromo-3-methylpentane [500025-35-4] C₆H₁₂Br₂ MW = 243.97 96

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	1575.20 ± 2.00	1921-par/sim

1,3-Dibromo-2-propylpropane [1781-52-8] C₆H₁₂Br₂ MW = 243.97 97

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	1577.10 ± 1.00	1962-bog/osi

1-Bromo-2,2-dimethylbutane [62168-42-7] C₆H₁₃Br MW = 165.07 98

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.
273.15	1195.60 ± 2.00	1918-fav

1-Bromo-2,3-dimethylbutane [30540-31-9] C₆H₁₃Br MW = 165.07 99

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	1190.00 ± 2.00	1935-lev/mar

1-Bromo-3,3-dimethylbutane [1647-23-0] C₆H₁₃Br MW = 165.07 100

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.
273.15	1165.00 ± 2.00	1909-cla
293.15	1155.60 ± 1.00	1948-sch-4

2-Bromo-2,3-dimethylbutane [594-52-5] C₆H₁₃Br MW = 165.07 101

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.
292.15	1187.40 ± 2.00	1907-sla

1-Bromohexane

[111-25-1]

C₆H₁₃Br

MW = 165.07

102

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction): $\sigma_{c,w} = 8.0124 \cdot 10^{-1}$ (combined temperature ranges, weighted), $\sigma_{c,uw} = 3.5554 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

Coefficient	$T = 273.15 \text{ to } 359.45 \text{ K}$ $\rho = A + BT + CT^2 + DT^3 + \dots$
<i>A</i>	$1.49318 \cdot 10^3$
<i>B</i>	-1.01077
<i>C</i>	$-2.60559 \cdot 10^{-4}$

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)
273.15	1198.10 ± 0.70	0.46	1931-dee(Δ)	335.95	1126.90 ± 2.00	2.70	1943-vog(\times)
298.15	1169.00 ± 0.70	0.35	1931-dee(Δ)	359.25	1096.40 ± 2.00	-0.03	1943-vog(\times)
273.15	1198.03 ± 0.50	0.39	1932-ell/rei(\circ)	359.45	1098.70 ± 2.00	2.51	1943-vog(\times)
298.15	1168.95 ± 0.50	0.30	1932-ell/rei(\circ)	274.15	1193.50 ± 1.00	-2.99	1950-hes/hen(∇)
293.15	1173.90 ± 1.00	-0.58	1936-oli(\blacklozenge)	298.15	1166.40 ± 1.00	-2.25	1950-hes/hen(∇)
293.15	1174.80 ± 1.00	0.32	1943-vog(\times)	313.15	1149.90 ± 1.00	-1.20	1950-hes/hen(∇)
313.75	1152.50 ± 2.00	2.10	1943-vog(\times)	328.15	1132.50 ± 1.00	-0.93	1950-hes/hen(∇)
314.65	1148.40 ± 2.00	-0.94	1943-vog(\times)	293.15	1174.50 ± 0.20	0.02	1961-bje(\square)
334.95	1125.00 ± 2.00	-0.38	1943-vog(\times)	298.15	1168.80 ± 0.20	0.15	1961-bje(\square)

Further references: [1877-lie/jan, 1912-kar, 1920-ber, 1946-tuo].

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

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

$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$
270.00	1201.27 ± 0.85	300.00	1166.49 ± 0.88	350.00	1107.49 ± 2.38
280.00	1189.73 ± 0.76	310.00	1154.80 ± 1.06	360.00	1095.53 ± 2.88
290.00	1178.14 ± 0.77	320.00	1143.05 ± 1.29	370.00	1083.52 ± 3.47
293.15	1174.48 ± 0.80	330.00	1131.25 ± 1.59		
298.15	1168.65 ± 0.86	340.00	1119.39 ± 1.95		

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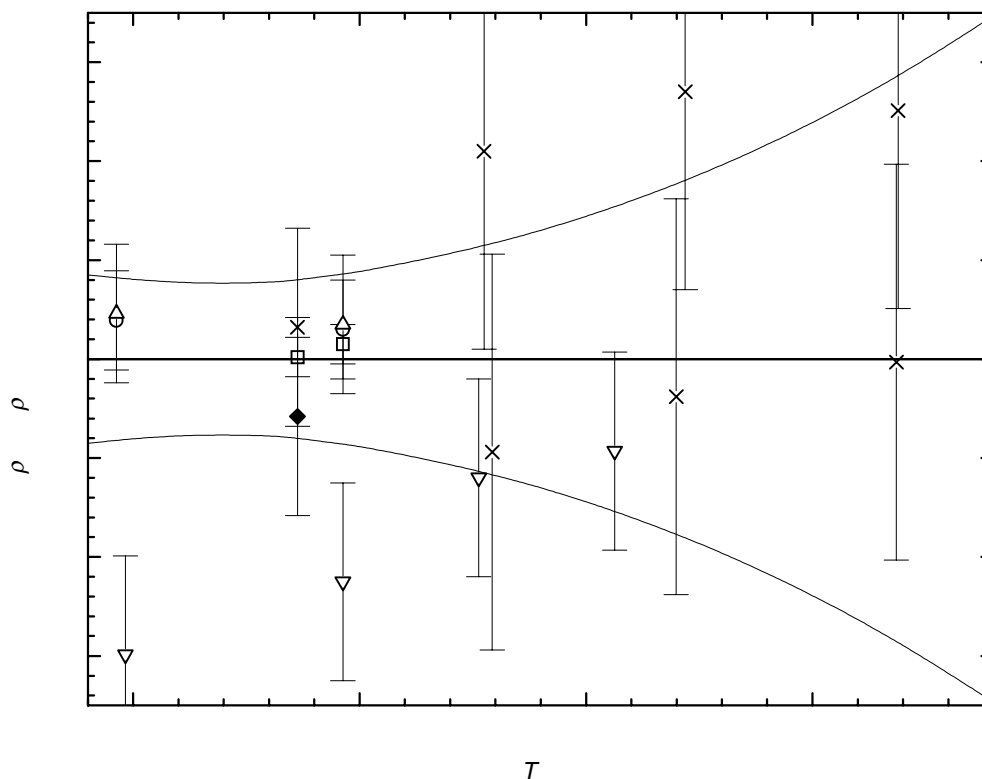
1-Bromohexane (cont.)

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.)

2-Bromohexane

[3377-86-4]

C₆H₁₃Br

MW = 165.07

103

Table 1. Fit with estimated B coefficient for 3 accepted points. Deviation $\sigma_w = 0.074$.

Coefficient	$\rho = A + BT$
A	1508.65
B	-1.170

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.
273.15	1189.1 ± 0.60	0.03	1932-ell/rei
298.15	1159.7 ± 0.60	-0.07	1932-ell/rei
293.15	1165.8 ± 1.00	0.14	1936-oli

cont.

Table 3. Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³
270.00	1192.7 ± 1.1
280.00	1181.0 ± 0.7
290.00	1169.3 ± 0.7
293.15	1165.7 ± 0.7
298.15	1159.8 ± 0.9

3-Bromohexane

[3377-87-5]

C₆H₁₃Br

MW = 165.07

104

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction):

$\sigma_{\text{c,w}} = 1.5609$ (combined temperature ranges, weighted), $\sigma_{\text{c,uw}} = 6.4457 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

Coefficient	$T = 213.15 \text{ to } 473.15 \text{ K}$ $\rho = A + BT + CT^2 + DT^3 + \dots$
A	$1.24127 \cdot 10^3$
B	$3.75634 \cdot 10^{-1}$
C	$-2.20603 \cdot 10^{-3}$

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. (Symbol in Fig. 1)	T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg·m ⁻³	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg·m ⁻³	Ref. (Symbol in Fig. 1)
213.15	1219.70 ± 0.80	-1.41	1988-mel/ver(□)	313.15	1141.60 ± 0.90	-0.97	1988-mel/ver(□)
233.15	1208.40 ± 0.80	-0.53	1988-mel/ver(□)	373.15	1071.80 ± 0.90	-2.46	1988-mel/ver(□)
253.15	1197.20 ± 0.80	2.21	1988-mel/ver(□)	423.15	1005.10 ± 1.00	-0.11	1988-mel/ver(□)
273.15	1187.30 ± 0.80	8.02	1988-mel/ver ¹⁾	473.15	926.30 ± 1.00	1.17	1988-mel/ver(□)
293.15	1163.90 ± 0.80	2.10	1988-mel/ver(□)				

¹⁾ Not included in Fig. 1.

Further references: [1938-van, 1939-spi/tin-1, 1942-pet/kap].

cont.

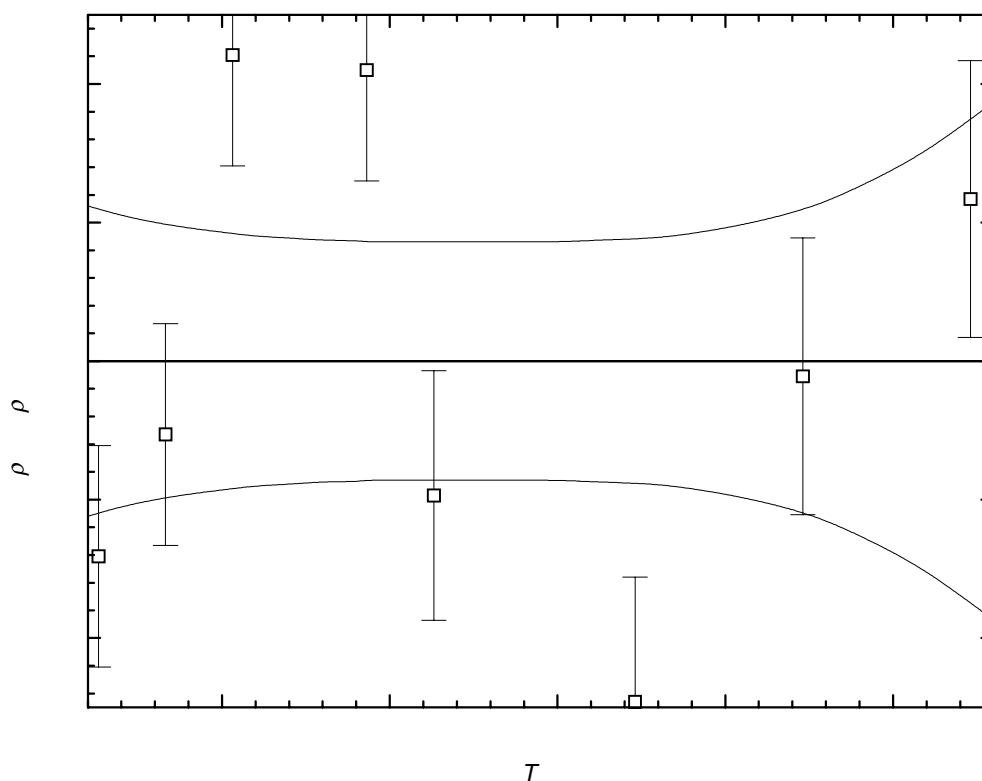
3-Bromohexane (cont.)

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

$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{K}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$
210.00	1222.86 ± 1.12	298.15	1157.16 ± 0.86	390.00	1052.23 ± 0.92
220.00	1217.13 ± 1.05	300.00	1155.41 ± 0.86	400.00	1038.56 ± 0.96
230.00	1210.96 ± 1.00	310.00	1145.71 ± 0.86	410.00	1024.44 ± 1.01
240.00	1204.35 ± 0.96	320.00	1135.57 ± 0.86	420.00	1009.89 ± 1.07
250.00	1197.30 ± 0.93	330.00	1124.99 ± 0.86	430.00	994.89 ± 1.15
260.00	1189.80 ± 0.90	340.00	1113.96 ± 0.86	440.00	979.46 ± 1.26
270.00	1181.87 ± 0.89	350.00	1102.50 ± 0.86	450.00	963.58 ± 1.38
280.00	1173.49 ± 0.87	360.00	1090.59 ± 0.87	460.00	947.26 ± 1.52
290.00	1164.67 ± 0.87	370.00	1078.25 ± 0.88	470.00	930.50 ± 1.69
293.15	1161.80 ± 0.86	380.00	1065.46 ± 0.89	480.00	913.30 ± 1.87

1-Bromo-2-methylpentane [25346-33-2] C₆H₁₃Br MW = 165.07 105

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	1177.90 ± 1.00	1936-oli
293.15	1162.40 ± 4.00	1941-reh/hen

1-Bromo-3-methylpentane [51116-73-5] C₆H₁₃Br MW = 165.07 106

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.
292.15	1185.20 ± 2.00	1908-har
415.15	1031.90 ± 2.00	1908-har
296.15	1171.00 ± 2.00	1935-lev/mar
293.15	1182.90 ± 1.00	1936-oli

d-1-Bromo-3-methylpentane [500047-00-7] C₆H₁₃Br MW = 165.07 107

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.
296.15	1171.00 ± 2.00	1931-lev/mar-5

2-Bromo-2-methylpentane [4283-80-1] C₆H₁₃Br MW = 165.07 108

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	1180.40 ± 2.00	1912-kis
273.15	1180.70 ± 4.00	1918-fav
296.15	1117.00 ± 20.00	1920-des

2-Bromo-4-methylpentane [30310-22-6] C₆H₁₃Br MW = 165.07 109

Table 1. Fit with estimated B coefficient for 2 accepted points. Deviation $\sigma_w = 0.120$.

Coefficient	$\rho = A + BT$
A	1508.24
B	-1.200

cont.

2-Bromo-4-methylpentane (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.
273.15	1180.40 ± 1.00	-0.06	1933-van-1
288.15	1162.70 ± 2.00	0.24	1933-van-1
293.15	1130.20 ± 20.00	-26.26	1946-tuo ¹⁾

¹⁾ Not included in calculation of linear coefficients.**Table 3.** Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³
270.00	1184.2 ± 1.1
280.00	1172.2 ± 1.
290.00	1160.2 ± 1.7

3-Bromo-3-methylpentane

[25346-31-0]

C₆H₁₃Br

MW = 165.07

110

Table 1. Fit with estimated B coefficient for 2 accepted points. Deviation $\sigma_w = 0.000$.

Coefficient	$\rho = A + BT$
A	1489.94
B	-1.060

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.
273.15	1206.40 ± 2.00	6.00	1918-fav ¹⁾
293.15	1179.20 ± 1.00	0.00	1955-van
288.15	1184.50 ± 1.00	0.00	1955-van

¹⁾ Not included in calculation of linear coefficients.**Table 3.** Recommended values.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³
280.00	1193.1 ± 1.2
290.00	1182.5 ± 0.6
293.15	1179.2 ± 0.6
298.15	1173.9 ± 1.0

1,2,2,4-Tetrabromoheptane [500030-38-6] C₇H₁₂Br₄ MW = 415.79 111

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	2067.50 ± 3.00	1927-bou-1

1,2,3-Tribromoheptane [500030-35-3] C₇H₁₃Br₃ MW = 336.89 112

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.
290.15	1811.20 ± 3.00	1927-bou-1

1,4,7-Tribromoheptane [3981-10-0] C₇H₁₃Br₃ MW = 336.89 113

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.
293.00	1331.00 ± 2.00	1918-ham

1,1,1-Tris-(Bromomethyl)-2-methylpropane [500045-60-3] C₇H₁₃Br₃ MW = 336.89 114

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	1912.20 ± 1.00	1949-der/gre

3-Bromo-3-(bromomethyl)hexane [66567-12-2] C₇H₁₄Br₂ MW = 258.00 115

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	1492.90 ± 0.70	1933-sod/boo

3-Bromo-3-(bromomethyl)-2-methylpentane [66567-13-3] C₇H₁₄Br₂ MW = 258.00 116

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1526.10 ± 0.70	1933-sod/boo

1,2-Dibromo-2,3-dimethylpentane [500003-91-8] C₇H₁₄Br₂ MW = 258.00 117

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1524.50 ± 0.70	1933-sod/boo

1,2-Dibromo-2,4-dimethylpentane [500003-92-9] C₇H₁₄Br₂ MW = 258.00 118

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1513.60 ± 0.70	1933-sod/boo

1,2-Dibromo-3,3-dimethylpentane [500013-27-4] C₇H₁₄Br₂ MW = 258.00 119

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1561.50 ± 1.00	1933-sch/boo

1,2-Dibromo-4,4-dimethylpentane [6300-00-1] C₇H₁₄Br₂ MW = 258.00 120

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1502.00 ± 3.00	1946-sch

1,5-Dibromo-3,3-dimethylpentane [37746-17-1] C₇H₁₄Br₂ MW = 258.00 121

Table 1. Experimental value with uncertainty.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	1532.00 ± 2.00	1955-blo/whe

2,3-Dibromo-2,3-dimethylpentane [500025-36-5] C₇H₁₄Br₂ MW = 258.00 122

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
295.15	1547.00 ± 2.00	1921-par/sim

2,3-Dibromo-3,4-dimethylpentane [500003-96-3] C₇H₁₄Br₂ MW = 258.00 123

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
293.15	1540.00 ± 0.70	1933-sod/boo

2,3-Dibromo-4,4-dimethylpentane [500013-28-5] C₇H₁₄Br₂ MW = 258.00 124

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
293.15	1553.80 ± 1.00	1933-sch/boo

2,3-Dibromo-3-ethylpentane [500003-97-4] C₇H₁₄Br₂ MW = 258.00 125

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
293.15	1542.60 ± 0.70	1933-sod/boo

1,1-Dibromoheptane [59104-79-9] C₇H₁₄Br₂ MW = 258.00 126

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
294.15	1500.00 ± 4.00	1927-kir

1,2-Dibromoheptane [42474-21-5] C₇H₁₄Br₂ MW = 258.00 127

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	1518.00 ± 2.00	1931-wil
293.15	1520.80 ± 1.00	1933-sod/boo
293.15	1508.60 ± 4.00	1934-she/smi ¹⁾
293.15	1520.20 ± 1.10	Recommended

¹⁾ Not included in calculation of recommended value.

1,7-Dibromoheptane [4549-31-9] C₇H₁₄Br₂ MW = 258.00 128

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	1517.00 ± 6.00	1950-har/for

2,3-Dibromoheptane [21266-88-6] C₇H₁₄Br₂ MW = 258.00 129

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	1512.90 ± 1.00	1933-sod/boo
293.15	1513.90 ± 1.50	1934-she/smi
293.15	1513.20 ± 1.10	Recommended

3,4-Dibromoheptane [21266-90-0] C₇H₁₄Br₂ MW = 258.00 130

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	1515.30 ± 1.00	1933-sod/boo
293.15	1518.20 ± 1.50	1934-she/smi
293.15	1516.20 ± 1.50	Recommended

(-)-1,4-Dibromo-2-(1-methylethyl)butane [500025-67-2] C₇H₁₄Br₂ MW = 258.00 131

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1550.00 ± 15.00	1954-fre/lwo

1,2-Dibromo-2-methylhexane [500003-90-7] C₇H₁₄Br₂ MW = 258.00 132

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1506.60 ± 0.70	1933-sod/boo

1,2-Dibromo-3-methylhexane [500003-85-0] C₇H₁₄Br₂ MW = 258.00 133

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1524.80 ± 0.70	1933-sod/boo

1,2-Dibromo-4-methylhexane [6147-63-3] C₇H₁₄Br₂ MW = 258.00 134

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1502.70 ± 0.60	1933-sod/boo

1,2-Dibromo-5-methylhexane [24768-64-7] C₇H₁₄Br₂ MW = 258.00 135

Table 1. Experimental values with uncertainties.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m ⁻³	Ref.
293.15	1488.80 ± 4.00	1930-dyk/lew
293.15	1507.20 ± 0.60	1933-sod/boo

2,2-Dibromo-4-methylhexane [500003-88-3] C₇H₁₄Br₂ MW = 258.00 136

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	1538.20 ± 0.70	1933-sod/boo

2,3-Dibromo-2-methylhexane [100859-79-8] C₇H₁₄Br₂ MW = 258.00 137

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	1511.60 ± 0.70	1933-sod/boo

2,3-Dibromo-3-methylhexane [500003-95-2] C₇H₁₄Br₂ MW = 258.00 138

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	1524.00 ± 0.70	1933-sod/boo

2,3-Dibromo-5-methylhexane (high boiling) [500003-86-1] C₇H₁₄Br₂ MW = 258.00 139

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	1515.20 ± 1.00	1933-sod/boo

2,3-Dibromo-5-methylhexane (low boiling) [500003-87-2] C₇H₁₄Br₂ MW = 258.00 140

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	1502.70 ± 1.00	1933-sod/boo

2,4-Dibromo-3-methylhexane [500004-87-5] C₇H₁₄Br₂ MW = 258.00 141

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	1503.50 ± 1.00	1955-kel/gre

3,4-Dibromo-2-methylhexane [500003-89-4] C₇H₁₄Br₂ MW = 258.00 142

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	1531.00 ± 0.70	1933-sod/boo

d-1-Bromo-2,3-dimethylpentane [500047-02-9] C₇H₁₅Br MW = 179.10 143

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.
296.15	1166.00 ± 2.00	1931-lev/mar-2

1-Bromoheptane [629-04-9] C₇H₁₅Br MW = 179.10 144

Table 1. Coefficients of the polynomial expansion equation. Standard deviations (see introduction):

$\sigma_{\text{c,w}} = 7.5538 \cdot 10^{-1}$ (combined temperature ranges, weighted), $\sigma_{\text{c,uw}} = 1.9851 \cdot 10^{-1}$ (combined temperature ranges, unweighted).

Coefficient	$T = 203.15 \text{ to } 363.15 \text{ K}$ $\rho = A + BT + CT^2 + DT^3 + \dots$
A	$1.44995 \cdot 10^3$
B	-1.02766
C	$-9.94404 \cdot 10^{-5}$

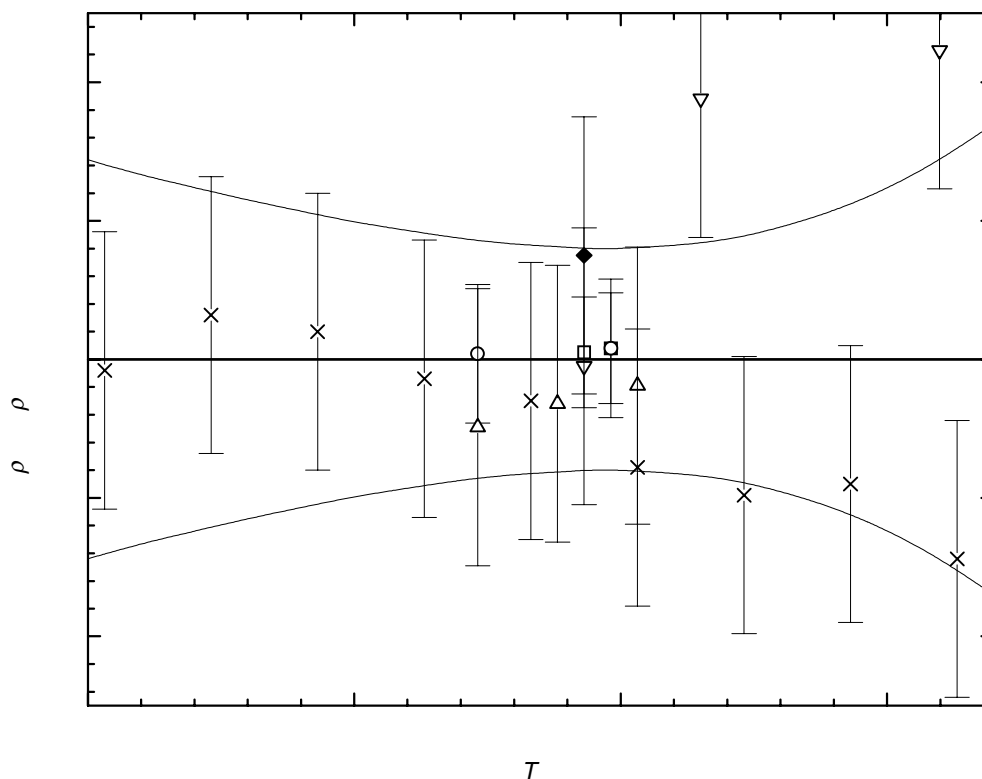
Table 2. Experimental values with uncertainties and deviation from calculated values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{ca}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)
203.15	1237.00 ± 1.00	-0.08	1930-smy/rog-1(×)	323.15	1106.50 ± 1.00	-0.98	1930-smy/rog-1(×)
223.15	1216.00 ± 1.00	0.32	1930-smy/rog-1(×)	343.15	1084.70 ± 1.00	-0.90	1930-smy/rog-1(×)
243.15	1194.40 ± 1.00	0.20	1930-smy/rog-1(×)	363.15	1062.20 ± 1.00	-1.44	1930-smy/rog-1(×)
263.15	1172.50 ± 1.00	-0.14	1930-smy/rog-1(×)	273.15	1161.34 ± 1.00	-0.49	1931-def(Δ)
283.15	1150.70 ± 1.00	-0.30	1930-smy/rog-1(×)	288.15	1145.26 ± 1.00	-0.32	1931-def(Δ)
303.15	1128.50 ± 1.00	-0.78	1930-smy/rog-1(×)	303.15	1129.09 ± 1.00	-0.19	1931-def(Δ)

cont.

1-Bromoheptane (cont.)**Table 2.** (cont.)

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{ca}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref. (Symbol in Fig. 1)
273.15	1161.87 ± 0.50	0.04	1932-ell/rei(○)	336.65	1104.60 ± 1.00	11.88	1943-vog ¹⁾
298.15	1134.80 ± 0.50	0.08	1932-ell/rei(○)	359.85	1069.50 ± 1.00	2.23	1943-vog(▽)
293.15	1140.90 ± 1.00	0.75	1937-oli(◆)	293.15	1140.20 ± 0.40	0.05	1961-bje(□)
293.15	1140.10 ± 1.00	-0.05	1943-vog(▽)	298.15	1134.80 ± 0.40	0.08	1961-bje(□)
315.05	1118.20 ± 1.00	1.88	1943-vog(▽)				

¹⁾ Not included in Fig. 1.**Further references:** [1877-cro, 1877-cro-1, 1930-err/she, 1946-tuo].**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.

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

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

$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho \pm \sigma_{\text{fit}}}{\text{kg} \cdot \text{m}^{-3}}$
200.00	1240.44 ± 1.44	270.00	1165.23 ± 0.87	320.00	1110.92 ± 0.86
210.00	1229.76 ± 1.33	280.00	1154.41 ± 0.83	330.00	1099.99 ± 0.95
220.00	1219.05 ± 1.24	290.00	1143.57 ± 0.81	340.00	1089.05 ± 1.07
230.00	1208.33 ± 1.15	293.15	1140.15 ± 0.80	350.00	1078.09 ± 1.23
240.00	1197.59 ± 1.07	298.15	1134.72 ± 0.80	360.00	1067.11 ± 1.44
250.00	1186.82 ± 0.99	300.00	1132.70 ± 0.80	370.00	1056.10 ± 1.70
260.00	1176.04 ± 0.93	310.00	1121.82 ± 0.82		

2-Bromoheptane

[1974-04-5]

C₇H₁₅Br

MW = 179.10

145

Table 1. Fit with estimated B coefficient for 2 accepted points. Deviation $\sigma_w = 0.020$.

Coefficient	$\rho = A + BT$
A	1441.30
B	-1.090

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.
295.15	1125.50 ± 2.00	5.91	1930-err/she ¹⁾
273.15	1143.60 ± 0.60	0.02	1932-ell/rei
298.15	1116.30 ± 0.60	-0.02	1932-ell/rei

¹⁾ Not included in calculation of linear coefficients.**Table 3.** Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
270.00	1147.0 ± 0.9
280.00	1136.1 ± 0.5
290.00	1125.2 ± 0.4
293.15	1121.8 ± 0.5
298.15	1116.3 ± 0.7

3-Bromoheptane [1974-05-6] C₇H₁₅Br MW = 179.10 146

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
295.15	1134.10 ± 0.70	1930-err/she

4-Bromoheptane [1998-93-6] C₇H₁₅Br MW = 179.10 147

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
295.50	1133.00 ± 0.70	1930-err/she

***d*-1-Bromo-3-methylhexane** [500047-01-8] C₇H₁₅Br MW = 179.10 148

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
293.15	1141.00 ± 2.00	1931-lev/mar-5

***d*-1-Bromo-4-methylhexane** [500047-03-0] C₇H₁₅Br MW = 179.10 149

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
300.15	1070.00 ± 2.00	1931-lev/mar-5

(+)-2-Bromo-4-methylhexane [500013-14-9] C₇H₁₅Br MW = 179.10 150

Table 1. Experimental value with uncertainty.

T	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$	Ref.
K	kg · m ⁻³	
298.15	1217.30 ± 0.70	1949-gor/bur