

## 8.2 Nitroalkenes

### Nitroethene

[500016-67-1]



MW = 73.05

725

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.048$ .

Coefficient	$\rho = A + BT$
$A$	1491.30
$B$	-1.290

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
273.15	$1138.9 \pm 1.0$	-0.03	1960-hop/cap
286.95	$1121.2 \pm 1.0$	0.07	1960-hop/cap
293.15	$1113.1 \pm 1.0$	-0.03	1960-hop/cap

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
270.00	$1143.0 \pm 1.7$
280.00	$1130.1 \pm 1.0$
290.00	$1117.2 \pm 1.1$
293.15	$1113.1 \pm 1.3$
298.15	$1106.7 \pm 1.6$

### 2-Nitro-2-butene

[4812-23-1]



MW = 101.11

726

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.262$ .

Coefficient	$\rho = A + BT$
$A$	1358.61
$B$	-1.060

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$1037.4 \pm 0.6$	0.13	1962-lam/men
313.15	$1026.3 \pm 0.6$	-0.37	1962-lam/men
333.15	$1005.7 \pm 0.6$	0.23	1962-lam/men

cont.

**2-Nitro-2-butene** (cont.)**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$1047.9 \pm 1.3$
298.15	$1042.6 \pm 1.1$
310.00	$1030.0 \pm 0.7$
320.00	$1019.4 \pm 0.6$
330.00	$1008.8 \pm 0.9$
340.00	$998.2 \pm 1.3$

**2-Nitro-2-pentene**

[6065-19-6]

 $\text{C}_5\text{H}_9\text{NO}_2$ 

MW = 115.13

727

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

Coefficient	$\rho = A + BT$
$A$	1300.35
$B$	-1.000

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$997.2 \pm 0.6$	-0.00	1962-lam/men
313.15	$987.2 \pm 0.6$	-0.00	1962-lam/men
333.15	$967.2 \pm 0.6$	-0.00	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$1007.2 \pm 1.3$
298.15	$1002.2 \pm 1.1$
310.00	$990.4 \pm 0.6$
320.00	$980.4 \pm 0.6$
330.00	$970.4 \pm 0.9$
340.00	$960.4 \pm 1.3$

**3-Nitro-2-pentene**

[6065-18-5]

 $\text{C}_5\text{H}_9\text{NO}_2$ 

MW = 115.13

728

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

Coefficient	$\rho = A + BT$
$A$	1306.38
$B$	-1.000

cont.

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$1003.1 \pm 0.6$	-0.13	1962-lam/men
313.15	$993.2 \pm 0.6$	-0.03	1962-lam/men
333.15	$973.4 \pm 0.6$	0.17	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$1013.2 \pm 1.3$
298.15	$1008.2 \pm 1.1$
310.00	$996.4 \pm 0.6$
320.00	$986.4 \pm 0.6$
330.00	$976.4 \pm 0.9$
340.00	$966.4 \pm 1.3$

**2-Nitro-2-hexene**

[6065-17-4]

 $\text{C}_6\text{H}_{11}\text{NO}_2$ 

MW = 129.16

729

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.249$ .

Coefficient	$\rho = A + BT$
$A$	1264.69
$B$	-0.940

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$979.8 \pm 0.6$	0.07	1962-lam/men
313.15	$970.0 \pm 0.6$	-0.33	1962-lam/men
333.15	$951.8 \pm 0.6$	0.27	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$989.1 \pm 1.3$
298.15	$984.4 \pm 1.1$
310.00	$973.3 \pm 0.7$
320.00	$963.9 \pm 0.6$
330.00	$954.5 \pm 0.9$
340.00	$945.1 \pm 1.3$

**3-Nitro-2-hexene****[6065-16-3]****MW = 129.16****730****Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.309$ .

Coefficient	$\rho = A + BT$
$A$	1267.86
$B$	-0.950

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$979.7 \pm 0.6$	-0.17	1962-lam/men
313.15	$970.1 \pm 0.6$	-0.27	1962-lam/men
333.15	$951.8 \pm 0.6$	0.43	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$989.4 \pm 1.3$
298.15	$984.6 \pm 1.1$
310.00	$973.4 \pm 0.7$
320.00	$963.9 \pm 0.6$
330.00	$954.4 \pm 0.9$
340.00	$944.9 \pm 1.3$

**3-Nitro-3-hexene****[4812-22-0]****MW = 129.16****731****Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.368$ .

Coefficient	$\rho = A + BT$
$A$	1252.76
$B$	-0.920

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$973.9 \pm 0.6$	0.03	1962-lam/men
313.15	$965.1 \pm 0.6$	0.43	1962-lam/men
333.15	$945.8 \pm 0.6$	-0.47	1962-lam/men

cont.

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$983.1 \pm 1.3$
298.15	$978.5 \pm 1.1$
310.00	$967.6 \pm 0.7$
320.00	$958.4 \pm 0.7$
330.00	$949.2 \pm 0.9$
340.00	$940.0 \pm 1.3$

**2-Nitro-2-heptene**

[6065-14-1]



MW = 143.19

732

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.141$ .

Coefficient	$\rho = A + BT$
$A$	1229.70
$B$	-0.890

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

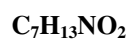
$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$959.8 \pm 0.6$	-0.10	1962-lam/men
313.15	$950.9 \pm 0.6$	-0.10	1962-lam/men
333.15	$933.4 \pm 0.6$	0.20	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$968.8 \pm 1.3$
298.15	$964.4 \pm 1.1$
310.00	$953.8 \pm 0.6$
320.00	$944.9 \pm 0.6$
330.00	$936.0 \pm 0.9$
340.00	$927.1 \pm 1.3$

**3-Nitro-2-heptene**

[6065-13-0]



MW = 143.19

733

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.377$ .

Coefficient	$\rho = A + BT$
$A$	1242.26
$B$	-0.920

cont.

**3-Nitro-2-heptene** (cont.)**Table 2.** Experimental values with uncertainties and deviation from calculated values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$963.1 \pm 0.6$	-0.27	1962-lam/men
313.15	$953.9 \pm 0.6$	-0.27	1962-lam/men
333.15	$936.3 \pm 0.6$	0.53	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$972.6 \pm 1.3$
298.15	$968.0 \pm 1.1$
310.00	$957.1 \pm 0.7$
320.00	$947.9 \pm 0.7$
330.00	$938.7 \pm 0.9$
340.00	$929.5 \pm 1.3$

**3-Nitro-3-heptene**

[6187-24-2]

 $\text{C}_7\text{H}_{13}\text{NO}_2$ 

MW = 143.19

734

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.356$ .

Coefficient	$\rho = A + BT$
$A$	1241.96
$B$	-0.940

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$956.8 \pm 0.6$	-0.20	1962-lam/men
313.15	$947.3 \pm 0.6$	-0.30	1962-lam/men
333.15	$929.3 \pm 0.6$	0.50	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$966.4 \pm 1.3$
298.15	$961.7 \pm 1.1$
310.00	$950.6 \pm 0.7$
320.00	$941.2 \pm 0.7$
330.00	$931.8 \pm 0.9$
340.00	$922.4 \pm 1.3$

**4-Nitro-3-heptene**

[6065-12-9]



MW = 143.19

735

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.189$ .

Coefficient	$\rho = A + BT$
$A$	1236.23
$B$	-0.920

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$957.2 \pm 0.6$	-0.13	1962-lam/men
313.15	$948.0 \pm 0.6$	-0.13	1962-lam/men
333.15	$930.0 \pm 0.6$	0.27	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$966.5 \pm 1.3$
298.15	$961.9 \pm 1.1$
310.00	$951.0 \pm 0.7$
320.00	$941.8 \pm 0.6$
330.00	$932.6 \pm 0.9$
340.00	$923.4 \pm 1.3$

**2-Nitro-2-octene**

[6065-11-8]



MW = 157.21

736

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.094$ .

Coefficient	$\rho = A + BT$
$A$	1205.54
$B$	-0.860

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$944.9 \pm 0.6$	0.07	1962-lam/men
313.15	$936.3 \pm 0.6$	0.07	1962-lam/men
333.15	$918.9 \pm 0.6$	-0.13	1962-lam/men

cont.

**2-Nitro-2-octene** (cont.)**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>
293.15	953.4 ± 1.3
298.15	949.1 ± 1.1
310.00	938.9 ± 0.6
320.00	930.3 ± 0.6
330.00	921.7 ± 0.9
340.00	913.1 ± 1.3

**3-Nitro-2-octene**

[6065-10-7]

C8H15NO2

MW = 157.21

737

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.094$ .

Coefficient	$\rho = A + BT$
$A$	1205.98
$B$	-0.860

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m <sup>-3</sup>	Ref.
303.15	945.2 ± 0.6	-0.07	1962-lam/men
313.15	936.6 ± 0.6	-0.07	1962-lam/men
333.15	919.6 ± 0.6	0.13	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>
293.15	953.9 ± 1.3
298.15	949.6 ± 1.1
310.00	939.4 ± 0.6
320.00	930.8 ± 0.6
330.00	922.2 ± 0.9
340.00	913.6 ± 1.3

**3-Nitro-3-octene**

[6065-09-4]

C8H15NO2

MW = 157.21

738

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.377$ .

Coefficient	$\rho = A + BT$
$A$	1219.10
$B$	-0.900

cont.

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m <sup>-3</sup>	Ref.
303.15	946.0 ± 0.6	-0.27	1962-lam/men
313.15	937.0 ± 0.6	-0.27	1962-lam/men
333.15	919.8 ± 0.6	0.53	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>
293.15	955.3 ± 1.3
298.15	950.8 ± 1.1
310.00	940.1 ± 0.7
320.00	931.1 ± 0.7
330.00	922.1 ± 0.9
340.00	913.1 ± 1.3

**4-Nitro-3-octene**

[6065-08-3]

C8H15NO2

MW = 157.21

739

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.330$ .

Coefficient	$\rho = A + BT$
$A$	1208.21
$B$	-0.880

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>	$\rho_{\text{exp}} - \rho_{\text{calc}}$ kg · m <sup>-3</sup>	Ref.
303.15	941.2 ± 0.6	-0.23	1962-lam/men
313.15	932.4 ± 0.6	-0.23	1962-lam/men
333.15	915.5 ± 0.6	0.47	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ kg · m <sup>-3</sup>
293.15	950.2 ± 1.3
298.15	945.8 ± 1.1
310.00	935.4 ± 0.7
320.00	926.6 ± 0.7
330.00	917.8 ± 0.9
340.00	909.0 ± 1.3

**4-Nitro-4-octene**

[6065-07-2]



MW = 157.21

740

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.047$ .

Coefficient	$\rho = A + BT$
$A$	1211.91
$B$	-0.880

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$945.1 \pm 0.6$	-0.03	1962-lam/men
313.15	$936.3 \pm 0.6$	-0.03	1962-lam/men
333.15	$918.8 \pm 0.6$	0.07	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$953.9 \pm 1.3$
298.15	$949.5 \pm 1.1$
310.00	$939.1 \pm 0.6$
320.00	$930.3 \pm 0.6$
330.00	$921.5 \pm 0.9$
340.00	$912.7 \pm 1.3$

**2-Nitro-2-nonene**

[4812-25-3]



MW = 171.24

741

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.189$ .

Coefficient	$\rho = A + BT$
$A$	1184.58
$B$	-0.840

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$929.8 \pm 0.6$	-0.13	1962-lam/men
313.15	$921.4 \pm 0.6$	-0.13	1962-lam/men
333.15	$905.0 \pm 0.6$	0.27	1962-lam/men

cont.

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$938.3 \pm 1.3$
298.15	$934.1 \pm 1.1$
310.00	$924.2 \pm 0.7$
320.00	$915.8 \pm 0.6$
330.00	$907.4 \pm 0.9$
340.00	$899.0 \pm 1.3$

**3-Nitro-2-nonene**

[6065-05-0]



MW = 171.24

742

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.294$ .

Coefficient	$\rho = A + BT$
$A$	1190.45
$B$	-0.840

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

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	$\rho_{\text{exp}} - \rho_{\text{calc}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
303.15	$935.7 \pm 0.6$	-0.10	1962-lam/men
313.15	$927.1 \pm 0.6$	-0.30	1962-lam/men
333.15	$911.0 \pm 0.6$	0.40	1962-lam/men

**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$944.2 \pm 1.3$
298.15	$940.0 \pm 1.1$
310.00	$930.0 \pm 0.7$
320.00	$921.6 \pm 0.6$
330.00	$913.2 \pm 0.9$
340.00	$904.8 \pm 1.3$

**3-Nitro-3-nonene**

[6065-04-9]



MW = 171.24

743

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.094$ .

Coefficient	$\rho = A + BT$
$A$	1181.98
$B$	-0.830

cont.

**3-Nitro-3-nonene** (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.
303.15	$930.3 \pm 0.6$	-0.07	1962-lam/men
313.15	$922.0 \pm 0.6$	-0.07	1962-lam/men
333.15	$905.6 \pm 0.6$	0.13	1962-lam/men

**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	$938.7 \pm 1.3$
298.15	$934.5 \pm 1.1$
310.00	$924.7 \pm 0.6$
320.00	$916.4 \pm 0.6$
330.00	$908.1 \pm 0.9$
340.00	$899.8 \pm 1.3$

**4-Nitro-3-nonene**

[6065-03-8]

 $\text{C}_9\text{H}_{17}\text{NO}_2$ 

MW = 171.24

744

**Table 1.** Fit with estimated  $B$  coefficient for 3 accepted points. Deviation  $\sigma_w = 0.094$ .

Coefficient	$\rho = A + BT$
$A$	1178.45
$B$	-0.830

**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.
303.15	$926.9 \pm 0.6$	0.07	1962-lam/men
313.15	$918.6 \pm 0.6$	0.07	1962-lam/men
333.15	$901.8 \pm 0.6$	-0.13	1962-lam/men

**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	$935.1 \pm 1.3$
298.15	$931.0 \pm 1.1$
310.00	$921.1 \pm 0.6$
320.00	$912.8 \pm 0.6$
330.00	$904.5 \pm 0.9$
340.00	$896.2 \pm 1.3$

**4-Nitro-4-nonene****[4812-24-2]****MW = 171.24****745****Table 1.** Fit with estimated *B* coefficient for 3 accepted points. Deviation  $\sigma_w = 0.236$ .

Coefficient	$\rho = A + BT$
<i>A</i>	1197.71
<i>B</i>	-0.870

**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.
303.15	933.8 $\pm$ 0.6	-0.17	1962-lam/men
313.15	925.1 $\pm$ 0.6	-0.17	1962-lam/men
333.15	908.2 $\pm$ 0.6	0.33	1962-lam/men

**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	942.7 $\pm$ 1.3
298.15	938.3 $\pm$ 1.1
310.00	928.0 $\pm$ 0.7
320.00	919.3 $\pm$ 0.6
330.00	910.6 $\pm$ 0.9
340.00	901.9 $\pm$ 1.3

**5-Nitro-4-nonene****[6065-01-6]****MW = 171.24****746****Table 1.** Fit with estimated *B* coefficient for 3 accepted points. Deviation  $\sigma_w = 0.141$ .

Coefficient	$\rho = A + BT$
<i>A</i>	1188.28
<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.
303.15	930.5 $\pm$ 0.6	-0.10	1962-lam/men
313.15	922.0 $\pm$ 0.6	-0.10	1962-lam/men
333.15	905.3 $\pm$ 0.6	0.20	1962-lam/men

cont.

**5-Nitro-4-nonene** (cont )**Table 3.** Recommended values.

$T$ K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$
293.15	$939.1 \pm 1.3$
298.15	$934.9 \pm 1.1$
310.00	$924.8 \pm 0.6$
320.00	$916.3 \pm 0.6$
330.00	$907.8 \pm 0.9$
340.00	$899.3 \pm 1.3$