

6. Tabulated Data on Density - Miscellaneous Polycyclic Hydrocarbons

2,3-Cyclobutano-9-methylspiro[5.3]nonane [500040-75-5] $C_{12}H_{20}$ MW =164.29 1300

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	867.9 ± 2.0	13-leb

1-Cyclopentylindan [92377-85-0] $C_{14}H_{18}$ MW =186.30 1301

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
293.15	990.3 ± 2.0	59-top/tsy-1
293.15	990.3 ± 2.0	61-top/tsy

1-(1-Cyclopenten-1-yl)naphthalene [58195-37-2] $C_{15}H_{14}$ MW =194.28 1302

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.
297.15	1061.1 ± 2.0	37-ber/ber

1-Cyclohexyl-2,3-dihydro-1H-indene [58453-09-1] $C_{15}H_{20}$ MW =200.32 1303

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	991.7 ± 2.0	60-tsy/pok

7-Methyl-1,2,3,4-tetrahydro-naphthalene-2,2-spiropentane [500050-13-5] $C_{15}H_{20}$ MW =200.32 1304

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.
304.15	980.4 ± 2.0	39-sen

[1S-(1 α ,3 α ,4 α ,8 α)]-Decahydro-9-methylene-4,8,8-trimethyl-1,4-methanoazulene [475-20-7] C₁₅H₂₄ MW =204.36 1305

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.
303.15	924.4 \pm 3.0	20-sim

1-Cyclohexylnaphthalene [3042-69-1] C₁₆H₁₈ MW =210.32 1306

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
288.15	1044.0 \pm 2.0	36-coo/law-1
293.15	1040.0 \pm 2.0	63-dav/got

2-Cyclohexylnaphthalene [500029-56-1] C₁₆H₁₈ MW =210.32 1307

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
298.15	1020.0 \pm 2.0	38-pri/cis
313.15	1007.4 \pm 2.0	39-pok/ste
293.15	1024.0 \pm 2.0	63-dav/got

4-Cyclohexyl-1,2-dihydronaphthalene [500038-62-0] C₁₆H₂₀ MW =212.33 1308

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.
285.35	1021.0 \pm 2.0	36-coo/law

7-Ethyl-1,2,3,4-tetrahydronaphthalene-2,2-spiropentane [500050-19-1] C₁₆H₂₂ MW =214.35 1309

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.
300.95	966.5 \pm 2.0	39-sen

2-Cyclohexylbicyclo[4.4.0]-5-dodecene [500037-61-6] C₁₆H₂₆ MW =218.38 1310

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	954.6 \pm 2.0	26-alb

2-Cyclohexyl-1,4,4a,5,6,7,8,8a-octahydronaphthalene [500037-60-5] $C_{16}H_{26}$ MW =218.38 1311

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
293.15	942.2 ± 2.0	26-alb

1-[2-(1-Cyclopentenyl)ethyl]naphthalene [500038-86-8] $C_{17}H_{18}$ MW =222.33 1312

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
293.15	1029.8 ± 2.0	33-coo/hew

1-[2-Methyl-1-cyclohexenyl]naphthalene [500038-87-9] $C_{17}H_{18}$ MW =222.33 1313

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
288.65	1036.0 ± 2.0	36-coo/law-1

Spiro[7-ethyl-1,2,3,4-tetrahydronaphthalene-2,1'-cyclohexane] [500038-53-9] $C_{17}H_{24}$ MW =228.38 1314

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
297.15	972.8 ± 2.0	42-sen

6-Cyclohexylmethyl-1,2,3,4-tetrahydronaphthalene [500050-52-2] $C_{17}H_{24}$ MW =228.38 1315

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
293.15	979.6 ± 2.0	50-har/geo

1,1'-Bi(2,3-dihydro-1*H*-indenyl) [500039-00-9] $C_{18}H_{18}$ MW =234.34 1316

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
297.15	1066.9 ± 2.0	33-str/kuh

1-[2-(1-Cyclohexenyl)ethynyl]-3,4-dihydronaphthalene [500039-01-0] $C_{18}H_{18}$ MW =234.34 1317

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
293.15	1044.3 ± 2.0	37-pin/mar

1-[2-(1-Cyclohexenyl)ethyl]naphthalene [500038-88-0] $C_{18}H_{20}$ MW =236.36 1318

Table 1. Experimental values with uncertainties.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
296.65	1025.4 ± 4.0	34-coo/hew
281.15	1015.8 ± 3.0	35-coo/has-1

1,2-Cyclopentano-1,3-dimethyl-1,2,3,4-tetrahydrophenanthrene [500038-98-2] $C_{18}H_{20}$ MW =236.36 1319

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
291.35	1042.0 ± 2.0	34-har/kon

Spiro(phenalan-1,1'-cyclohexane) [500038-97-1] $C_{18}H_{20}$ MW =236.36 1320

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
296.65	1080.9 ± 2.0	34-coo/hew

6-(2-Cyclohexylethyl)-1,2,3,4-tetrahydronaphthalene [500050-62-4] $C_{18}H_{26}$ MW =242.40 1321

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
293.15	970.7 ± 2.0	50-har/geo

4-(Phenylmethyl)-1,1'-biphenyl [613-42-3] $C_{19}H_{16}$ MW =244.34 1322

Table 1. Experimental value with uncertainty.

T K	$\rho_{\text{exp}} \pm 2\sigma_{\text{est}}$ $\text{kg} \cdot \text{m}^{-3}$	Ref.
273.15	1171.0 ± 2.0	29-zie/dit

Bis(7,7-dimethylbicyclo[3.1.1]-1-heptenyl)methane [500050-00-0] $C_{19}H_{28}$ MW =256.43 1323

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	952.1 ± 3.0	31-ald/ste

1,1'-Binaphthyl [604-53-5] $C_{20}H_{14}$ MW =254.33 1324

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	1135.0 ± 2.0	63-dav/got

1-[(2,2-Dimethylbicyclo[2.2.1]-heptyliden-3-yl)methyl]naphthalene [500039-02-1] $C_{20}H_{22}$ MW =262.38 1325

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	1052.3 ± 2.0	39-arb

6-(4-Cyclohexylbutyl)-1,2,3,4-tetrahydronaphthalene [500050-74-8] $C_{20}H_{30}$ MW =270.46 1326

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	952.1 ± 2.0	50-har/geo

1,1'-Dimethyl-4,4'-dipropyl-2,2'-bi[bicyclo[2.2.0]-2-cyclohexenyl] [500050-06-6] $C_{20}H_{30}$ MW =270.46 1327

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.
334.15	930.4 ± 3.0	39-ade/bog

Bis(1-naphthyl)methane [607-50-1] $C_{21}H_{16}$ MW =268.36 1328

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.
325.15	1122.4 ± 1.5	42-lar/tho

6-(5-Cyclohexylpentyl)-1,2,3,4-tetrahydronaphthalene [500050-75-9] $C_{21}H_{32}$ MW =284.49 1329

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	948.6 ± 2.0	50-har/geo

4,4'-Methylenebis(1,1'-biphenyl) [3901-32-4] $C_{25}H_{20}$ MW =320.43 1330

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	1178.0 ± 5.0	15-mie
273.15	1176.0 ± 2.0	29-zie/dit

4-(Diphenylmethyl)-1,1'-biphenyl [500037-49-0] $C_{25}H_{20}$ MW =320.43 1331

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.
273.15	1161.0 ± 2.0	29-zie/dit

9,9'-Bi-9H-fluorenyl [1530-12-7] $C_{26}H_{16}$ MW =328.41 1332

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.
<i>crystal</i>		
293.15	1240.0 ± 4.0	53-sch/blo-1

2-Decyl-4b,5,9b,10-tetrahydroindeno-(2,1-a)indene [500037-37-6] $C_{26}H_{34}$ MW =346.56 1333

Table 1. Fit with estimated B coefficient for 5 accepted points. Deviation $\sigma_w = 0.215$.

Coefficient	$\rho = A + BT$
A	1176.54
B	-0.665

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.
310.95	970.0 ± 0.5	0.24	68-ano-1
333.15	954.7 ± 0.5	-0.30	68-ano-1
372.05	929.1 ± 0.7	-0.03	68-ano-1
388.15	918.4 ± 0.7	-0.02	68-ano-1
408.15	905.3 ± 0.7	0.18	68-ano-1

Table 3. Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
310.00	970.4 ± 1.0	350.00	943.8 ± 0.6	390.00	917.2 ± 1.0
320.00	963.7 ± 0.9	360.00	937.1 ± 0.6	400.00	910.5 ± 1.1
330.00	957.1 ± 0.7	370.00	930.5 ± 0.7	410.00	903.9 ± 1.3
340.00	950.4 ± 0.6	380.00	923.8 ± 0.8		

1,1-Bis(dodecahydroacenaphthylen-5-yl)-ethane [900001-41-4] $\text{C}_{26}\text{H}_{42}$ MW =354.62 1334

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.
297.59	992.7 ± 0.5	68-ano-1
363.15	986.9 ± 0.7	68-ano-1
372.04	981.7 ± 0.7	68-ano-1

14,15-Dihydro-9H-tribenzo-[a,f,l]trindene [17509-71-6] $\text{C}_{27}\text{H}_{18}$ MW =342.44 1335

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.
<i>crystal</i>		
293.15	1287.0 ± 4.0	53-sch/blo-1
293.15	1288.0 ± 4.0	53-sch/blo-1

9,10-Dihydro-9,9'-bianthracene [73229-32-0] $\text{C}_{28}\text{H}_{20}$ MW =356.47 1336

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	1265.0 ± 2.0	1895-orn/cam

1,10-Decanediyl-5,5'-bis(2,3-dihydro-1H-indene) [55282-70-7] $C_{28}H_{38}$ MW =374.61 1337

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
333.15	950.9 ± 0.5	68-ano-1
372.05	926.0 ± 0.7	68-ano-1
388.15	914.9 ± 0.7	68-ano-1

1,10-Bis(hexahydro-5-indanyl)decane [55334-71-9] $C_{28}H_{50}$ MW =386.70 1338

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
372.05	871.8 ± 0.7	68-ano-1
388.15	861.4 ± 0.7	68-ano-1
408.15	848.6 ± 0.7	68-ano-1

1,10-Bis(1-naphthyl)decane [40339-27-3] $C_{30}H_{34}$ MW =394.60 1339

Table 1. Experimental values with uncertainties.

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.	$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
310.95	1018.5 ± 0.5	68-ano-1	310.93	1018.5 ± 0.5	52-ano-10
333.15	1004.6 ± 0.5	68-ano-1	333.15	1004.6 ± 0.5	52-ano-10
372.05	980.3 ± 0.7	68-ano-1	372.04	980.3 ± 0.7	52-ano-10

1-[1-(3-Cyclohexylpropyl)undecyl]-decahydronaphthalene [55319-78-3] $C_{30}H_{56}$ MW =416.77 1340

Table 1. Fit with estimated B coefficient for 5 accepted points. Deviation $\sigma_w = 0.038$.

Coefficient	$\rho = A + BT$
A	1079.97
B	-0.620

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

$\frac{T}{K}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{\rho_{\text{exp}} - \rho_{\text{calc}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
273.15	910.6 ± 0.5	-0.02	68-ano-1
293.15	898.2 ± 0.5	-0.02	68-ano-1
310.95	887.2 ± 0.5	0.01	68-ano-1
333.15	873.4 ± 0.5	-0.02	68-ano-1
372.05	849.4 ± 0.7	0.10	68-ano-1

cont.

Table 3. Recommended values.

$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$
270.00	912.6 \pm 0.9	310.00	887.8 \pm 0.5	350.00	863.0 \pm 0.9
280.00	906.4 \pm 0.8	320.00	881.6 \pm 0.5	360.00	856.8 \pm 1.1
290.00	900.2 \pm 0.6	330.00	875.4 \pm 0.6	370.00	850.6 \pm 1.3
293.15	898.2 \pm 0.6	340.00	869.2 \pm 0.8	380.00	844.4 \pm 1.5
298.15	895.1 \pm 0.5				

1,1'-Bis(1-naphthyl)-1-undecene**[56247-76-8]****C₃₁H₃₄****MW =406.61****1341****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.	$\frac{T}{\text{K}}$	$\frac{\rho_{\text{exp}} \pm 2\sigma_{\text{est}}}{\text{kg} \cdot \text{m}^{-3}}$	Ref.
310.93	1014.2 \pm 0.5	52-ano-10	310.95	1014.2 \pm 0.5	68-ano-1
333.15	999.8 \pm 0.5	52-ano-10	333.15	999.8 \pm 0.5	68-ano-1
372.04	974.4 \pm 0.7	52-ano-10	372.05	974.4 \pm 0.7	68-ano-1