Phenanthrene, tetradecahydro-

Other names:	Perhydrophenanthrene
	Perhydrophenanthrene, # 1
	Perhydrophenanthrene, # 2
	Perhydrophenanthrene, # 3
	Perhydrophenanthrene, # 4
	Perhydrophenanthrene, # 6
	Perhydrophenanthrene, # 7
	Perhydrophenanthrene, # 8
	Perhydrophenanthrene, # 9
	Perhydrophenanthrene, % 5
	Tetradecahydrophenanthrene
Inchi:	InChI=1S/C14H24/c1-3-7-13-11(5-1)9-10-12-6-2-4-8-14(12)13/h11-14H,1-10H2
InchiKey:	GNMCGMFNBARSIY-UHFFFAOYSA-N
Formula:	C14H24
SMILES:	C1CCC2C(C1)CCC1CCCCC12
Mol. weight [g/mol]:	192.34
CAS:	5743-97-5

Physical Properties

Property code	Value	Unit	Source
gf	181.04	kJ/mol	Joback Method
hf	-165.03	kJ/mol	Joback Method
hfus	16.99	kJ/mol	Joback Method
hvap	47.05	kJ/mol	Joback Method
log10ws	-4.40		Crippen Method
logp	4.393		Crippen Method
mcvol	175.540	ml/mol	McGowan Method
pc	2311.39	kPa	Joback Method
rinpol	1560.00		NIST Webbook
rinpol	1539.00		NIST Webbook
rinpol	1517.00		NIST Webbook
rinpol	1539.00		NIST Webbook
rinpol	1566.00		NIST Webbook
rinpol	1534.00		NIST Webbook
rinpol	1554.00		NIST Webbook
rinpol	1578.00		NIST Webbook
rinpol	1514.00		NIST Webbook

rinpol	1581.00		NIST Webbook
rinpol	1510.00		NIST Webbook
rinpol	1528.00		NIST Webbook
rinpol	1509.00		NIST Webbook
rinpol	1528.00		NIST Webbook
rinpol	1556.00		NIST Webbook
rinpol	1559.00		NIST Webbook
rinpol	1581.00		NIST Webbook
rinpol	1543.00		NIST Webbook
rinpol	1567.00		NIST Webbook
rinpol	1519.00		NIST Webbook
rinpol	1514.00		NIST Webbook
tb	556.62	K	Joback Method
tc	789.03	K	Joback Method
tf	279.52	K	Joback Method
vc	0.649	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	614.30	J/mol×K	789.03	Joback Method
cpg	595.25	J/mol×K	750.29	Joback Method
cpg	574.73	J/mol×K	711.56	Joback Method
cpg	552.65	J/mol×K	672.82	Joback Method
cpg	528.90	J/mol×K	634.09	Joback Method
cpg	503.38	J/mol×K	595.35	Joback Method
cpg	476.02	J/mol×K	556.62	Joback Method
cpl	330.10	J/mol×K	313.00	NIST Webbook
cps	289.50	J/mol×K	298.00	NIST Webbook
cps	345.60	J/mol×K	298.00	NIST Webbook
cps	281.20	J/mol×K	298.00	NIST Webbook
dvisc	0.0006747	Pa×s	556.62	Joback Method
dvisc	0.0011532	Pa×s	418.07	Joback Method
dvisc	0.0021240	Pa×s	325.70	Joback Method
dvisc	0.0015068	Pa×s	371.89	Joback Method
dvisc	0.0007810	Pa×s	510.44	Joback Method
dvisc	0.0009308	Pa×s	464.25	Joback Method
dvisc	0.0033535	Pa×s	279.52	Joback Method
hfust	10.48	kJ/mol	273.00	NIST Webbook
hfust	11.83	kJ/mol	283.00	NIST Webbook
hfust	11.15	kJ/mol	313.00	NIST Webbook

hvapt	55.70	kJ/mol	503.00	NIST Webbook
sfust	41.81	J/mol×K	283.00	NIST Webbook
sfust	35.64	J/mol×K	313.00	NIST Webbook
sfust	38.39	J/mol×K	273.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	8.03900e+00
Coeff. B	-1.02843e+03
Coeff. C	-2.35850e+02
Temperature range (K), min.	368.53
Temperature range (K), max.	612.91

Sources

Joback Method: https://en.wikipedia.org/wiki/Joback_method

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C5743975&Units=SI

The Yaws Handbook of Vapor Pressure: https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

Legend

cpg: Ideal gas heat capacity

cpl: Liquid phase heat capacity

cps: Solid phase heat capacity

dvisc: Dynamic viscosity

gf: Standard Gibbs free energy of formation

hf: Enthalpy of formation at standard conditions

hfus: Enthalpy of fusion at standard conditions

hfust: Enthalpy of fusion at a given temperature

hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume