Cyclohexane, octadecyl-

Other names:	1-cyclohexyloctadecane n-Octadecyl-cyclohexane octadecane, 1-cyclohexyl- octadecylcyclohexane
Inchi:	InChI=1S/C24H48/c1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-18-21-24-22-19-17-20-23-24
InchiKey:	MWWVNZNVTGBKQO-UHFFFAOYSA-N
Formula:	C24H48
SMILES:	CCCCCCCCCCCCCCCCCCC1CCCCC1
Mol. weight [g/mol]:	336.64
CAS:	4445-06-1

Physical Properties

Property code	Value	Unit	Source
gf	175.65	kJ/mol	Joback Method
hf	-484.37	kJ/mol	Joback Method
hfus	49.75	kJ/mol	Joback Method
hvap	69.45	kJ/mol	Joback Method
log10ws	-9.52		Crippen Method
logp	9.218		Crippen Method
mcvol	338.160	ml/mol	McGowan Method
pc	908.89	kPa	Joback Method
rinpol	2486.00		NIST Webbook
rinpol	2473.00		NIST Webbook
rinpol	2481.10		NIST Webbook
rinpol	2486.70		NIST Webbook
ripol	2502.40		NIST Webbook
tb	768.07	K	Joback Method
tc	948.71	K	Joback Method
tf	314.80 ± 0.50	K	NIST Webbook
tf	316.40 ± 2.00	K	NIST Webbook
tf	314.15 ± 2.00	K	NIST Webbook
tf	314.70 ± 0.10	K	NIST Webbook
vc	1.312	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	1088.11	J/mol×K	768.07	Joback Method
cpg	1112.01	J/mol×K	798.18	Joback Method
cpg	1134.68	J/mol×K	828.28	Joback Method
cpg	1156.15	J/mol×K	858.39	Joback Method
cpg	1176.48	J/mol×K	888.49	Joback Method
cpg	1195.72	J/mol×K	918.60	Joback Method
cpg	1213.90	J/mol×K	948.71	Joback Method
dvisc	0.0027553	Pa×s	367.62	Joback Method
dvisc	0.0008934	Pa×s	434.36	Joback Method
dvisc	0.0003910	Pa×s	501.10	Joback Method
dvisc	0.0002078	Pa×s	567.85	Joback Method
dvisc	0.0001262	Pa×s	634.59	Joback Method
dvisc	0.0000842	Pa×s	701.33	Joback Method
dvisc	0.0000603	Pa×s	768.07	Joback Method
hvapt	100.30	kJ/mol	548.50	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tfp	314.30	K	100.00	Solid-Liquid Equilibria under High Pressure of Eight Pure n-Alkylcyclohexanes
tfp	319.30	K	20000.00	Solid-Liquid Equilibria under High Pressure of Eight Pure n-Alkylcyclohexanes
tfp	324.20	K	39900.00	Solid-Liquid Equilibria under High Pressure of Eight Pure n-Alkylcyclohexanes
tfp	328.80	K	59600.00	Solid-Liquid Equilibria under High Pressure of Eight Pure n-Alkylcyclohexanes

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.46349e+01
Coeff. B	-4.90655e+03
Coeff. C	-1.71383e+02
Temperature range (K), min.	513.37
Temperature range (K), max.	697.64

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C4445061&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
Solid-Liquid Equilibria under High Pressure of Eight Pure n-Alkylcyclohexanes:	https://www.doi.org/10.1021/je600575r
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

cpg:	Ideal gas 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
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

ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tfp:	Melting point
vc:	Critical Volume