1H-Fluorene, dodecahydro-

Other names:	Dodecahydro-1H-fluorene
	Dodecahydrofluorene
	Fluorene, dodecahydro-
	Perhydrofluorene
	Perhydrofluorene, # 1
	Perhydrofluorene, # 2
	Perhydrofluorene, # 3
Inchi:	InChI=1S/C13H22/c1-3-7-12-10(5-1)9-11-6-2-4-8-13(11)12/h10-13H,1-9H2
InchiKey:	OLWAZOBRCQWWDB-UHFFFAOYSA-N
Formula:	C13H22
SMILES:	C1CCC2C(C1)CC1CCCCC12
Mol. weight [g/mol]:	178.31
CAS:	5744-03-6

Physical Properties

Property code	Value	Unit	Source
gf	184.72	kJ/mol	Joback Method
hf	-138.23	kJ/mol	Joback Method
hfus	16.50	kJ/mol	Joback Method
hvap	44.65	kJ/mol	Joback Method
log10ws	-3.98		Crippen Method
logp	4.003		Crippen Method
mcvol	161.450	ml/mol	McGowan Method
pc	2477.65	kPa	Joback Method
rinpol	1447.00		NIST Webbook
rinpol	1466.00		NIST Webbook
rinpol	1464.00		NIST Webbook
rinpol	1430.00		NIST Webbook
rinpol	1455.00		NIST Webbook
rinpol	1442.00		NIST Webbook
rinpol	1489.00		NIST Webbook
ripol	1632.00		NIST Webbook
tb	526.20	K	NIST Webbook
tc	757.82	K	Joback Method
tf	271.77	K	Joback Method
vc	0.602	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	421.40	J/mol×K	529.47	Joback Method
cpg	447.35	J/mol×K	567.53	Joback Method
cpg	471.54	J/mol×K	605.59	Joback Method
cpg	494.09	J/mol×K	643.64	Joback Method
cpg	515.09	J/mol×K	681.70	Joback Method
cpg	534.62	J/mol×K	719.76	Joback Method
cpg	552.80	J/mol×K	757.82	Joback Method
dvisc	0.0024413	Pa×s	271.77	Joback Method
dvisc	0.0018128	Pa×s	314.72	Joback Method
dvisc	0.0014458	Pa×s	357.67	Joback Method
dvisc	0.0012105	Pa×s	400.62	Joback Method
dvisc	0.0010489	Pa×s	443.57	Joback Method
dvisc	0.0009322	Pa×s	486.52	Joback Method
dvisc	0.0008444	Pa×s	529.47	Joback Method
hvapt	55.80	kJ/mol	428.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	2.23868e+01
Coeff. B	-1.04379e+04
Coeff. C	6.87170e+01
Temperature range (K), min.	403.60
Temperature range (K), max.	542.57

Sources

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
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=C5744036&Units=SI

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
vc:	Critical Volume

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