Naphthalene-D8

Other names:	D8-Naphthalene
	[2H8]Naphthalene
	octadeuterionaphthalene
	octadeuteronaphthalene
	perdeuterionaphthalene
	perdeuteronaphthalene
Inchi:	InChI=1S/C10H8/c1-2-6-10-8-4-3-7-9(10)5-1/h1-8H/i1D,2D,3D,4D,5D,6D,7D,8D
InchiKey:	UFWIBTONFRDIAS-PGRXLJNUSA-N
Formula:	C10D8
SMILES:	c1ccc2ccccc2c1
Mol. weight [g/mol]:	136.22
CAS:	1146-65-2

Physical Properties

Property code	Value	Unit	Source
gf	252.38	kJ/mol	Joback Method
hf	177.87	kJ/mol	Joback Method
hfus	12.72	kJ/mol	Joback Method
hvap	54.70	kJ/mol	NIST Webbook
ie	8.14 ± 0.01	eV	NIST Webbook
ie	8.12 ± 0.01	eV	NIST Webbook
ie	8.12 ± 0.02	eV	NIST Webbook
log10ws	-3.28		Crippen Method
logp	2.840		Crippen Method
mcvol	108.540	ml/mol	McGowan Method
pc	3896.50	kPa	Joback Method
rinpol	199.30		NIST Webbook
rinpol	199.48		NIST Webbook
tb	473.86	K	Joback Method
tc	711.47	K	Joback Method
tf	261.58	K	Joback Method
vc	0.409	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	277.18	J/mol×K	711.47	Joback Method
cpg	209.58	J/mol×K	473.86	Joback Method
cpg	223.38	J/mol×K	513.46	Joback Method
cpg	236.07	J/mol×K	553.06	Joback Method
cpg	247.71	J/mol×K	592.67	Joback Method
cpg	258.39	J/mol×K	632.27	Joback Method
cpg	268.18	J/mol×K	671.87	Joback Method
dvisc	0.0003173	Pa×s	473.86	Joback Method
dvisc	0.0017226	Pa×s	261.58	Joback Method
dvisc	0.0010984	Pa×s	296.96	Joback Method
dvisc	0.0007708	Pa×s	332.34	Joback Method
dvisc	0.0005791	Pa×s	367.72	Joback Method
dvisc	0.0004574	Pa×s	403.10	Joback Method
dvisc	0.0003754	Pa×s	438.48	Joback Method
hsubt	70.60 ± 0.50	kJ/mol	302.50	NIST Webbook
hvapt	54.65	kJ/mol	298.00	Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects

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=C1146652&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects:	https://www.doi.org/10.1021/je800091s

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