1,8-NAPHTHALENEDIAMINE, N,N,N',N'-TETRAMETHYL-

Other names: 1,8-bis(dimethylamino)naphthalene
N,N,N',N'-tetramethyl-1,8-naphthalenediamine
N,N,N',N'-tetramethylnaphthalene-1,8-diamine
Proton sponge

Inchi: InChI=1S/C14H18N2/c1-15(2)12-9-5-7-11-8-6-10-13(14(11)12)16(3)4/h5-10H,1-4H3

InchiKey: GJFNRSDCSTVPCJ-UHFFFAOYSA-N

Formula: C14H18N2

SMILES: CN(C)c1cccc2cccc(N(C)C)c12

Mol. weight [g/mol]: 214.31

Physical Properties

Property code	Value	Unit	Source
affp	1028.20	kJ/mol	NIST Webbook
basg	995.80	kJ/mol	NIST Webbook
hf	155.28	kJ/mol	Cheméo Relay (1.0)
hfus	17.50	kJ/mol	Thermochemical and structural properties of DMAN- "proton sponges"
hsub	94.70 ± 0.80	kJ/mol	NIST Webbook
hvap	76.70 ± 0.40	kJ/mol	NIST Webbook
ie	6.45 ± 0.02	eV	NIST Webbook
log10ws	-3.77		Cheméo Relay (1.0)
logp	2.972		Crippen Method
mcvol	184.860	ml/mol	McGowan Method
pc	2450.74	kPa	Joback Method
tb	591.67	K	Cheméo Relay (1.0)
tc	855.14	K	Cheméo Relay (1.0)
tf	373.84	K	Cheméo Relay (1.0)
vc	0.682	m3/kmol	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	463.32	J/mol×K	600.22	Joback Method

cpg	550.54	J/mol×K	816.55	Joback Method
cpg	538.38	J/mol×K	780.50	Joback Method
cpg	525.38	J/mol×K	744.44	Joback Method
cpg	511.46	J/mol×K	708.39	Joback Method
cpg	496.52	J/mol×K	672.33	Joback Method
cpg	480.50	J/mol×K	636.28	Joback Method
pvap	0.01	kPa	349.20	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.03	kPa	361.20	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.01	kPa	346.30	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	2.04e-03	kPa	323.70	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.02	kPa	352.30	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.02	kPa	355.20	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.03	kPa	358.40	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	9.46e-03	kPa	343.40	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	0.04	kPa	364.30	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	7.33e-03	kPa	340.30	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes

pvap	5.99e-03	kPa	337.50	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	4.84e-03	kPa	334.50	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	4.47e-03	kPa	333.30	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	4.08e-03	kPa	332.10	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	3.20e-03	kPa	329.20	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes
pvap	2.54e-03	kPa	326.20	Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Thermochemical and structural properties of DMAN- "proton sponges"	https://www.doi.org/10.1016/j.jct.2012.05.013
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Cheméo Relay (1.0):	
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C20734581&Units=SI
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Cheméo Relay (1.0, beta):	
Vapor Pressures and Phase Transitions of a Series of the Aminonaphthalenes:	https://www.doi.org/10.1021/je060394v
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

affp:	Proton affinity
basg:	Gas basicity

cpg:	Ideal gas heat capacity
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hsub:	Enthalpy of sublimation at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume