

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
CAS:	20734-58-1

Physical Properties

Property code	Value	Unit	Source
affp	1028.20	kJ/mol	NIST Webbook
basg	995.80	kJ/mol	NIST Webbook
gf	488.36	kJ/mol	Joback Method
hf	207.43	kJ/mol	Joback Method
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	-3.09		Crippen Method
logp	2.972		Crippen Method
mcvol	184.860	ml/mol	McGowan Method
pc	2450.74	kPa	Joback Method
tb	600.22	K	Joback Method
tc	816.55	K	Joback Method
tf	396.64	K	Joback Method
vc	0.669	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
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cpg	463.32	J/mol×K	600.22	Joback Method
cpg	480.50	J/mol×K	636.28	Joback Method
cpg	496.52	J/mol×K	672.33	Joback Method
cpg	511.46	J/mol×K	708.39	Joback Method
cpg	525.38	J/mol×K	744.44	Joback Method
cpg	538.38	J/mol×K	780.50	Joback Method
cpg	550.54	J/mol×K	816.55	Joback Method
pvap	4.47e-03	kPa	333.30	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
pvap	3.20e-03	kPa	329.20	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	2.04e-03	kPa	323.70	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	5.99e-03	kPa	337.50	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	9.46e-03	kPa	343.40	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	0.01	kPa	349.20	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	0.03	kPa	361.20	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

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C20734581&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Thermochemical and structural properties of DMAN- "proton sponges"	https://www.doi.org/10.1016/j.jct.2012.05.013
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
gf:	Standard Gibbs free energy of formation

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

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