Methanediamine, N,N,N',N'-tetramethyl-

Other names:	((CH3)2N)2CH2
	Bis(dimethylamino)methane
	Dimethyl[(dimethylamino)methyl]amine
	Methylenebis(dimethylamine)
	Methylenediamine, N,N,N',N'-tetramethyl-
	N,N,N',N'-Tetramethyldiaminomethan
	N,N,N',N'-Tetramethyldiaminomethane
	N,N,N',N'-Tetramethylmethanediamine
	N,N,N',N'-Tetramethylmethylenediamine
	NA 9069
	NSC 166169
	Tetramethylmethylenediamine
Inchi:	InChI=1S/C5H14N2/c1-6(2)5-7(3)4/h5H2,1-4H3
InchiKey:	VGIVLIHKENZQHQ-UHFFFAOYSA-N
Formula:	C5H14N2
SMILES:	CN(C)CN(C)C
Mol. weight [g/mol]:	102.18
CAS:	51-80-9

Physical Properties

Property code	Value	Unit	Source
affp	952.20	kJ/mol	NIST Webbook
basg	919.80	kJ/mol	NIST Webbook
gf	212.78	kJ/mol	Joback Method
hf	-11.47	kJ/mol	Joback Method
hfus	14.75	kJ/mol	Joback Method
hvap	30.81	kJ/mol	Joback Method
ie	7.74 ± 0.05	eV	NIST Webbook
ie	7.74 ± 0.03	eV	NIST Webbook
ie	7.74 ± 0.05	eV	NIST Webbook
log10ws	0.45		Crippen Method
logp	0.067		Crippen Method
mcvol	101.270	ml/mol	McGowan Method
pc	3452.08	kPa	Joback Method
tb	358.20	K	NIST Webbook
tc	499.99	K	Joback Method
tf	211.05	K	Joback Method

vc	0.351	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	173.55	J/mol×K	338.68	Joback Method
cpg	185.36	J/mol×K	365.56	Joback Method
cpg	196.68	J/mol×K	392.45	Joback Method
cpg	207.52	J/mol×K	419.33	Joback Method
cpg	217.90	J/mol×K	446.22	Joback Method
cpg	227.83	J/mol×K	473.10	Joback Method
cpg	237.33	J/mol×K	499.99	Joback Method
hvapt	32.30	kJ/mol	310.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.53769e+01
Coeff. B	-3.42165e+03
Coeff. C	-4.01600e+01
Temperature range (K), min.	242.26
Temperature range (K), max.	380.10

Sources

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=C51809&Units=SI

The Yaws Handbook of Vapor Pressure: https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

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
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
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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