

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

Other names:	((CH <sub>3</sub> ) <sub>2</sub> N) <sub>2</sub> CH <sub>2</sub> 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:	C <sub>5</sub> H <sub>14</sub> N <sub>2</sub>
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 ± 0.05	eV	NIST Webbook
ie	7.74 ± 0.03	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	227.83	J/mol×K	473.10	Joback Method
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	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	$\ln(P_{vp}) = A + B/(T + C)$
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

The Yaws Handbook of Vapor Pressure: Crippen Method:	<a href="https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure">https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure</a> <a href="http://pubs.acs.org/doi/abs/10.1021/ci9903071">http://pubs.acs.org/doi/abs/10.1021/ci9903071</a>
Crippen Method:	<a href="https://www.chemeo.com/doc/models/crippen_log10ws">https://www.chemeo.com/doc/models/crippen_log10ws</a>
Joback Method:	<a href="https://en.wikipedia.org/wiki/Joback_method">https://en.wikipedia.org/wiki/Joback_method</a>
McGowan Method:	<a href="http://link.springer.com/article/10.1007/BF02311772">http://link.springer.com/article/10.1007/BF02311772</a>
NIST Webbook:	<a href="http://webbook.nist.gov/cgi/cbook.cgi?ID=C51809&amp;Units=SI">http://webbook.nist.gov/cgi/cbook.cgi?ID=C51809&amp;Units=SI</a>

# Legend

<b>affp:</b>	Proton affinity
<b>basg:</b>	Gas basicity
<b>cpg:</b>	Ideal gas heat capacity
<b>gf:</b>	Standard Gibbs free energy of formation
<b>hf:</b>	Enthalpy of formation at standard conditions
<b>hfus:</b>	Enthalpy of fusion at standard conditions
<b>hvap:</b>	Enthalpy of vaporization at standard conditions
<b>hvapt:</b>	Enthalpy of vaporization at a given temperature
<b>ie:</b>	Ionization energy
<b>log10ws:</b>	Log10 of Water solubility in mol/l
<b>logp:</b>	Octanol/Water partition coefficient
<b>mcvol:</b>	McGowan's characteristic volume
<b>pc:</b>	Critical Pressure
<b>pvap:</b>	Vapor pressure
<b>tb:</b>	Normal Boiling Point Temperature
<b>tc:</b>	Critical Temperature
<b>tf:</b>	Normal melting (fusion) point
<b>vc:</b>	Critical Volume

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