Dimethylamine

Other names:	(CH3)2NH Methanamine, N-methyl- N,N-Dimethylamine N-Methylmethanamine NSC 8650 Rcra waste number U092 UN 1032 methylaminomethane
Inchi:	InChI=1S/C2H7N/c1-3-2/h3H,1-2H3
InchiKey:	ROSDSFDQCJNGOL-UHFFFAOYSA-N
Formula:	C2H7N
SMILES:	CNC
Mol. weight [g/mol]:	45.08
CAS:	124-40-3

Physical Properties

Property code	Value	Unit	Source
affp	929.50	kJ/mol	NIST Webbook
basg	896.50	kJ/mol	NIST Webbook
chl	-1750.00	kJ/mol	NIST Webbook
chl	-1792.00	kJ/mol	NIST Webbook
gf	55.35	kJ/mol	Joback Method
hf	-23.80	kJ/mol	NIST Webbook
hf	-19.00 ± 2.00	kJ/mol	NIST Webbook
hfl	-45.00 ± 2.00	kJ/mol	NIST Webbook
hfl	-49.80	kJ/mol	NIST Webbook
hfus	6.04	kJ/mol	Joback Method
hvap	26.50 ± 0.10	kJ/mol	NIST Webbook
hvap	26.00	kJ/mol	NIST Webbook
hvap	25.40 ± 0.04	kJ/mol	NIST Webbook
hvap	25.44	kJ/mol	NIST Webbook
ie	8.93	eV	NIST Webbook
ie	8.36	eV	NIST Webbook
ie	8.25	eV	NIST Webbook
ie	8.85	eV	NIST Webbook
ie	8.20	eV	NIST Webbook
ie	8.20 ± 0.10	eV	NIST Webbook

ie	8.97	eV	NIST Webbook
ie	8.24 ± 0.02	eV	NIST Webbook
ie	8.83	eV	NIST Webbook
ie	8.20 ± 0.10	eV	NIST Webbook
ie	8.30	eV	NIST Webbook
ie	8.25 ± 0.02	eV	NIST Webbook
ie	8.07	eV	NIST Webbook
ie	8.24 ± 0.08	eV	NIST Webbook
ie	8.95	eV	NIST Webbook
log10ws	0.15		Crippen Method
logp	-0.164		Crippen Method
mcvol	49.020	ml/mol	McGowan Method
pc	5304.36 ± 30.39	kPa	NIST Webbook
pc	5312.47 ± 40.53	kPa	NIST Webbook
pc	5340.00 ± 3.00	kPa	NIST Webbook
rinpol	426.00		NIST Webbook
rinpol	425.00		NIST Webbook
rinpol	405.00		NIST Webbook
rinpol	434.00		NIST Webbook
rinpol	458.00		NIST Webbook
rinpol	434.00		NIST Webbook
ripol	650.00		NIST Webbook
ripol	646.00		NIST Webbook
sl	173.85	J/mol×K	NIST Webbook
tb	295.33	K	Joback Method
tc	437.75 ± 0.30	K	NIST Webbook
tc	437.22 ± 0.15	K	NIST Webbook
tc	437.70 ± 0.30	K	NIST Webbook
tf	177.15 ± 0.50	K	NIST Webbook
tf	180.15 ± 0.40	K	NIST Webbook
tf	178.90 ± 0.50	K	NIST Webbook
tf	180.15 ± 1.50	K	NIST Webbook
tf	180.25 ± 1.00	K	NIST Webbook
tt	180.97 ± 0.02	K	NIST Webbook
vc	0.182	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	98.72	J/mol×K	464.10	Joback Method
cpg	74.01	J/mol×K	323.46	Joback Method

cpg	79.29	J/mol×K	351.59	Joback Method
cpg	84.40	J/mol×K	379.71	Joback Method
cpg	89.34	J/mol×K	407.84	Joback Method
cpg	94.11	J/mol×K	435.97	Joback Method
cpg	68.55	J/mol×K	295.33	Joback Method
cpl	136.77	J/mol×K	280.44	NIST Webbook
hfust	5.94	kJ/mol	181.00	NIST Webbook
hfust	5.94	kJ/mol	180.97	NIST Webbook
hfust	5.94	kJ/mol	181.00	NIST Webbook
hvapt	26.48	kJ/mol	280.03	NIST Webbook
hvapt	26.40	kJ/mol	280.00	NIST Webbook
hvapt	27.00	kJ/mol	318.50	NIST Webbook
hvapt	23.80	kJ/mol	398.00	NIST Webbook
hvapt	28.40	kJ/mol	240.50	NIST Webbook
sfust	32.83	J/mol×K	180.97	NIST Webbook
svapt	94.58	J/mol×K	280.03	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.60401e+01
Coeff. B	-5.86486e+03
Coeff. C	-1.08886e+01
Coeff. D	1.11571e-05
Temperature range (K), min.	180.96
Temperature range (K), max.	437.65

Sources

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

Surface Tensions and Densities of Sulfuric Acid + Dimethylamine + Water solutions: https://www.doi.org/10.1021/je034225b

Joback Method: https://en.wikipedia.org/wiki/Joback_method

KDB: https://www.cheric.org/files/research/kdb/mol/mol1257.mol

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C124403&Units=SI

KDB Vapor Pressure Data: https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1257

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Legend

affp:	Proton affinity
basg:	Gas basicity
chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion 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
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
sfust:	Entropy of fusion at a given temperature
sl:	Liquid phase molar entropy at standard conditions
svapt:	Entropy of vaporization at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume