2-Propanamine, N,N-dimethyl-

Other names:	(CH3)2(i-C3H7)N
	2-Dimethylaminopropane
	Dimethylisopropylamine
	Ethylamine, N,N,1-trimethyl-
	Isopropyldimethylamine
	N,N-Dimethylisopropylamine
Inchi:	InChI=1S/C5H13N/c1-5(2)6(3)4/h5H,1-4H3
InchiKey:	VMOWKUTXPNPTEN-UHFFFAOYSA-N
Formula:	C5H13N
SMILES:	CC(C)N(C)C
Mol. weight [g/mol]:	87.16
CAS:	996-35-0

Physical Properties

Property code	Value	Unit	Source
affp	970.60	kJ/mol	NIST Webbook
basg	939.60	kJ/mol	NIST Webbook
gf	99.56	kJ/mol	Joback Method
hf	-84.28	kJ/mol	Joback Method
hfus	8.20	kJ/mol	Joback Method
hvap	28.38	kJ/mol	Joback Method
ie	7.30	eV	NIST Webbook
ie	8.20	eV	NIST Webbook
log10ws	-0.60		Crippen Method
logp	0.956		Crippen Method
mcvol	91.290	ml/mol	McGowan Method
pc	3493.01	kPa	Joback Method
rinpol	607.00		NIST Webbook
rinpol	601.00		NIST Webbook
rinpol	601.00		NIST Webbook
rinpol	607.00		NIST Webbook
tb	339.13	K	Isobaric vapour-liquid equilibrium measurements and extractive distillation process for the azeotrope of (N,N-dimethylisopropylamine + acetone)
tb	337.95 ± 2.00	K	NIST Webbook

tb	340.40 ± 3.00	K	NIST Webbook
tc	491.76	K	Joback Method
tf	163.58	K	Joback Method
vc	0.328	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	207.40	J/mol×K	491.76	Joback Method
cpg	198.57	J/mol×K	464.10	Joback Method
cpg	189.37	J/mol×K	436.44	Joback Method
cpg	179.78	J/mol×K	408.78	Joback Method
cpg	169.80	J/mol×K	381.12	Joback Method
cpg	159.40	J/mol×K	353.46	Joback Method
cpg	148.59	J/mol×K	325.80	Joback Method
pvap	85.32	kPa	334.05	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	41.79	kPa	313.79	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	41.80	kPa	313.79	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

pvap	60.66	kPa	324.02	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	60.72	kPa	324.02	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	85.34	kPa	334.05	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	85.36	kPa	334.05	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	85.42	kPa	334.05	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

pvap	41.76	kPa	313.79	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	6.65	kPa	273.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	11.11	kPa	283.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	17.77	kPa	293.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	27.37	kPa	303.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

pvap	40.76	kPa	313.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	58.90	kPa	323.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	82.89	kPa	333.15	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	101.30	kPa	339.13	Isobaric vapour-liquid equilibrium measurements and extractive distillation process for the azeotrope of (N,N-dimethylisopropylamine + acetone)
pvap	28.18	kPa	303.82	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

pvap	18.39	kPa	293.81	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	18.30	kPa	293.81	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	11.39	kPa	283.86	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	7.20	kPa	274.58	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions
pvap	7.18	kPa	274.58	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

pvap	7.18	kPa	274.58	Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	338.70	K	100.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.41563e+01
Coeff. B	-2.42928e+03
Coeff. C	-7.95150e+01
Temperature range (K), min.	254.68
Temperature range (K), max.	354.17

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Measurement and correlation of the (vapor + liquid) equilibria of pure 4-ethylmorpholine, 1,2-dimethylisopropylamine and N,N-dimethylethanolamine, and their binary aqueous solutions:	https://www.doi.org/10.1016/j.jct.2013.03.020
Isobaric vapour-liquid equilibrium measurements and extractive distillation process for the azeotrope of (N,N-dimethylisopropylamine + acetone):	https://www.doi.org/10.1016/j.jct.2018.03.019
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=C996350&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l

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
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
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume