

# 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:	VMOWKUTXPNTEN-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	601.00		NIST Webbook
rinpol	601.00		NIST Webbook
rinpol	607.00		NIST Webbook
rinpol	607.00		NIST Webbook
tb	337.95 ± 2.00	K	NIST Webbook
tb	340.40 ± 3.00	K	NIST Webbook

tb	339.13	K	Isobaric vapour-liquid equilibrium measurements and extractive distillation process for the azeotrope of (N,N-dimethylisopropylamine + acetone)
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/molxK	491.76	Joback Method
cpg	198.57	J/molxK	464.10	Joback Method
cpg	189.37	J/molxK	436.44	Joback Method
cpg	179.78	J/molxK	408.78	Joback Method
cpg	169.80	J/molxK	381.12	Joback Method
cpg	159.40	J/molxK	353.46	Joback Method
cpg	148.59	J/molxK	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	$\ln(P_{vp}) = A + B/(T + C)$
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

Measurement and correlation of the (vapor + liquid) equilibria of pure and binary vapour-liquid equilibrium systems involving propanamine and acetone. Measurements and correlations of the (vapor + liquid) equilibria of pure and binary vapour-liquid equilibrium systems involving propanamine and acetone. (N,N-dimethylpropanamine + acetone).  
Crippen Method.

<https://www.doi.org/10.1016/j.jct.2013.03.020>

<https://www.doi.org/10.1016/j.jct.2018.03.019>

[https://en.wikipedia.org/wiki/Joback\\_method](https://en.wikipedia.org/wiki/Joback_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

<https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure>

Pressure:

Crippen Method:

<http://pubs.acs.org/doi/abs/10.1021/ci990307l>

Crippen Method:

[https://www.chemeo.com/doc/models/crippen\\_log10ws](https://www.chemeo.com/doc/models/crippen_log10ws)

## 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>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>rinpol:</b>	Non-polar retention indices
<b>tb:</b>	Normal Boiling Point Temperature
<b>tbrp:</b>	Boiling point at reduced pressure
<b>tc:</b>	Critical Temperature
<b>tf:</b>	Normal melting (fusion) point
<b>vc:</b>	Critical Volume

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