

Formamide, N,N-dibutyl-

Other names:	DBF Dibutylamid kyseliny mravenci Dibutylformamide Formamide, N,N-di-n-butyl- N,N-Di-n-butylformamide N,N-Dibutylformamide
Inchi:	InChI=1S/C9H19NO/c1-3-5-7-10(9-11)8-6-4-2/h9H,3-8H2,1-2H3
InchiKey:	NZMAJUHVVSZBJHL-UHFFFAOYSA-N
Formula:	C9H19NO
SMILES:	CCCCN(C=O)CCCC
Mol. weight [g/mol]:	157.25
CAS:	761-65-9

Physical Properties

Property code	Value	Unit	Source
gf	36.16	kJ/mol	Joback Method
hf	-247.14	kJ/mol	Joback Method
hfus	24.38	kJ/mol	Joback Method
hvap	44.39	kJ/mol	Joback Method
log10ws	-1.94		Crippen Method
logp	2.045		Crippen Method
mcvol	149.220	ml/mol	McGowan Method
pc	2475.19	kPa	Joback Method
ripol	1310.00		NIST Webbook
ripol	1310.00		NIST Webbook
ripol	1319.00		NIST Webbook
ripol	1310.00		NIST Webbook
ripol	1742.00		NIST Webbook
ripol	1744.00		NIST Webbook
ripol	1767.00		NIST Webbook
ripol	1767.00		NIST Webbook
ripol	1746.00		NIST Webbook
ripol	1773.00		NIST Webbook
tb	466.42	K	Joback Method
tc	634.63	K	Joback Method
tf	265.66	K	Joback Method
vc	0.575	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	330.90	J/mol×K	466.42	Joback Method
cpg	406.31	J/mol×K	634.63	Joback Method
cpg	395.10	J/mol×K	606.59	Joback Method
cpg	383.38	J/mol×K	578.56	Joback Method
cpg	371.11	J/mol×K	550.52	Joback Method
cpg	358.29	J/mol×K	522.49	Joback Method
cpg	344.89	J/mol×K	494.45	Joback Method
pvap	0.01	kPa	308.70	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.02	kPa	315.30	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.02	kPa	314.70	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.01	kPa	313.30	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.01	kPa	312.50	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.01	kPa	311.60	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.01	kPa	310.70	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.02	kPa	318.20	Vapour pressures and enthalpies of vaporisation of alkyl formamides

pvap	0.02	kPa	318.40	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.03	kPa	321.10	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.03	kPa	322.60	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.03	kPa	322.80	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.03	kPa	323.80	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.04	kPa	326.80	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	2.60e-03	kPa	293.10	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	3.29e-03	kPa	295.80	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	3.65e-03	kPa	296.90	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	4.00e-03	kPa	298.00	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	4.21e-03	kPa	298.70	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	4.38e-03	kPa	298.90	Vapour pressures and enthalpies of vaporisation of alkyl formamides

pvap	5.34e-03	kPa	301.40	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	7.05e-03	kPa	304.60	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	7.09e-03	kPa	304.80	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	9.70e-03	kPa	308.30	Vapour pressures and enthalpies of vaporisation of alkyl formamides
pvap	0.05	kPa	329.60	Vapour pressures and enthalpies of vaporisation of alkyl formamides
rho1	854.82	kg/m3	323.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
rho1	859.01	kg/m3	318.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K

rho	863.11	kg/m ³	313.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
rho	867.15	kg/m ³	308.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
rho	871.17	kg/m ³	303.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
rho	875.12	kg/m ³	298.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K

rho	879.05	kg/m ³	293.15	Volumetric Properties of Binary Mixtures of 1-Butyl-3-Methylimidazolium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
rho	854.82	kg/m ³	323.15	Volumetric Properties of Binary Mixtures of 1-Butyl-1-Methylpyrrolidinium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K
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Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	393.20	K	2.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.17784e+01
Coeff. B	-3.31172e+03
Coeff. C	-7.50140e+01
Temperature range (K), min.	363.22
Temperature range (K), max.	587.12

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C761659&Units=SI
Volumetric Properties of Binary Mixtures of	https://www.doi.org/10.1021/je5002945
Volumetric Properties of Binary Mixtures of	https://www.doi.org/10.1021/je400803f
Mixtures of (propyl)trifluorophosphate and N,N-dimethylformamide	https://en.wikipedia.org/wiki/Joback_method
Tris (pentafluorophenyl) trifluorophosphate	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
N,N-Dimethylformamide, N,N-Dimethylacetamide, and N,N-Dimethylacetamide from (293.15 to 323.15) K:	https://www.doi.org/10.1016/j.fluid.2019.04.036
	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

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
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rho:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	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

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