N-Ethylformamide

Other names:	Ethylformamide
	Formamide, N-ethyl-
	N-Aethylformamid
	N-Formylethylamine
Inchi:	InChI=1S/C3H7NO/c1-2-4-3-5/h3H,2H2,1H3,(H,4,5)
InchiKey:	KERBAAIBDHEFDD-UHFFFAOYSA-N
Formula:	C3H7NO
SMILES:	CCNC=O
Mol. weight [g/mol]:	73.09
CAS:	627-45-2

Physical Properties

Property code	Value	Unit	Source
gf	-35.75	kJ/mol	Joback Method
hf	-137.36	kJ/mol	Joback Method
hfus	10.91	kJ/mol	Joback Method
hvap	58.40	kJ/mol	NIST Webbook
hvap	58.44	kJ/mol	NIST Webbook
log10ws	-0.04		Crippen Method
logp	-0.248		Crippen Method
mcvol	64.680	ml/mol	McGowan Method
pc	4966.33	kPa	Joback Method
rinpol	794.00		NIST Webbook
tb	471.20	K	NIST Webbook
tc	546.91	K	Joback Method
tf	218.23	K	Joback Method
vc	0.256	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	147.28	J/mol×K	546.91	Joback Method
cpg	142.03	J/mol×K	516.90	Joback Method
cpg	136.55	J/mol×K	486.90	Joback Method

cpg	130.83	J/mol×K	456.89	Joback Method
cpg	124.86	J/mol×K	426.88	Joback Method
cpg	118.65	J/mol×K	396.88	Joback Method
cpg	112.17	J/mol×K	366.87	Joback Method
rhol	930.45	kg/m3	318.15	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
rhol	939.04	kg/m3	308.15	Volumetric Properties of Binary Mixtures of N-Ethylformamide with Tetrahydropyran, 2-Pentanone, and Propylacetate from (293.15 to 313.15) K
rhol	934.78	kg/m3	313.15	Volumetric Properties of Binary Mixtures of N-Ethylformamide with Tetrahydropyran, 2-Pentanone, and Propylacetate from (293.15 to 313.15) K
rhol	951.59	kg/m3	293.15	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

rhol	947.48	kg/m3	298.15	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
rhol	943.29	kg/m3	303.15	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
rhol	939.04	kg/m3	308.15	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
rhol	934.78	kg/m3	313.15	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

rhol	943.29	kg/m3	303.15	Volumetric Properties of Binary Mixtures of N-Ethylformamide with Tetrahydropyran, 2-Pentanone, and Propylacetate from (293.15 to 313.15) K
rhol	926.06	kg/m3	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
rhol	951.59	kg/m3	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
rhol	947.48	kg/m3	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

rhol	943.29	kg/m3	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
rhol	939.04	kg/m3	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
rhol	934.78	kg/m3	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
rhol	930.45	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

rhol	926.06	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
rhol	947.48	kg/m3	298.15	Volumetric Properties of Binary Mixtures of N-Ethylformamide with Tetrahydropyran, 2-Pentanone, and Propylacetate from (293.15 to 313.15) K
rhol	951.59	kg/m3	293.15	Volumetric Properties of Binary Mixtures of N-Ethylformamide with Tetrahydropyran, 2-Pentanone, and Propylacetate from (293.15 to 313.15) K
rhol	934.78	kg/m3	313.15	Volumetric properties of binary mixtures of N-ethylformamide with tetrahydrofuran, 2-butanone and ethylacetate from (293.15 to 313.15) K
rhol	939.04	kg/m3	308.15	Volumetric properties of binary mixtures of N-ethylformamide with tetrahydrofuran, 2-butanone and ethylacetate from (293.15 to 313.15) K

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rhol	947.48	kg/m3	298.15	Volumetric properties of binary mixtures of N-ethylformamide with tetrahydrofuran, 2-butanone and ethylacetate from (293.15 to 313.15) K
rhol	951.59	kg/m3	293.15	Volumetric properties of binary mixtures of N-ethylformamide with tetrahydrofuran, 2-butanone and ethylacetate from (293.15 to 313.15) K

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.51551e+01
Coeff. B	-4.20439e+03
Coeff. C	-7.21300e+01
Temperature range (K), min.	354.92
Temperature range (K), max.	499.25

Sources

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
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
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:	https://www.doi.org/10.1021/je400803f
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C627452&Units=SI
Volumetric Properties of Binary Mixtures of N-Ethylformamide with N-Methylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, 2-Butanone, and Ethyl Acetate from (293.15 to 313.15) K:	https://www.doi.org/10.1021/je300974g
Volumetric Properties of Binary Mixtures of N-Ethylformamide with N-Methylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, 2-Butanone, and Ethyl Acetate from (293.15 to 313.15) K:	https://www.doi.org/10.1021/je5002945
1-Butyl-1-methylpyrrolidinium Tris(pentafluoroethyl)trifluorophosphate with N-Methylformamide, N-Ethylformamide, N,N-Dimethylformamide, N,N-Dibutylformamide, 2-Butanone, and Ethyl Acetate from (293.15 to 313.15) K:	https://www.doi.org/10.1016/j.jct.2012.02.033
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

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
rhol:	Liquid Density
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume