2-Imidazolidinone, 1,3-dimethyl-

Other names:	1,3-Dimethyl-2-imidazolidone
	1,3-Dimethylethyleneurea
	1,3-Dimethylimidazolidin-2-one
	1,3-Dimethylimidazolidinone
	1,3-dimethyl-2-imidazolidinone
	Dimethylethyleneurea
	N,N'-Dimethyl-2-imidazolidinone
	N,N'-dimethylethyleneurea
	Rhonite 1
Inchi:	InChI=1S/C5H10N2O/c1-6-3-4-7(2)5(6)8/h3-4H2,1-2H3
InchiKey:	CYSGHNMQYZDMIA-UHFFFAOYSA-N
Formula:	C5H10N2O
SMILES:	CN1CCN(C)C1=O
Mol. weight [g/mol]:	114.15
CAS:	80-73-9

Physical Properties

Property code	Value	Unit	Source
affp	918.40	kJ/mol	NIST Webbook
basg	886.00	kJ/mol	NIST Webbook
log10ws	0.30		Crippen Method
logp	-0.016		Crippen Method
mcvol	91.980	ml/mol	McGowan Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
hvapt	54.30	kJ/mol	426.50	NIST Webbook
hvapt	48.50	kJ/mol	426.50	NIST Webbook

rhol	1064.86	kg/m3	283.15	Excess molar volumes of binary mixtures of 1,3-dimethylimidazolidin-2-one with an alkan-1-ol at the temperatures 283.15 K, 298.15 K, and 313.15 K
rhol	1051.59	kg/m3	298.15	Excess molar volumes of binary mixtures of 1,3-dimethylimidazolidin-2-one with an alkan-1-ol at the temperatures 283.15 K, 298.15 K, and 313.15 K
rhol	1038.38	kg/m3	313.15	Excess molar volumes of binary mixtures of 1,3-dimethylimidazolidin-2-one with an alkan-1-ol at the temperatures 283.15 K, 298.15 K, and 313.15 K
rhol	1069.30	kg/m3	278.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K
rhol	1060.43	kg/m3	288.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K
rhol	1051.60	kg/m3	298.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K
rhol	1042.79	kg/m3	308.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K

rhol	1038.38	kg/m3	313.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K
rhol	1034.00	kg/m3	318.15	D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K
rhol	1058.00	kg/m3	293.15	Investigation of the Solubilities of Carbon Dioxide in Some Low Volatile Solvents and Their Thermodynamic Properties

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	380.20	K	2.30	NIST Webbook
tbrp	382.50 ± 0.50	K	2.40	NIST Webbook

Sources

Excess molar volumes of binary mixtures of 1,3-dimethylimidazolidin-2-one with an alkan-1-ol at the temperatures 283.15 K, 298.15 K, and 313.15 K:	https://www.doi.org/10.1016/j.jct.2006.09.017
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C80739&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
(Liquid + liquid) equilibria of (heptane, or hexane, or cyclohexane + toluene + 1,3-dimethyl-2-imidazolidinone) ternary systems at p = 298.15 kPa:	https://www.doi.org/10.1016/j.jct.2009.11.009
Enthalpy-related interaction parameters in H2O isotopically distinguishable aqueous solutions of tetramethylurea cyclic derivatives at 298.15 K:	https://www.doi.org/10.1016/j.tca.2011.05.019
Investigation of the Solubilities of Carbon Dioxide in Some Low Volatile Solvents and Their Thermodynamic Properties:	https://www.doi.org/10.1021/acs.jced.5b00893
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Solubility and thermodynamic properties of SO2 in three low volatile urea derivatives:	https://www.doi.org/10.1016/j.jct.2016.05.004
D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K:	https://www.doi.org/10.1016/j.jct.2009.06.019

Legend

affp:	Proton affinity
basg:	Gas basicity
hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
rhol:	Liquid Density
tbrp:	Boiling point at reduced pressure