

# 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

rhoI	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
rhoI	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
rhoI	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
rhoI	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
rhoI	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
rhoI	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
rhoI	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

rhoI	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
rhoI	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
rhoI	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

Solubility and thermodynamic properties of SO2 in three low volatile solvents: NIST Webbook:

<https://www.doi.org/10.1016/j.jct.2016.05.004>
<http://webbook.nist.gov/cgi/cbook.cgi?ID=C80739&Units=SI>

Excess molar volumes of binary mixtures of 1,3-dimethyl-2-imidazolidin-2-one with an alkan-1-ol at the temperatures 283.15 K, 298.15 K and 313.15 K: D2O H2O solvent isotope effects on the volumetric properties of aqueous 1,3-dimethyl-2-imidazolidinone between (278.15 and 318.15) K: Liquid-liquid equilibria of (heptane or hexane or cyclohexane + toluene + 1,3-dimethyl-2-imidazolidinone) ternary systems at T = 298.15 K: Crippen Method:

<https://www.doi.org/10.1016/j.jct.2006.09.017>
<http://link.springer.com/article/10.1007/BF02311772>
<https://www.doi.org/10.1016/j.jct.2009.06.019>
<https://www.doi.org/10.1016/j.jct.2009.11.009>
[https://www.chemeo.com/doc/models/crippen\\_log10ws](https://www.chemeo.com/doc/models/crippen_log10ws)
<http://pubs.acs.org/doi/abs/10.1021/ci990307i>

Enthalpy-related interaction parameters in H/D isotopically distinguishable aqueous solutions of carbon dioxide: Carbon Dioxide in Some Low Volatile Solvents and Their Thermodynamic Properties:

<https://www.doi.org/10.1016/j.tca.2011.05.019>
<https://www.doi.org/10.1021/acs.jced.5b00893>

# Legend

<b>affp:</b>	Proton affinity
<b>basg:</b>	Gas basicity
<b>hvapt:</b>	Enthalpy of vaporization at a given temperature
<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>rho:</b>	Liquid Density
<b>tbrp:</b>	Boiling point at reduced pressure

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