Urea, ethyl-

Other names:	1-Ethylurea
	N-Ethylurea
	Urea, 1-ethyl-
	ethylurea
	monoethylurea
	urea, monoethyl-
Inchi:	InChI=1S/C3H8N2O/c1-2-5-3(4)6/h2H2,1H3,(H3,4,5,6)
InchiKey:	RYECOJGRJDOGPP-UHFFFAOYSA-N
Formula:	C3H8N2O
SMILES:	CCNC(N)=O
Mol. weight [g/mol]:	88.11
CAS:	625-52-5

Physical Properties

Property code	Value	Unit	Source
chs	-1966.10 ± 0.61	kJ/mol	NIST Webbook
chs	-1976.00	kJ/mol	NIST Webbook
gf	1.30	kJ/mol	Joback Method
hf	-257.50 ± 1.00	kJ/mol	NIST Webbook
hfs	-340.00	kJ/mol	NIST Webbook
hfs	-357.76 ± 0.74	kJ/mol	NIST Webbook
hfus	15.42	kJ/mol	Joback Method
hvap	46.09	kJ/mol	Joback Method
log10ws	-0.45		Crippen Method
logp	-0.325		Crippen Method
mcvol	74.660	ml/mol	McGowan Method
pc	5304.68	kPa	Joback Method
tb	444.61	K	Joback Method
tc	645.43	K	Joback Method
tf	367.80 ± 0.50	K	NIST Webbook
tt	365.00 ± 0.00	K	NIST Webbook
tt	368.90 ± 0.50	K	NIST Webbook
vc	0.274	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	191.61	J/mol×K	645.43	Joback Method
cpg	158.94	J/mol×K	478.08	Joback Method
cpg	166.16	J/mol×K	511.55	Joback Method
cpg	173.02	J/mol×K	545.02	Joback Method
cpg	179.55	J/mol×K	578.49	Joback Method
cpg	185.74	J/mol×K	611.96	Joback Method
cpg	151.37	J/mol×K	444.61	Joback Method
hfust	13.90	kJ/mol	367.80	NIST Webbook
hfust	13.94	kJ/mol	367.80	NIST Webbook
hfust	9.60	kJ/mol	356.70	NIST Webbook
hfust	14.39	kJ/mol	365.10	NIST Webbook
hfust	14.39	kJ/mol	365.10	NIST Webbook
hfust	14.65	kJ/mol	368.90	NIST Webbook
hsubt	98.10 ± 1.10	kJ/mol	343.50	NIST Webbook
hsubt	97.80 ± 1.10	kJ/mol	343.50	NIST Webbook
hsubt	96.40 ± 1.10	kJ/mol	350.00	NIST Webbook
hsubt	100.30 ± 0.70	kJ/mol	337.00	NIST Webbook
hsubt	91.80 ± 1.20	kJ/mol	349.00	NIST Webbook
sfust	37.90	J/mol×K	367.80	NIST Webbook

Sources

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C625525&Units=SI

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

Densimetric and ultrasonic characterization of urea and its derivatives in water: https://www.doi.org/10.1016/j.jct.2012.11.007

Joback Method: https://en.wikipedia.org/wiki/Joback_method

Legend

chs: Standard solid enthalpy of combustion

cpg: Ideal gas heat capacity

gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
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
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume

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