(Dimethylamino)ethyl methacrylate

Other names:	2-(N,N-Dimethylamino)ethyl methacrylate
	2-(dimethylamino)ethyl methacrylate
	2-(dimethylamino)ethyl methylpropenoate
	2-Dimethylaminoethylester kyseliny methakrylove
	2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester
	2-methyl-2-propenoic acid 2-(dimethylamino)ethyl ester
	Ageflex FM-1
	DMAEMA
	Ethanol, 2-(dimethylamino)-, methacrylate
	N,N-(Dimethylamino)ethyl methacrylate
	N,N-Dimethylethanolamine methacrylate
	NSC 20959
	UN 2522
	USAF RH-3
	methacrylic acid, 2-(dimethylamino)ethyl ester
	methylpropenoic acid, 2-(dimethylamino)ethyl ester
	«beta»-(Dimethylamino)ethyl methacrylate
	«beta»-(N,N-Dimethylamino)ethyl methacrylate
Inchi:	InChI=1S/C8H15NO2/c1-7(2)8(10)11-6-5-9(3)4/h1,5-6H2,2-4H3
InchiKey:	JKNCOURZONDCGV-UHFFFAOYSA-N
Formula:	C8H15NO2
SMILES:	C=C(C)C(=O)OCCN(C)C
Mol. weight [g/mol]:	157.21
CAS:	2867-47-2

Physical Properties

Property code	Value	Unit	Source
gf	-27.37	kJ/mol	Joback Method
hf	-270.08	kJ/mol	Joback Method
hfus	19.69	kJ/mol	Joback Method
hvap	44.01	kJ/mol	Joback Method
log10ws	-0.46		Crippen Method
logp	0.667		Crippen Method
mcvol	136.700	ml/mol	McGowan Method
pc	2784.72	kPa	Joback Method
tb	460.20	K	NIST Webbook
tc	647.71	K	Joback Method

tf	237.70 ± 0.20	K	NIST Webbook
vc	0.507	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	342.12	J/mol×K	587.72	Joback Method
cpg	352.76	J/mol×K	617.71	Joback Method
cpg	294.36	J/mol×K	467.73	Joback Method
cpg	307.11	J/mol×K	497.73	Joback Method
cpg	319.31	J/mol×K	527.72	Joback Method
cpg	330.98	J/mol×K	557.72	Joback Method
cpg	362.89	J/mol×K	647.71	Joback Method
hfust	16.85	kJ/mol	237.70	NIST Webbook
hfust	16.85	kJ/mol	237.70	NIST Webbook
hvapt	48.80	kJ/mol	416.00	NIST Webbook
sfust	70.90	J/mol×K	237.70	NIST Webbook

Datasets

Mass density, kg/m3

Temperature, K - Liquid	Pressure, kPa - Liquid	Mass density, kg/m3 - Liquid
293.15	100.00	933.13
293.15	5000.00	936.87
293.15	10000.00	940.43
293.15	15000.00	943.83
293.15	20000.00	947.11
293.15	25000.00	950.3
293.15	30000.00	953.43
293.15	35000.00	956.52
303.15	100.00	923.03
303.15	5000.00	926.88
303.15	10000.00	930.61
303.15	15000.00	934.24
303.15	20000.00	937.79

303.15	25000.00	941.28
303.15	30000.00	944.74
303.15	35000.00	948.19
313.15	100.00	914.01
313.15	5000.00	917.99
313.15	10000.00	921.97
313.15	15000.00	925.87
313.15	20000.00	929.71
313.15	25000.00	933.48
313.15	30000.00	937.2
313.15	35000.00	940.87

Reference *https://www.doi.org/10.1021/acs.jced.8b00975*

Sources

Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2867472&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Effect of cosolvent on the phase behavior of binary and ternary mixture for the poly(2-dimethylaminoethyl methacrylate) in supercritical solvents:	https://www.doi.org/10.1016/j.fluid.2014.08.016
Density and Derived Properties of Binary Mixtures Containing {2-(Dimethylamino)ethyl Methacrylate + Alcohols} at Temperatures from T = (293.15 to 313.15) K and Pressures of Up to 35 MPa:	https://www.doi.org/10.1021/acs.jced.8b00975

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
hfust:	Enthalpy of fusion at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
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
pc:	Critical Pressure
rhol:	Liquid Density
sfust:	Entropy of fusion at a given temperature

tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume