Methacrylic acid, ethyl ester

Other names:	2-Methyl-2-propenoic acid ethyl ester
	2-Methylacrylic acid, ethyl ester
	2-Propenoic acid, 2-methyl-, ethyl ester
	2-methylpropenoic acid, ethyl ester
	EMA
	ETHYL 2-METHYL-2-PROPENOATE
	ETHYL METHYL ACRYLATE
	Ethyl 2-methacrylate
	Ethyl 2-methylacrylate
	Ethyl methacrylate
	Ethyl methylacrylate
	Ethyl «alpha»-methyl acrylate
	Ethyl Â«alphaÂ»-methyl acrylate
	Ethylester kyseliny methakrylove
	NSC 24152
	Rcra waste number U118
	Rhoplex AC-33
	UN 2277
	ethyl 2-methylpropenoate
Inchi:	InChI=1S/C6H10O2/c1-4-8-6(7)5(2)3/h2,4H2,1,3H3
InchiKey:	SUPCQIBBMFXVTL-UHFFFAOYSA-N
Formula:	C6H10O2
SMILES:	C=C(C)C(=O)OCC
Mol. weight [g/mol]:	114.14
CAS:	97-63-2

Physical Properties

Property code	Value	Unit	Source
gf	-154.99	kJ/mol	Joback Method
hf	-296.33	kJ/mol	Joback Method
hfus	11.49	kJ/mol	Joback Method
hvap	37.52	kJ/mol	Joback Method
log10ws	-1.05		Crippen Method
logp	1.126		Crippen Method
mcvol	98.540	ml/mol	McGowan Method
pc	3456.14	kPa	Joback Method
rinpol	775.00		NIST Webbook

rinpol	773.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	770.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	768.00		NIST Webbook
ripol	1043.00		NIST Webbook
ripol	1046.00		NIST Webbook
tb	391.70	K	NIST Webbook
tc	594.44	K	Joback Method
tf	213.82	K	Joback Method
vc	0.378	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	184.88	J/mol×K	409.53	Joback Method
cpg	194.21	J/mol×K	440.35	Joback Method
cpg	203.19	J/mol×K	471.17	Joback Method
cpg	211.85	J/mol×K	501.99	Joback Method
cpg	220.17	J/mol×K	532.81	Joback Method
cpg	228.17	J/mol×K	563.63	Joback Method
cpg	235.83	J/mol×K	594.44	Joback Method
hvapt	38.30	kJ/mol	337.50	NIST Webbook
rhol	912.30	kg/m3	293.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K

rhol	907.18	kg/m3	298.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K	
rhol	902.06	kg/m3	303.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K	
rhol	896.94	kg/m3	308.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K	
rhol	891.83	kg/m3	313.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K	
rhol	886.71	kg/m3	318.15	Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K	

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	303.20	K	2.40	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.43808e+01
Coeff. B	-3.40126e+03
Coeff. C	-4.32990e+01
Temperature range (K), min.	284.64
Temperature range (K), max.	418.33

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	6.23555e+01
Coeff. B	-6.60736e+03
Coeff. C	-6.93770e+00
Coeff. D	3.86286e-06
Temperature range (K), min.	223.15
Temperature range (K), max.	577.00

Sources

Joback Method:	https://en.wikipedia.org/wiki/Joback_method
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1176.mol
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1176
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Solubility of chlorobutane, ethyl methacrylate and trifluoroethyl acrylate in supercritical carbon dioxide:	https://www.doi.org/10.1016/j.fluid.2005.10.023
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl methacrylates at temperatures from 293.15 K to 318.15 K:	https://www.doi.org/10.1016/j.jct.2018.03.013

The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C97632&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Densities, speeds of sound and excess properties of (benzonitrile + methyl methacrylate, or + ethyl methacrylate, or + n-butyl methacrylate) binary mixtures at temperatures from 293.15 K to 318.15 K:	https://www.doi.org/10.1016/j.jct.2018.12.031

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
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
pvap:	Vapor pressure
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume