ETHYL METHACRYLATE

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 METHYL ACRYLATE
	Ethyl 2-methacrylate
	Ethyl 2-methyl-2-propenoate
	Ethyl 2-methylacrylate
	Ethyl methylacrylate
	Ethyl «alpha»-methyl acrylate
	Ethylester kyseliny methakrylove
	NSC 24152
	Rcra waste number U118
	Rhoplex AC-33
	UN 2277
	ethyl 2-methylpropenoate
	methacrylic acid, ethyl ester
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
af	0.4092		Cheméo Relay (1.0)
gf	-154.99	kJ/mol	Joback Method
hf	-378.13	kJ/mol	Cheméo Relay (1.0)
hfus	11.49	kJ/mol	Joback Method
hvap	40.11	kJ/mol	Cheméo Relay (1.0)
ie	9.76	eV	Cheméo Relay (1.0)
log10ws	-1.13		Cheméo Relay (1.0)
logp	1.126		Crippen Method
mcvol	98.540	ml/mol	McGowan Method
pc	3456.14	kPa	Joback Method

rinpol	814.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	768.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	770.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	775.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	773.00		NIST Webbook
ripol	1043.00		NIST Webbook
ripol	1046.00		NIST Webbook
tb	391.70	K	NIST Webbook
tc	572.00	K	DIPPR Project 851 - Thirty Years of Vapor-Liquid Critical Point Measurements and Experimental Technique Development
tf	222.50	K	Cheméo Relay (1.0)
vc	0.370	m3/kmol	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	228.17	J/mol×K	563.63	Joback Method
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	235.83	J/mol×K	594.44	Joback Method
hvapt	38.30	kJ/mol	337.50	NIST Webbook

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	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	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	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

Densities, ultrasonic speeds, excess and partial molar properties of binary mixtures of acetonitrile with some alkyl	https://www.doi.org/10.1016/j.jct.2018.03.013
DIPPR Project 857 - Thirty Years of Vapor-Liquid Critical Point	https://www.doi.org/10.1021/acs.jced.8b00298
KDB Vapor Pressure Data: Measurements at temperatures from 293.15 K to 313.15 K: Experimental Technique Development:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1176
Cheméo Relay (1.0):	
Cheméo Relay (1.0, beta):	
Densities, speeds of sound and excess properties of (benzonitrile + methyl methacrylate, or + ethyl methacrylate, or + 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
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1176.mol
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C97632&Units=SI
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
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

Legend

af:	Acentric Factor
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
ie:	Ionization energy
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