

# Methacrylic acid, ethyl ester

<b>Other names:</b>	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 Ä«alphaÄ»-methyl acrylate Ethylester kyseliny methakrylove NSC 24152 Rcra waste number U118 Rhoplex AC-33 UN 2277 ethyl 2-methylpropenoate
<b>Inchi:</b>	InChI=1S/C6H10O2/c1-4-8-6(7)5(2)3/h2,4H2,1,3H3
<b>InchiKey:</b>	SUPCQIBBMFXVTL-UHFFFAOYSA-N
<b>Formula:</b>	C6H10O2
<b>SMILES:</b>	C=C(C)C(=O)OCC
<b>Mol. weight [g/mol]:</b>	114.14
<b>CAS:</b>	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	814.00		NIST Webbook

rinpol	775.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	770.00		NIST Webbook
rinpol	814.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	756.00		NIST Webbook
rinpol	773.00		NIST Webbook
rinpol	768.00		NIST Webbook
rinpol	756.00		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	228.17	J/mol×K	563.63	Joback Method
cpg	220.17	J/mol×K	532.81	Joback Method
cpg	211.85	J/mol×K	501.99	Joback Method
cpg	203.19	J/mol×K	471.17	Joback Method
cpg	194.21	J/mol×K	440.35	Joback Method
cpg	235.83	J/mol×K	594.44	Joback Method
hvapt	38.30	kJ/mol	337.50	NIST Webbook
rholf	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	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	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	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	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	$\ln(P_{vp}) = A + B/(T + C)$
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	$\ln(P_{vp}) = A + B/T + C*\ln(T) + D*T^2$
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 alkanes with some alkyl esters at temperatures from 294.09 K to 415.05 K: butane, ethyl methacrylate and trifluoroethyl acrylate Joback Method

McGowan Method:

KDB:

NIST Webbook:

<https://www.doi.org/10.1016/j.jct.2018.03.013>

<https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure>

<https://www.doi.org/10.1016/j.fluid.2005.10.023>

[https://en.wikipedia.org/wiki/Joback\\_method](https://en.wikipedia.org/wiki/Joback_method)

<http://link.springer.com/article/10.1007/BF02311772>

<https://www.chemech.org/files/research/kdb/mol/mol1176.mol>

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C97632&Units=SI>

<b>Crippen Method:</b>	<a href="http://pubs.acs.org/doi/abs/10.1021/ci9903071">http://pubs.acs.org/doi/abs/10.1021/ci9903071</a>
<b>Densities, speeds of sound and excess properties of (benzonitrile + methyl methacrylate, or n-butyl methacrylate) binary mixtures at temperatures from 293.15 K to 318.15 K:</b>	<a href="https://www.doi.org/10.1016/j.jct.2018.12.031">https://www.doi.org/10.1016/j.jct.2018.12.031</a> <a href="https://www.chemeo.com/research/kdb/hcprop/showprop.php?cmpid=1176">https://www.chemeo.com/research/kdb/hcprop/showprop.php?cmpid=1176</a> <a href="https://www.chemeo.com/doc/models/crippen_log10ws">https://www.chemeo.com/doc/models/crippen_log10ws</a>

## Legend

<b>cpg:</b>	Ideal gas heat capacity
<b>gf:</b>	Standard Gibbs free energy of formation
<b>hf:</b>	Enthalpy of formation at standard conditions
<b>hfus:</b>	Enthalpy of fusion at standard conditions
<b>hvap:</b>	Enthalpy of vaporization at standard conditions
<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>pc:</b>	Critical Pressure
<b>pvap:</b>	Vapor pressure
<b>rhol:</b>	Liquid Density
<b>rinpol:</b>	Non-polar retention indices
<b>ripol:</b>	Polar retention indices
<b>tb:</b>	Normal Boiling Point Temperature
<b>tbrp:</b>	Boiling point at reduced pressure
<b>tc:</b>	Critical Temperature
<b>tf:</b>	Normal melting (fusion) point
<b>vc:</b>	Critical Volume

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