n-Butyl methacrylate

Other names:	2-Methyl-2-propenoic acid butyl ester
	2-Methyl-butylacrylaat
	2-Methyl-butylacrylat
	2-Methyl-butylacrylate
	2-Methylacrylic acid, butyl ester
	2-Propenoic acid, 2-methyl-, butyl ester
	Butil metacrilato
	Butyl 2-methacrylate
	Butyl 2-methyl-2-propenate
	Butyl 2-methyl-2-propenoate
	Butyl ester of methacrylic acid
	Butyl methacrylate
	Butylester kyseliny methakrylove
	Butylmethacrylaat
	Methacrylate de butyle
	Methacrylic acid n-butyl ester
	Methacrylic acid, butyl ester
	Methacrylsaeurebutylester
	NSC 20956
	butyl 2-methylpropenoate
Inchi:	InChI=1S/C8H14O2/c1-4-5-6-10-8(9)7(2)3/h2,4-6H2,1,3H3
InchiKey:	SOGAXMICEFXMKE-UHFFFAOYSA-N
Formula:	C8H14O2
SMILES:	C=C(C)C(=O)OCCCC
Mol. weight [g/mol]:	142.20
CAS:	97-88-1

Physical Properties

Property code	Value	Unit	Source
gf	-138.15	kJ/mol	Joback Method
hf	-337.61	kJ/mol	Joback Method
hfl	-413.10 ± 3.30	kJ/mol	NIST Webbook
hfus	16.67	kJ/mol	Joback Method
hvap	41.97	kJ/mol	Joback Method
log10ws	-1.89		Crippen Method
logp	1.906		Crippen Method
mcvol	126.720	ml/mol	McGowan Method

pc	2790.61	kPa	Joback Method
rinpol	964.00		NIST Webbook
rinpol	967.00		NIST Webbook
rinpol	989.00		NIST Webbook
rinpol	989.00		NIST Webbook
rinpol	967.00		NIST Webbook
rinpol	967.00		NIST Webbook
rinpol	962.00		NIST Webbook
rinpol	962.00		NIST Webbook
rinpol	960.00		NIST Webbook
rinpol	962.00		NIST Webbook
ripol	1220.00		NIST Webbook
ripol	1190.00		NIST Webbook
ripol	1190.00		NIST Webbook
ripol	1232.00		NIST Webbook
tb	434.70	K	NIST Webbook
tc	637.18	K	Joback Method
tf	196.80 ± 0.20	K	NIST Webbook
tf	196.80	K	NIST Webbook
tt	197.78 ± 0.01	K	NIST Webbook
vc	0.489	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	297.08	J/mol×K	546.24	Joback Method
cpg	286.17	J/mol×K	515.92	Joback Method
cpg	274.81	J/mol×K	485.61	Joback Method
cpg	327.16	J/mol×K	637.18	Joback Method
cpg	317.57	J/mol×K	606.87	Joback Method
cpg	307.54	J/mol×K	576.55	Joback Method
cpg	262.99	J/mol×K	455.29	Joback Method
cpl	273.80	J/mol×K	298.15	NIST Webbook
hfust	15.55	kJ/mol	197.80	NIST Webbook
hvapt	45.10	kJ/mol	390.50	NIST Webbook
hvapt	47.40	kJ/mol	358.00	NIST Webbook

rhol	876.35	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	881.07	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	890.44	kg/m3	298.15	Densities, isobaric thermal compressibilities and derived thermodynamic properties of the binary systems of cyclohexane with allyl methacrylate, butyl methacrylate, methacrylic acid, and vinyl acetate at t = (298.15 and 308.15)K	
rhol	880.86	kg/m3	308.15	Densities, isobaric thermal compressibilities and derived thermodynamic properties of the binary systems of cyclohexane with allyl methacrylate, butyl methacrylate, methacrylic acid, and vinyl acetate at t = (298.15 and 308.15)K	

rhol	885.78	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	890.48	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	895.19	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	876.19	kg/m3	313.15	Density, excess volume, and excess coefficient of thermal expansion of the binary systems of dimethyl carbonate with butyl methacrylate, allyl methacrylate, styrene, and vinyl acetate at T = (293.15, 303.15, and 313.15) K	

rhol	885.99	kg/m3	303.15	Density, excess volume, and excess coefficient of thermal expansion of the binary systems of dimethyl carbonate with butyl methacrylate, allyl methacrylate, styrene, and vinyl acetate at T = (293.15, 303.15, and 313.15) K	
rhol	895.23	kg/m3	293.15	Density, excess volume, and excess coefficient of thermal expansion of the binary systems of dimethyl carbonate with butyl methacrylate, allyl methacrylate, styrene, and vinyl acetate at T = (293.15, 303.15, and 313.15) K	
rhol	880.86	kg/m3	308.15	Densities and derived thermodynamic properties of the binary systems of 1,1-dimethylethyl methyl ether with allyl methacrylate, butyl methacrylate, methacrylic acid, and vinyl acetate at T = (298.15 and 308.15) K	
rhol	890.44	kg/m3	298.15	Densities and derived thermodynamic properties of the binary systems of 1,1-dimethylethyl methyl ether with allyl methacrylate, butyl methacrylate, methacrylic acid, and vinyl acetate at T = (298.15 and 308.15) K	

rhol	871.64	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

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.46216e+01
Coeff. B	-3.73997e+03
Coeff. C	-6.08250e+01
Temperature range (K), min.	321.74
Temperature range (K), max.	462.54

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	7.91517e+01
Coeff. B	-8.47577e+03
Coeff. C	-9.18304e+00
Coeff. D	3.81406e-06
Temperature range (K), min.	223.00
Temperature range (K), max.	616.00

Sources

The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
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
Density, excess volume, and excess coefficient of thermal expansion of the binary mixtures of dimethyl carbonate with butyl methacrylate, allyl methacrylate, styrene, and vinyl acetate at T = (293.15, 303.15, and 313.15) K:	https://www.doi.org/10.1016/j.jct.2008.06.017
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
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

Liquid-Liquid Equilibria of Water + 2-Butanol + (Methyl Methacrylate or Butyl Methacrylate or Isobutyl Methacrylate) at (288.2 and 318.2) K:	https://www.doi.org/10.1021/je7002572
Liquid-liquid equilibria of water + 1-butanol + methyl methacrylate, butyl methacrylate or isobutyl methacrylate at 288.15K and 318.15K:	https://www.doi.org/10.1016/j.fluid.2007.07.011
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C97881&Units=SI
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1185
Densities, isobaric thermal compressibilities and derived thermodynamic properties of the binary systems of cyclohexane with allyl methacrylate, butyl methacrylate, and isobutyl methacrylate:	https://www.doi.org/10.1016/j.tca.2005.06.007
Liquid-Liquid Equilibria for the Ternary Systems Water + 2-Propanol + Methyl Methacrylate, Butyl Methacrylate, and Isobutyl Methacrylate:	https://www.doi.org/10.1021/je700118q
Liquid-liquid equilibria for the ternary systems water + 2-propanol + methyl methacrylate, butyl methacrylate, and isobutyl methacrylate at T = (298.15 and 308.15)K:	https://www.doi.org/10.1016/j.fluid.2007.05.018
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Densities and derived thermodynamic properties of the binary systems of 1,1-dimethylethyl methyl ether with allyl methacrylate, butyl methacrylate, methacrylic acid, and vinyl acetate at T = (298.15 and 308.15) K:	https://www.doi.org/10.1016/j.jct.2004.11.012
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1185.mol
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l

Legend

cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase 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
pvap:	Vapor pressure
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume