Benzyl methacrylate

Other names:	2-Propenoic acid, 2-methyl-, phenylmethyl ester
	Methacrylic acid benzyl ester
Inchi:	InChI=1S/C11H12O2/c1-9(2)11(12)13-8-10-6-4-3-5-7-10/h3-7H,1,8H2,2H3
InchiKey:	AOJOEFVRHOZDFN-UHFFFAOYSA-N
Formula:	C11H12O2
SMILES:	C=C(C)C(=O)OCc1ccccc1
Mol. weight [g/mol]:	176.21
CAS:	2495-37-6

Physical Properties

Property code	Value	Unit	Source
gf	-0.48	kJ/mol	Joback Method
hf	-163.00	kJ/mol	Joback Method
hfus	18.48	kJ/mol	Joback Method
hvap	50.92	kJ/mol	Joback Method
log10ws	-2.74		Crippen Method
logp	2.306		Crippen Method
mcvol	145.230	ml/mol	McGowan Method
pc	2921.84	kPa	Joback Method
tb	550.61	K	Joback Method
tc	768.26	K	Joback Method
tf	296.59	K	Joback Method
vc	0.549	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	398.52	J/mol×K	768.26	Joback Method
cpg	388.50	J/mol×K	731.99	Joback Method
cpg	377.74	J/mol×K	695.71	Joback Method
cpg	366.21	J/mol×K	659.44	Joback Method
cpg	353.88	J/mol×K	623.16	Joback Method
cpg	340.73	J/mol×K	586.89	Joback Method
cpg	326.73	J/mol×K	550.61	Joback Method

cpl	269.90	J/mol×K	296.60	NIST Webbook
dvisc	0.0018850	Pa×s	308.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Cyclohexanone with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0015800	Pa×s	318.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Cyclohexanone with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0028710	Pa×s	288.15	Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 288.15 K and 318.15 K
dvisc	0.0023020	Pa×s	298.15	Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 288.15 K and 318.15 K

dvisc	0.0018850	Pa×s	308.15	Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 288.15 K and 318.15 K
dvisc	0.0015800	Pa×s	318.15	Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 288.15 K and 318.15 K
dvisc	0.0023020	Pa×s	298.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Cyclohexanone with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0018850	Pa×s	308.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Propylene Glycol Monomethyl Ether with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K

dvisc	0.0015800	Pa×s	318.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Propylene Glycol Monomethyl Ether with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0023020	Pa×s	298.15	Densities and Viscosities for Binary Mixtures of Ethyl Lactate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0018850	Pa×s	308.15	Densities and Viscosities for Binary Mixtures of Ethyl Lactate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
dvisc	0.0015800	Pa×s	318.15	Densities and Viscosities for Binary Mixtures of Ethyl Lactate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K

dvisc	0.0023020	Pa×s	298.15	Densities and Viscosities of Binary Mixtures of Propylene Glycol Monomethyl Ether Acetate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K
dvisc	0.0015800	Pa×s	318.15	Density and Viscosity for Ethyl 3-Ethoxypropionate + Methacrylic Acid, + Benzyl Methacrylate, and + 2-Hydroxyethyl Methacrylate
dvisc	0.0018850	Pa×s	308.15	Density and Viscosity for Ethyl 3-Ethoxypropionate + Methacrylic Acid, + Benzyl Methacrylate, and + 2-Hydroxyethyl Methacrylate
dvisc	0.0023020	Pa×s	298.15	Density and Viscosity for Ethyl 3-Ethoxypropionate + Methacrylic Acid, + Benzyl Methacrylate, and + 2-Hydroxyethyl Methacrylate
dvisc	0.0015800	Pa×s	318.15	Densities and Viscosities of Binary Mixtures of Propylene Glycol Monomethyl Ether Acetate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K

dvisc	0.0018850	Pa×s	308.15	Densities and Viscosities of Binary Mixtures of Propylene Glycol Monomethyl Ether Acetate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K
dvisc	0.0023020	Pa×s	298.15	Excess Molar Volumes and Viscosities for Binary Mixtures of Propylene Glycol Monomethyl Ether with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K
hvapt	70.50	kJ/mol	389.00	NIST Webbook

Sources

Densities and Viscosities for Binary Mixtures of Ethyl Lactate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K:	https://www.doi.org/10.1021/je600568w
Densities and Viscosities of Binary Mixtures of Propylene Glycol Monomethyl Ether Acetate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K:	https://www.doi.org/10.1021/je050196o
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2495376&Units=SI
Density and Viscosity for Ethyl 2-Ethoxypropionate + Methacrylic Acid, + Benzyl Methacrylate, and + 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K:	https://www.doi.org/10.1021/je050223a
Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate between 298.15 K and 318.15 K:	https://www.doi.org/10.1021/je0601255
Excess Molar Volumes and Viscosities for Binary Mixtures of Propylene Glycol Monomethyl Ether with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K:	https://www.doi.org/10.1021/je060288t
Excess Molar Volumes and Viscosities for Binary Mixtures of Cyclohexanone with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K:	https://www.doi.org/10.1021/je0502389
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Measurement of High-Pressure Phase Behavior for the Benzyl (Meth)Acrylate Monomer:	https://www.doi.org/10.1021/je7004616
In Supercritical Carbon Dioxide from (313.2 to 393.2) K and Pressures from (6 to 24) MPa:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
dvisc:	Dynamic viscosity
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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https://www.chemeo.com/cid/40-033-0/Benzyl-methacrylate.pdf

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