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	326.73	J/mol×K	550.61	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	398.52	J/mol×K	768.26	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 Propylene Glycol Monomethyl Ether 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 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 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 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	0.0018850	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	0.0023020	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	0.0015800	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

Property	Value	Units	Temperature (K)	Source
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
hvapt	70.50	kJ/mol	389.00	NIST Webbook

Sources

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:

NIST Webbook:

Crippen Method:

Density and Viscosity for Ethyl 3-Ethoxypropionate + Methacrylic Acid, + Benzyl Methacrylate, and + Hydroxyethyl Methacrylate:

Densities and Viscosities of Binary Mixtures of 1-Butanol with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate at (298.15, 308.15, and 318.15) K:

Excess Molar Enthalpies 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:

Densities and Viscosities for Binary Mixtures of Ethyl Lactate with Methacrylic Acid, Benzyl Methacrylate, and 2-Hydroxyethyl Methacrylate:

Densities 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:

Joback Method:

McGowan Method:

Measurement of High-Pressure Phase Behavior for the Benzyl (Meth)Acrylate in Supercritical Carbon Dioxide from (313.2 to 393.2) K and Pressures from (6 to 24) MPa:

https://www.doi.org/10.1021/je050196o

http://webbook.nist.gov/cgi/cbook.cgi?ID=C2495376&Units=SI

http://pubs.acs.org/doi/abs/10.1021/ci990307l

https://www.doi.org/10.1021/je050223a

https://www.doi.org/10.1021/je0601255

https://www.doi.org/10.1021/je060288t

https://www.chemeo.com/doc/models/crippen_log10ws

https://www.doi.org/10.1021/je600568w

https://www.doi.org/10.1021/je0502389

https://en.wikipedia.org/wiki/Joback_method

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

https://www.doi.org/10.1021/je7004616

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