

tert-Butyl acrylate

Other names:	1,1-dimethylethyl 2-propenoate 2-Propenoic acid, 1,1-dimethylethyl ester Acrylic acid, tert-butyl ester t-Butyl acrylate tert-butyl 2-propenoate
Inchi:	InChI=1S/C7H12O2/c1-5-6(8)9-7(2,3)4/h5H,1H2,2-4H3
InchiKey:	ISXSCDLOGDJUNJ-UHFFFAOYSA-N
Formula:	C7H12O2
SMILES:	C=CC(=O)OC(C)(C)C
Mol. weight [g/mol]:	128.17
CAS:	1663-39-4

Physical Properties

Property code	Value	Unit	Source
gf	-135.18	kJ/mol	Joback Method
hf	-315.93	kJ/mol	Joback Method
hfus	7.98	kJ/mol	Joback Method
hvap	38.37	kJ/mol	Joback Method
log10ws	-1.58		Crippen Method
logp	1.514		Crippen Method
mcvol	112.630	ml/mol	McGowan Method
pc	3145.56	kPa	Joback Method
tb	429.30	K	Joback Method
tc	621.15	K	Joback Method
tf	241.47	K	Joback Method
vc	0.421	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	287.01	J/mol×K	621.15	Joback Method
cpg	236.97	J/mol×K	461.28	Joback Method
cpg	248.07	J/mol×K	493.25	Joback Method
cpg	258.61	J/mol×K	525.23	Joback Method

cpg	268.60	J/mol×K	557.20	Joback Method
cpg	278.06	J/mol×K	589.18	Joback Method
cpg	225.27	J/mol×K	429.30	Joback Method
dvisc	0.0043009	Paxs	241.47	Joback Method
dvisc	0.0020951	Paxs	272.78	Joback Method
dvisc	0.0011835	Paxs	304.08	Joback Method
dvisc	0.0007438	Paxs	335.38	Joback Method
dvisc	0.0005060	Paxs	366.69	Joback Method
dvisc	0.0003658	Paxs	398.00	Joback Method
dvisc	0.0002772	Paxs	429.30	Joback Method
rhol	884.13	kg/m3	293.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K
rhol	879.66	kg/m3	298.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K
rhol	875.20	kg/m3	303.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K
rhol	870.74	kg/m3	308.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K
rhol	866.28	kg/m3	313.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K

rhol	861.82	kg/m3	318.15	Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 293.15 K to 318.15 K
rhol	884.13	kg/m3	293.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures
rhol	879.66	kg/m3	298.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures
rhol	875.20	kg/m3	303.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures
rhol	870.74	kg/m3	308.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures

rh _{ol}	866.28	kg/m ³	313.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures
rh _{ol}	861.82	kg/m ³	318.15	Temperature and concentration dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{\text{vap}}) = A + B/(T + C)$
Coeff. A	1.89075e+01
Coeff. B	-5.07474e+03
Coeff. C	-6.56080e+01
Temperature range (K), min.	338.15
Temperature range (K), max.	438.86

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C1663394&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Densities and volumetric properties of (acetonitrile + alkyl acrylate monomer) binary mixtures at temperatures from 298.15 K to 438.86 K. Dependence of volumetric properties of (tetrahydrofuran + methyl acrylate, or + ethyl acrylate, or + n-butyl acrylate, or + tert-butyl acrylate) binary mixtures:	https://www.doi.org/10.1016/j.jct.2016.08.026 https://www.doi.org/10.1016/j.jct.2016.10.042

Joback Method:

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

McGowan Method:

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

Legend

cpg:	Ideal gas 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
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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