

2-Propanol, 1,1'-(1-methyl-1,2-ethanediyl)bis(oxy)]bis-

Other names:

1,1'-(propylenedioxy)dipropan-2-ol
2-(2-(2-hydroxypropoxy)propoxy)propan-1-ol
2-Propanol, 1,1'-(propylenedioxy)di-
2-[2-(2-hydroxypropoxy)propoxy]-1-propanol
tripropylene glycol

Inchi:	InChI=1S/C9H20O4/c1-7(10)4-12-6-9(3)13-5-8(2)11/h7-11H,4-6H2,1-3H3
InchiKey:	LEQCJROTXBYLEU-UHFFFAOYSA-N
Formula:	C9H20O4
SMILES:	CC(O)COCC(C)OCC(C)O
Mol. weight [g/mol]:	192.25
CAS:	1638-16-0

Physical Properties

Property code	Value	Unit	Source
gf	-466.06	kJ/mol	Joback Method
hf	-813.83	kJ/mol	Joback Method
hfus	19.05	kJ/mol	Joback Method
hvap	72.64	kJ/mol	Joback Method
log10ws	-0.63		Crippen Method
logp	0.170		Crippen Method
mcvol	161.150	ml/mol	McGowan Method
pc	2746.90	kPa	Joback Method
tb	633.20	K	Joback Method
tc	797.93	K	Joback Method
tf	312.29	K	Joback Method
vc	0.596	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	444.44	J/mol×K	633.20	Joback Method
cpg	455.90	J/mol×K	660.66	Joback Method
cpg	466.89	J/mol×K	688.11	Joback Method
cpg	477.42	J/mol×K	715.57	Joback Method

cpg	487.49	J/mol×K	743.02	Joback Method
cpg	497.11	J/mol×K	770.48	Joback Method
cpg	506.27	J/mol×K	797.93	Joback Method
cpl	440.60	J/mol×K	298.00	NIST Webbook
dvisc	0.0425755	Paxs	312.29	Joback Method
dvisc	0.0041843	Paxs	365.78	Joback Method
dvisc	0.0007433	Paxs	419.26	Joback Method
dvisc	0.0001952	Paxs	472.75	Joback Method
dvisc	0.0000673	Paxs	526.23	Joback Method
dvisc	0.0000282	Paxs	579.72	Joback Method
dvisc	0.0000137	Paxs	633.20	Joback Method
pvap	0.22	kPa	378.15	Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems: Experimental data and regression
pvap	0.04	kPa	350.15	Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems: Experimental data and regression
pvap	0.10	kPa	364.15	Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems: Experimental data and regression
pvap	0.15	kPa	371.15	Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems: Experimental data and regression
pvap	0.06	kPa	357.15	Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems: Experimental data and regression

rhol	1017.50	kg/m3	293.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)
rhol	1009.50	kg/m3	303.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)
rhol	1001.50	kg/m3	313.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)
rhol	993.40	kg/m3	323.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)
rhol	985.20	kg/m3	333.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)

rh _{ol}	976.90	kg/m ³	343.15	Density and vapour pressure of mixed-solvent desiccant systems (propylene glycol or dipropylene glycol or tripropylene glycol + magnesium chloride + water)
tcondl	0.15	W/m×K	298.10	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K
tcondl	0.15	W/m×K	326.10	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K
tcondl	0.15	W/m×K	351.10	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K
tcondl	0.15	W/m×K	376.20	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K

tcondl	0.14	W/mxK	399.40	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K
tcondl	0.14	W/mxK	424.90	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K
tcondl	0.14	W/mxK	449.60	Density, Viscosity and Thermal Conductivity of Aqueous Solutions of Propylene Glycol, Dipropylene Glycol, and Tripropylene Glycol between 290 K and 460 K

Sources

Crippen Method:

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

Vapour-liquid equilibrium for tripropylene glycol + aromatic hydrocarbons binary systems:

<https://www.doi.org/10.1016/j.fluid.2016.05.032>

Density and vapour pressures of mixed solvent/desalinate systems:

<https://www.doi.org/10.1016/j.jct.2014.08.005>

Propylene glycol and propylene glycol

<https://www.doi.org/10.1021/je049960h>

Conductivity of aqueous mixtures of

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

Chloroform (CHCl₃), Dipropylene Glycol,

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

and Tripropylene Glycol between 290 K and 460 K.

McGowan Method:

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C1638160&Units=SI>

NIST Webbook:

Crippen Method:

<http://pubs.acs.org/doi/abs/10.1021/ci9903071>

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
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
tcondl:	Liquid thermal conductivity
tf:	Normal melting (fusion) point
vc:	Critical Volume

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