2-Propanol, 1-butoxy-

Other names:	1,2-Propylene glycol 1-monobutyl ether
	1-Butoxy-2-propanol
	1-butoxypropan-2-ol
	2-Hydroxy-3-butoxypropane
	NSC 2211
	Propasol solvent B
	Propylene glycol monobutyl ether
	Propylene glycol n-butyl ether
	n-Butoxypropanol
	propane, 1-butoxy-2-hydroxy-
	propyleneglycol, 1-butyl ether
Inchi:	InChI=1S/C7H16O2/c1-3-4-5-9-6-7(2)8/h7-8H,3-6H2,1-2H3
InchiKey:	RWNUSVWFHDHRCJ-UHFFFAOYSA-N
Formula:	C7H16O2
SMILES:	CCCCOCC(C)O
Mol. weight [g/mol]:	132.20
CAS:	5131-66-8

Physical Properties

Property code	Value	Unit	Source
gf	-236.20	kJ/mol	Joback Method
hf	-477.54	kJ/mol	Joback Method
hfus	15.64	kJ/mol	Joback Method
hvap	49.88	kJ/mol	Joback Method
log10ws	-1.22		Crippen Method
logp	1.184		Crippen Method
mcvol	121.230	ml/mol	McGowan Method
pc	3062.55	kPa	Joback Method
rinpol	947.00		NIST Webbook
rinpol	923.00		NIST Webbook
rinpol	941.00		NIST Webbook
rinpol	936.00		NIST Webbook
rinpol	948.00		NIST Webbook
rinpol	936.20		NIST Webbook
rinpol	936.70		NIST Webbook
rinpol	928.00		NIST Webbook
rinpol	941.00		NIST Webbook

rinpol	945.00		NIST Webbook
rinpol	936.20		NIST Webbook
ripol	1363.50		NIST Webbook
tb	443.35	K	NIST Webbook
tc	637.45	K	Joback Method
tf	236.70	K	Joback Method
vc	0.459	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	271.52	J/mol×K	473.72	Joback Method
cpg	282.22	J/mol×K	501.01	Joback Method
cpg	292.56	J/mol×K	528.30	Joback Method
cpg	302.54	J/mol×K	555.59	Joback Method
cpg	312.18	J/mol×K	582.87	Joback Method
cpg	321.47	J/mol×K	610.16	Joback Method
cpg	330.41	J/mol×K	637.45	Joback Method
cpl	307.60	J/mol×K	284.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	309.30	J/mol×K	287.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	310.20	J/mol×K	288.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	311.00	J/mol×K	290.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.

cpl	311.90	J/mol×K	291.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	312.70	J/mol×K	293.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	313.50	J/mol×K	294.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	314.40	J/mol×K	296.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	315.20	J/mol×K	297.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	315.50	J/mol×K	298.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	316.00	J/mol×K	299.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	316.80	J/mol×K	300.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	317.60	J/mol×K	302.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.

cpl	318.40	J/mol×K	303.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	319.20	J/mol×K	305.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	320.00	J/mol×K	306.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	320.70	J/mol×K	308.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	321.50	J/mol×K	309.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	322.30	J/mol×K	311.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	323.00	J/mol×K	312.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	323.80	J/mol×K	314.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.

cpl	324.50	J/mol×K	315.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	325.30	J/mol×K	317.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	326.00	J/mol×K	318.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	326.80	J/mol×K	320.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	327.50	J/mol×K	321.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	328.20	J/mol×K	323.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	328.90	J/mol×K	324.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	329.60	J/mol×K	326.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	330.30	J/mol×K	327.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.

cpl	331.00	J/mol×K	329.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	331.70	J/mol×K	330.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	332.40	J/mol×K	332.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	333.10	J/mol×K	333.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	333.80	J/mol×K	335.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	334.40	J/mol×K	336.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	335.10	J/mol×K	338.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	
cpl	308.50	J/mol×K	285.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.	

cpl	306.80	J/mol×K	282.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	305.90	J/mol×K	281.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	305.00	J/mol×K	279.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	304.10	J/mol×K	278.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	303.20	J/mol×K	276.65	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	335.50	J/mol×K	339.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
cpl	302.30	J/mol×K	275.15	Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.
dvisc	0.0030786	Pa×s	315.71	Joback Method
dvisc	0.0011285	Pa×s	355.21	Joback Method
dvisc	0.0005057	Pa×s	394.71	Joback Method
dvisc	0.0625947	Pa×s	236.70	Joback Method
dvisc	0.0001517	Pa×s	473.72	Joback Method
dvisc	0.0111917	Pa×s	276.20	Joback Method
dvisc	0.0002622	Pa×s	434.22	Joback Method

rhol	879.03	kg/m3	293.15	Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach
rhol	874.63	kg/m3	298.15	Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach
rhol	870.20	kg/m3	303.15	Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach
rhol	861.24	kg/m3	313.15	Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach
rhol	865.74	kg/m3	308.15	Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach

speedsl	1297.59	m/s	288.15	Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K	
speedsl	1243.85	m/s	303.15	Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K	
speedsl	1225.83	m/s	308.15	Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K	
speedsl	1207.02	m/s	313.15	Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2-propanol with 1-alcohols	
speedsl	1224.91	m/s	308.15	Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2-propanol with 1-alcohols	

speedsl	1242.94	m/s	303.15	Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2-propanol with 1-alcohols	
speedsl	1260.90	m/s	298.15	Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2-propanol with 1-alcohols	
speedsl	1278.98	m/s	293.15	Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2-propanol with 1-alcohols	
speedsl	1261.87	m/s	298.15	Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K	
speedsl	1279.95	m/s	293.15	Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K	

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.64361e+01
Coeff. B	-4.47407e+03
Coeff. C	-6.47630e+01
Temperature range (K), min.	341.82
Temperature range (K), max.	466.94

Sources

The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Densities and Speeds of Sound of Binary Liquid Mixtures of Some n-Alkoxypropanols with Methyl Acetate, Ethyl Acetate, and n-Butyl Acetate at T = (288.15, 293.15, 298.15, 303.15, and 308.15) K:	https://www.doi.org/10.1021/je300789a
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Heat capacity of dowanols within a temperature range of (275.15 to 339.15) K. Measurements and prediction.:	https://www.doi.org/10.1016/j.fluid.2016.09.002
Mutual Solubility and Lower Critical Solution Temperature for Water + Glycol Ether Systems.:	https://www.doi.org/10.1021/je049635u
Thermodynamic and spectral studies of molecular interactions in binary liquid mixtures of 1-butoxy-2- propanol with 1-alcohols:	https://www.doi.org/10.1021/acs.jced.5b00031
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Molecular interactions in binary mixtures of 1-butoxy-2-propanol with alcohols at different temperatures: A thermophysical and spectroscopic approach:	https://www.doi.org/10.1016/j.jct.2014.07.019
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C5131668&Units=SI

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

rinpol:	Non-polar retention indices
ripol:	Polar retention indices
speedsl:	Speed of sound in fluid
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume