Ethanol, 2-propoxy-

Other names:	2-Propoxyethanol
	2-Propyloxyethanol
	3-Oxa-1-hexanol
	Eastman EP
	Ektasolve EP
	Ethylene glycol monopropyl ether
	Ethylene glycol propyl ether
	Ethyleneglycol mono-n-propyl ether
	Monopropyl ether of ethylene glycol
	Propoxyethanol
	Propyl cellosolve
	Propyl glycol
Inchi:	InChI=1S/C5H12O2/c1-2-4-7-5-3-6/h6H,2-5H2,1H3
InchiKey:	YEYKMVJDLWJFOA-UHFFFAOYSA-N
Formula:	C5H12O2
SMILES:	CCCOCCO
Mol. weight [g/mol]:	104.15
CAS:	2807-30-9

Physical Properties

Property code	Value	Unit	Source
gf	-250.60	kJ/mol	Joback Method
hf	-430.98	kJ/mol	Joback Method
hfus	13.98	kJ/mol	Joback Method
hvap	52.13	kJ/mol	NIST Webbook
hvap	52.10 ± 0.10	kJ/mol	NIST Webbook
log10ws	-0.27		Crippen Method
logp	0.405		Crippen Method
mcvol	93.050	ml/mol	McGowan Method
pc	3650.00 ± 20.00	kPa	NIST Webbook
rhoc	286.41 ± 6.25	kg/m3	NIST Webbook
rinpol	816.00		NIST Webbook
rinpol	819.00		NIST Webbook
rinpol	809.00		NIST Webbook
rinpol	819.00		NIST Webbook
rinpol	802.00		NIST Webbook
rinpol	800.70		NIST Webbook

rinpol	790.00		NIST Webbook
rinpol	809.00		NIST Webbook
rinpol	802.00		NIST Webbook
rinpol	816.00		NIST Webbook
rinpol	800.70		NIST Webbook
ripol	1325.90		NIST Webbook
ripol	1325.90		NIST Webbook
tb	424.50 ± 0.60	K	NIST Webbook
tb	422.90	K	NIST Webbook
tc	615.20 ± 1.00	K	NIST Webbook
tc	614.60 ± 0.50	K	NIST Webbook
tf	229.16	K	Joback Method
vc	0.352	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	191.25	J/mol×K	428.40	Joback Method
cpg	199.44	J/mol×K	455.39	Joback Method
cpg	207.39	J/mol×K	482.39	Joback Method
cpg	215.11	J/mol×K	509.38	Joback Method
cpg	222.59	J/mol×K	536.37	Joback Method
cpg	229.83	J/mol×K	563.36	Joback Method
cpg	236.84	J/mol×K	590.36	Joback Method
cpl	241.60	J/mol×K	298.15	NIST Webbook
cpl	232.40	J/mol×K	277.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	231.60	J/mol×K	275.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)

cpl	234.10	J/mol×K	281.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	235.00	J/mol×K	283.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	235.80	J/mol×K	285.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	236.60	J/mol×K	287.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	237.50	J/mol×K	289.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	238.30	J/mol×K	291.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	239.20	J/mol×K	293.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	

cpl	240.10	J/mol×K	295.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	240.90	J/mol×K	297.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	241.40	J/mol×K	298.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	241.80	J/mol×K	299.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	242.70	J/mol×K	301.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	243.50	J/mol×K	303.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	244.40	J/mol×K	305.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)

cpl	245.30	J/mol×K	307.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	246.20	J/mol×K	309.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	247.10	J/mol×K	311.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	248.00	J/mol×K	313.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	248.90	J/mol×K	315.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	249.80	J/mol×K	317.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	250.70	J/mol×K	319.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	

cpl	251.60	J/mol×K	321.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	252.50	J/mol×K	323.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	253.40	J/mol×K	325.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	254.30	J/mol×K	327.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	255.20	J/mol×K	329.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	256.10	J/mol×K	331.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	
cpl	257.10	J/mol×K	333.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)	

cpl	258.00	J/mol×K	335.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	258.90	J/mol×K	337.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	259.90	J/mol×K	339.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
cpl	241.78	J/mol×K	298.15	NIST Webbook
cpl	244.30	J/mol×K	298.15	NIST Webbook
cpl	233.30	J/mol×K	279.15	Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers (CnEm)
dvisc	0.0464966	Pa×s	229.16	Joback Method
dvisc	0.0109215	Pa×s	262.37	Joback Method
dvisc	0.0035523	Pa×s	295.57	Joback Method
dvisc	0.0014496	Pa×s	328.78	Joback Method
dvisc	0.0006973	Pa×s	361.99	Joback Method
dvisc	0.0003793	Pa×s	395.19	Joback Method
dvisc	0.0002268	Pa×s	428.40	Joback Method
hvapt	46.30	kJ/mol	386.00	NIST Webbook
hvapt	41.40	kJ/mol	422.90	NIST Webbook
pvap	100.00	kPa	422.75	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa

pvap	0.87	kPa	313.15	Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems	
pvap	0.89	kPa	313.15	Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems	
pvap	1.59	kPa	323.15	Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems	
pvap	1.61	kPa	323.15	Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems	
pvap	60.00	kPa	406.15	Isobaric Vapor Liquid Equilibria for the 1-Propanol + Ethylene Glycol Monopropyl Ether and 1-Butanol + Ethylene Glycol Monopropyl Ether Systems	

pvap	80.00	kPa	415.30	Isobaric Vapor Liquid Equilibria for the 1-Propanol + Ethylene Glycol Monopropyl Ether and 1-Butanol + Ethylene Glycol Monopropyl Ether Systems
pvap	100.00	kPa	422.75	Isobaric Vapor Liquid Equilibria for the 1-Propanol + Ethylene Glycol Monopropyl Ether and 1-Butanol + Ethylene Glycol Monopropyl Ether Systems
pvap	0.45	kPa	303.15	Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems
pvap	60.00	kPa	406.15	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa
pvap	80.00	kPa	415.28	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa

pvap	80.00	kPa	415.30	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa
pvap	100.00	kPa	422.73	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa
pvap	60.00	kPa	406.13	Isobaric Vapor Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa
rhol	907.23	kg/m3	298.15	Thermodynamic properties and sPC-SAFT modeling of 2-ethoxyethanol, 2-propoxyethanol and 2-butoxyethanol from T = (293.15-413.15) K and pressure up to 30 MPa
rhol	907.88	kg/m3	298.15	Modified Method for Measuring the Solubility of Pharmaceutical Compounds in Organic Solvents by Visual Camera

rhol	899.50	kg/m3	308.15	Study of thermophysical properties of the binary mixtures of ionic liquid 1-ethyl-3-methylimidazolium ethylsulfate and 2-propoxyethanol from T = (298.15 to 328.15) K at atmospheric pressure
rhol	890.56	kg/m3	318.15	Study of thermophysical properties of the binary mixtures of ionic liquid 1-ethyl-3-methylimidazolium ethylsulfate and 2-propoxyethanol from T = (298.15 to 328.15) K at atmospheric pressure
rhol	881.49	kg/m3	328.15	Study of thermophysical properties of the binary mixtures of ionic liquid 1-ethyl-3-methylimidazolium ethylsulfate and 2-propoxyethanol from T = (298.15 to 328.15) K at atmospheric pressure
rhol	908.00	kg/m3	298.15	An experimental investigation of molecular interactions between [Emim][triflate] ionic liquid & 2-alkoxyethanols and theoretical comparison by PFP theory
rhol	903.00	kg/m3	303.15	An experimental investigation of molecular interactions between [Emim][triflate] ionic liquid & 2-alkoxyethanols and theoretical comparison by PFP theory

rhol	899.00	kg/m3	308.15	An experimental investigation of molecular interactions between [Emim][triflate] ionic liquid & 2-alkoxyethanols and theoretical comparison by PFP theory
rhol	895.00	kg/m3	313.15	An experimental investigation of molecular interactions between [Emim][triflate] ionic liquid & 2-alkoxyethanols and theoretical comparison by PFP theory
rhol	890.00	kg/m3	318.15	An experimental investigation of molecular interactions between [Emim][triflate] ionic liquid & 2-alkoxyethanols and theoretical comparison by PFP theory
rhol	908.31	kg/m3	298.15	Study of thermophysical properties of the binary mixtures of ionic liquid 1-ethyl-3-methylimidazolium ethylsulfate and 2-propoxyethanol from T = (298.15 to 328.15) K at atmospheric pressure

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	423.20	K	99.10	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.64940e+01
Coeff. B	-4.31962e+03
Coeff. C	-5.91610e+01
Temperature range (K), min.	325.70
Temperature range (K), max.	445.45

Sources

Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Isobaric vapor-liquid equilibria for the n-heptane + ethylene glycol monopropyl ether and n-octane + ethylene glycol monopropyl ether systems:	https://www.doi.org/10.1016/j.fluid.2010.08.002
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Measurement and Prediction of Molar Heat Capacities of Liquid Polyoxyethylene Glycol Monoalkyl Ethers:	https://www.doi.org/10.1021/acs.jced.5b00051
Isobaric Vapor-Liquid Equilibria for the 1-Propanol + Ethylene Glycol Monopropyl Ether and 1-Butanol + Ethylene Glycol Monopropyl Ether Systems:	https://www.doi.org/10.1021/je2008236
Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems:	https://www.doi.org/10.1016/j.jct.2008.07.024
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Study of thermophysical properties of the binary mixtures of ionic liquid 1-ethyl-3-methylimidazolium ethylsulfate and 2-propoxyethanol from T = (298.15 to 328.15) K at atmospheric pressure:	https://www.doi.org/10.1016/j.jct.2016.03.028
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Solid-Liquid Equilibrium Solubility, Thermodynamic Properties, and Molecular Simulation of [EMIM][DMP] Ionic Liquid & 2-Propoxyethanol Binary Mixtures:	https://www.doi.org/10.1021/acs.jced.9b00362
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Study of molecular interactions of binary mixtures DEC with alkoxyalkanols at various temperatures:	https://www.doi.org/10.1016/j.jct.2016.11.002
An experimental investigation of molecular interactions between 2-alkoxyethanols and theoretical comparison by ITF theory:	https://www.doi.org/10.1016/j.jct.2019.05.023
Solubility Determination and Modeling of EGCG Peracetate in 12 Pure Solvents at Different Temperatures:	https://www.doi.org/10.1021/acs.jced.9b00428
Solubilities of temperatures from 278.15 to 318.15 K, Thermodynamic Properties, and Molecular Simulation of 4′,5,7-Triacetoxyflavanone in Fourteen Organic Solvents at Different Temperatures:	https://www.doi.org/10.1021/acs.jced.6b00929
sPC-SAFT modeling of 2-methoxyethanol, 2-propoxyethanol and 2-butoxyethanol from T (293.15 to 413.15) K and pressure up to 30 MPa:	https://www.doi.org/10.1016/j.fluid.2017.10.027
Method for Measuring the Solubility of Pharmaceutical Compounds in Dependence of Temperature and Pressure:	https://www.doi.org/10.1021/acs.jced.5b00122
Phase diagrams for water + sodium chloride + ethylene glycol monopropyl ether + 2-propanol systems:	https://www.doi.org/10.1016/j.fluid.2015.04.004
Isobaric Vapor-Liquid Equilibria for the 2-Propanol + Ethylene Glycol Monopropyl Ether and 2-Butanol + Ethylene Glycol Monopropyl Ether Systems at 60 kPa, 80 kPa, and 100 kPa:	https://www.doi.org/10.1021/je3002255
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2807309&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
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
pvap:	Vapor pressure
rhoc:	Critical density
rhol:	Liquid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume