Propyl vinyl ether

Other names:	1-(ethenyloxy)propane
	propoxyethylene
Inchi:	InChI=1S/C5H10O/c1-3-5-6-4-2/h4H,2-3,5H2,1H3
InchiKey:	OVGRCEFMXPHEBL-UHFFFAOYSA-N
Formula:	C5H10O
SMILES:	C=COCCC
Mol. weight [g/mol]:	86.13
CAS:	764-47-6

Physical Properties

Property code	Value	Unit	Source
af	0.3519		Cheméo Relay (1.0)
gf	-25.94	kJ/mol	Joback Method
hf	-168.25	kJ/mol	Cheméo Relay (1.0)
hfus	8.61	kJ/mol	Joback Method
hvap	26.62	kJ/mol	Cheméo Relay (1.0)
ie	8.85	eV	Cheméo Relay (1.0)
log10ws	-1.33		Cheméo Relay (1.0)
logp	1.556		Crippen Method
mcvol	82.880	ml/mol	McGowan Method
pc	3572.80	kPa	Joback Method
tb	338.48	K	Cheméo Relay (1.0)
tc	490.95	K	Cheméo Relay (1.0)
tf	157.15	K	Cheméo Relay (1.0)
vc	0.306	m3/kmol	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	166.08	J/mol×K	444.69	Joback Method
cpg	180.14	J/mol×K	500.59	Joback Method
cpg	158.71	J/mol×K	416.74	Joback Method
cpg	173.22	J/mol×K	472.64	Joback Method
cpg	135.21	J/mol×K	332.90	Joback Method

cpg	143.28	J/mol×K	360.85	Joback Method
cpg	151.11	J/mol×K	388.80	Joback Method
dvisc	0.0024826	Pa×s	166.58	Joback Method
dvisc	0.0012110	Pa×s	194.30	Joback Method
dvisc	0.0007067	Pa×s	222.02	Joback Method
dvisc	0.0004648	Pa×s	249.74	Joback Method
dvisc	0.0003324	Pa×s	277.46	Joback Method
dvisc	0.0002526	Pa×s	305.18	Joback Method
dvisc	0.0002010	Pa×s	332.90	Joback Method
rfi	1.39793		298.15	Isothermal vapor liquid equilibrium at 323.15K and excess molar volumes and refractive indices at 298.15K for the ternary system propyl vinyl ether + 1-propanol + benzene and its binary sub-systems
rhol	762.96	kg/m3	298.15	Liquid Liquid Equilibrium for Ternary Systems of Propyl Vinyl Ether + C3 or C4 Alcohols + Water at 298.15 K and Excess Molar Enthalpies for Ternary and Constituent Binary Systems of Propyl Vinyl Ether + Ethanol + Isooctane at 303.15 K
rhol	762.98	kg/m3	298.15	Binary LLE for Propyl Vinyl Ether (PVE) + Water, Ternary LLE for PVE + Methanol or Ethanol + Water at 298.15 K, and VE and centsR at 293.15 K for the Mixture of PVE + Ethanol + 2,2,4-Trimethylpentane
rhol	768.97	kg/m3	293.15	Isothermal Binary and Ternary VLE for the Mixtures of Propyl Vinyl Ether + Ethanol + Isooctane at 323.15 K and VE at 293.15 K

rhol	762.69	kg/m3	298.15	Binary and Ternary Vapor-Liquid Equilibrium at 323.15 K and Excess Molar Volumes at 298.15 K for the Mixtures of Propyl Vinyl Ether + 1-Propanol + Toluene

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.49761e+01
Coeff. B	-3.17806e+03
Coeff. C	-3.51560e+01
Temperature range (K), min.	251.52
Temperature range (K), max.	363.99

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Cheméo Relay (1.0, beta):	
Isothermal vapor liquid equilibrium at 323.15K and excess molar volumes and refractive indices at 298.15K for the ternary system propyl vinyl ether + 1-propanol + benzene and its binary sub-systems:	https://www.doi.org/10.1016/j.fluid.2008.09.005
Binary and Ternary Vapor-Liquid Equilibrium at 323.15 K and Excess Molar Volumes at 298.15 K for the Mixtures of Propyl Vinyl Ether + 1-Propanol + Toluene:	https://www.doi.org/10.1021/je800972b
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Binary LLE for Propyl Vinyl Ether (PVE) + Water, Ternary LLE for PVE + Methanol or Ethanol + Water at 298.15 K and VE and GE at 293.15 K for the Mixture of PVE + Ethanol + Isooctane at 303.15 K:	https://www.doi.org/10.1021/je7003512
Liquid-Liquid Equilibrium for Ternary Systems of Propyl Vinyl Ether + C3 or C4 Organic Compounds + Water and Excess Molar Volumes for Ternary and Constituent Binary Systems of Propyl Vinyl Ether + Ethanol + Isooctane at 303.15 K:	https://www.doi.org/10.1021/je7005743
Henry's Law Constants of Organic Compounds in Water and Octane at T = 298.15 K Predicted by COSMO-RS:	https://www.doi.org/10.1021/je900711h
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Isothermal Binary and Ternary VLE for the Mixtures of Propyl Vinyl Ether + Ethanol + Isooctane at 323.15 K and VE at 293.15 K:	https://www.doi.org/10.1021/je700094y
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Cheméo Relay (1.0):	
Isothermal vapor liquid equilibrium at 303.15K and excess molar volumes at 298.15 K for the ternary system of propyl vinyl ether + 1-propanol + 2,2,4-trimethyl-pentane and its binary sub-systems:	https://www.doi.org/10.1016/j.fluid.2007.07.002

Legend

af:	Acentric Factor
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
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rfi:	Refractive Index
rhol:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume