Ethanol-d1

Other names: ethanol-1-d
Inchi: InChI=1S/C2H6O/c1-2-3/h3H,2H2,1H3/i1D
InchiKey: LFQSCWFLJHTTHZ-MICDWDOJSA-N
Formula: C2H5DO
SMILES: CCO
Mol. weight [g/mol]: 47.07
CAS: 1624-36-8

Physical Properties

Property code	Value	Unit	Source
gf	-170.86	kJ/mol	Joback Method
hf	-236.84	kJ/mol	Joback Method
hfus	5.02	kJ/mol	Joback Method
hvap	36.73	kJ/mol	Joback Method
log10ws	0.08		Crippen Method
logp	-0.001		Crippen Method
mcvol	44.910	ml/mol	McGowan Method
pc	5756.64	kPa	Joback Method
tb	337.34	K	Joback Method
tc	499.11	K	Joback Method
tf	173.12	K	Joback Method
vc	0.167	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	83.09	J/mol×K	418.23	Joback Method
cpg	75.12	J/mol×K	364.30	Joback Method
cpg	70.94	J/mol×K	337.34	Joback Method
cpg	86.89	J/mol×K	445.19	Joback Method
cpg	90.56	J/mol×K	472.15	Joback Method
cpg	94.11	J/mol×K	499.11	Joback Method
cpg	79.17	J/mol×K	391.26	Joback Method
cpl	102.09	J/mol×K	250.00	NIST Webbook

cpl	116.23	J/mol×K	298.00	NIST Webbook
dvisc	0.0004219	Pa×s	337.34	Joback Method
dvisc	0.0015078	Pa×s	282.60	Joback Method
dvisc	0.0034990	Pa×s	255.23	Joback Method
dvisc	0.0099391	Pa×s	227.86	Joback Method
dvisc	0.0375449	Pa×s	200.49	Joback Method
dvisc	0.0007539	Pa×s	309.97	Joback Method
dvisc	0.2159052	Pa×s	173.12	Joback Method
rhol	783.63	kg/m3	318.15	Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K
rhol	801.57	kg/m3	298.15	Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K
rhol	810.32	kg/m3	288.15	Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K
rhol	818.95	kg/m3	278.15	Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K
rhol	792.68	kg/m3	308.15	Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Volumetric properties of dilute solutions of water in ethanol and water-d2 in ethanol-d1 between T = (278.15 and 318.15) K:	https://www.doi.org/10.1016/j.jct.2011.10.009
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C1624368&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
rhol:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume