

Ethane, 1,2-diethoxy-

Other names:	1,2-DIETHOXYETHANE 1,2-ethanediol, diethyl ether 2-Ethoxyethyl ethyl ether 3,6-Dioxaoctane Diethyl cellosolve Diethylether ethylenglykolu ETHYL GLYME Ethylene glycol diethyl ether Glyme-1 Hisolve EME UN 1153 ethylene glycol, diethyl ether
Inchi:	InChI=1S/C6H14O2/c1-3-7-5-6-8-4-2/h3-6H2,1-2H3
InchiKey:	LZDKZUFMNSQCJ-UHFFFAOYSA-N
Formula:	C6H14O2
SMILES:	CCOCCOCC
Mol. weight [g/mol]:	118.17
CAS:	629-14-1

Physical Properties

Property code	Value	Unit	Source
chl	-3910.43 ± 0.92	kJ/mol	NIST Webbook
chl	-3908.40 ± 0.60	kJ/mol	NIST Webbook
gf	-210.36	kJ/mol	Joback Method
hf	-410.30	kJ/mol	NIST Webbook
hf	-408.23 ± 0.97	kJ/mol	NIST Webbook
hfl	-453.50 ± 0.60	kJ/mol	NIST Webbook
hfl	-451.43 ± 0.93	kJ/mol	NIST Webbook
hfus	13.67	kJ/mol	Joback Method
hvap	43.20 ± 0.10	kJ/mol	NIST Webbook
hvap	43.27	kJ/mol	NIST Webbook
hvap	43.20 ± 0.12	kJ/mol	NIST Webbook
hvap	43.20	kJ/mol	NIST Webbook
hvap	43.20 ± 0.04	kJ/mol	NIST Webbook
log10ws	-0.77		Estimated Solubility Method

log10ws	-0.77		Aqueous Solubility Prediction Method
logp	1.059		Crippen Method
mcvol	107.140	ml/mol	McGowan Method
pc	2992.59	kPa	Joback Method
rinpol	773.00		NIST Webbook
rinpol	787.00		NIST Webbook
rinpol	787.00		NIST Webbook
rinpol	787.00		NIST Webbook
rinpol	771.00		NIST Webbook
rinpol	754.40		NIST Webbook
rinpol	744.80		NIST Webbook
rinpol	754.40		NIST Webbook
tb	381.52	K	Joback Method
tc	546.82	K	Joback Method
tf	199.15	K	NIST Webbook
vc	0.407	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	204.67	J/mol×K	381.52	Joback Method
cpg	214.60	J/mol×K	409.07	Joback Method
cpg	224.32	J/mol×K	436.62	Joback Method
cpg	233.82	J/mol×K	464.17	Joback Method
cpg	243.09	J/mol×K	491.72	Joback Method
cpg	252.13	J/mol×K	519.27	Joback Method
cpg	260.92	J/mol×K	546.82	Joback Method
cpl	259.40	J/mol×K	298.15	NIST Webbook
cpl	255.30	J/mol×K	293.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	257.50	J/mol×K	298.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model

cpl	257.90	J/mol×K	303.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	258.70	J/mol×K	308.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	259.50	J/mol×K	313.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	261.20	J/mol×K	318.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	262.90	J/mol×K	323.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	264.59	J/mol×K	312.57	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	265.54	J/mol×K	322.47	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers

cpl	268.37	J/mol×K	332.37	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	270.86	J/mol×K	342.27	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	273.57	J/mol×K	352.18	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	254.50	J/mol×K	288.15	Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 308.15K Application of an extended cell model
cpl	280.31	J/mol×K	371.98	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	283.03	J/mol×K	381.88	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	286.22	J/mol×K	391.78	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	289.88	J/mol×K	401.68	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers

cpl	293.43	J/mol×K	411.58	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	296.97	J/mol×K	421.48	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
cpl	261.08	J/mol×K	298.15	NIST Webbook
cpl	276.17	J/mol×K	362.08	Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene glycol Dialkyl Ethers
dvisc	0.0027699	Paxs	201.84	Joback Method
dvisc	0.0013528	Paxs	231.79	Joback Method
dvisc	0.0007784	Paxs	261.73	Joback Method
dvisc	0.0005017	Paxs	291.68	Joback Method
dvisc	0.0003510	Paxs	321.63	Joback Method
dvisc	0.0002609	Paxs	351.57	Joback Method
dvisc	0.0002032	Paxs	381.52	Joback Method
hvapt	36.28	kJ/mol	392.50	NIST Webbook
hvapt	37.90	kJ/mol	316.00	NIST Webbook
hvapt	39.30	kJ/mol	360.50	NIST Webbook
rhol	826.22	kg/m3	308.50	Excess Molar Enthalpies and Hydrogen Bonding in Binary Mixtures Containing Ethers and Benzyl Alcohol at 308.15 K and Atmospheric Pressure

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{\text{vp}}) = A + B/(T + C)$
Coeff. A	1.63266e+01
Coeff. B	-4.01967e+03

Coeff. C	-5.06820e+01
Temperature range (K), min.	301.30
Temperature range (K), max.	415.60

Information	Value
Property code	pvap
Equation	$\ln(P_{\text{vp}}) = A + B/T + C*\ln(T) + D*T^2$
Coeff. A	1.39789e+02
Coeff. B	-1.01431e+04
Coeff. C	-1.86755e+01
Coeff. D	1.41020e-05
Temperature range (K), min.	339.15
Temperature range (K), max.	383.15

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C629141&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
Aqueous Solubility Prediction Method:	http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDataset002.xlsx
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1018.mol
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1018
Liquid Densities, Kinematic Viscosities, and Heat Capacities of Some Alkylene Glycophenyl Ethers	https://www.doi.org/10.1021/je025606c
Thermophysical properties of dimethyl sulfoxide + cyclic and linear ethers at 298.15 K	https://www.doi.org/10.1016/j.tca.2006.05.010
Estimated Solubility Method	http://pubs.acs.org/doi/suppl/10.1021/ci034243x/suppl_file/ci034243xsi20040112_053635.txt
Excess Molar Enthalpies and Hydrogen Bonding in Binary Mixtures Containing Salicylic Acid and Acetic Acid at 298.15 K	https://www.doi.org/10.1021/je0504212
Joback Method	https://www.doi.org/10.1021/je9001976
1,2-Diethoxyethane, Cyclohexanone, Acetophenone:	https://en.wikipedia.org/wiki/Joback_method

Legend

chl:	Standard liquid enthalpy of combustion
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
hfl:	Liquid phase 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
rhol:	Liquid Density
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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