Ethane, 1,1,1-trimethoxy-

Other names:	Orthoacetic acid, trimethyl ester
	Methyl orthoacetate
	Trimethyl orthoacetate
	1,1,1-Trimethoxyethane
	CH3C(OCH3)3
Inchi:	InChI=1S/C5H12O3/c1-5(6-2,7-3)8-4/h1-4H3
InchiKey:	HDPNBNXLBDFELL-UHFFFAOYSA-N
Formula:	C5H12O3
SMILES:	COC(C)(OC)OC
Mol. weight [g/mol]:	120.15
CAS:	1445-45-0

Physical Properties

Property code	Value	Unit	Source
gf	-320.94	kJ/mol	Joback Method
hf	-572.70 ± 2.30	kJ/mol	NIST Webbook
hf	-570.86 ± 0.87	kJ/mol	NIST Webbook
hfl	-610.00 ± 0.45	kJ/mol	NIST Webbook
hfl	-612.00 ± 1.10	kJ/mol	NIST Webbook
hfus	4.86	kJ/mol	Joback Method
hvap	39.30	kJ/mol	NIST Webbook
hvap	39.10	kJ/mol	NIST Webbook
hvap	39.20	kJ/mol	NIST Webbook
hvap	39.20 ± 0.75	kJ/mol	NIST Webbook
ie	9.65	eV	NIST Webbook
log10ws	-0.28		Crippen Method
logp	0.599		Crippen Method
mcvol	98.920	ml/mol	McGowan Method
pc	3341.24	kPa	Joback Method
tb	381.20	K	NIST Webbook
tc	555.11	K	Joback Method
tf	215.22	K	Joback Method
vc	0.358	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	192.40	J/mol×K	377.83	Joback Method
cpg	202.04	J/mol×K	407.38	Joback Method
cpg	211.43	J/mol×K	436.92	Joback Method
cpg	220.57	J/mol×K	466.47	Joback Method
cpg	229.46	J/mol×K	496.01	Joback Method
cpg	238.07	J/mol×K	525.56	Joback Method
cpg	246.41	J/mol×K	555.11	Joback Method
dvisc	0.0033768	Pa×s	215.22	Joback Method
dvisc	0.0016415	Pa×s	242.32	Joback Method
dvisc	0.0009226	Pa×s	269.42	Joback Method
dvisc	0.0005761	Pa×s	296.52	Joback Method
dvisc	0.0003893	Pa×s	323.63	Joback Method
dvisc	0.0002795	Pa×s	350.73	Joback Method
dvisc	0.0002104	Pa×s	377.83	Joback Method

Sources

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws
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=C1445450&Units=SI

Legend

cpg: Ideal gas 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
ie: Ionization energy

log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume