1,1,2,2-Ethanetetracarboxylic acid, tetraethyl ester

Other names: Tetraethyl 1,1,2,2-ethanetetracarboxylate
Tetrakis(ethoxycarbonyl)ethane
1,1,2,2-Tetracarbethoxyethane
Ethane-1,1,2,2-tetracarboxylic acid, tetraethyl ester
tetraethyl ethane-1,1,2,2-tetracarboxylate

Inchi: InChI=1S/C14H22O8/c1-5-19-11(15)9(12(16)20-6-2)10(13(17)21-7-3)14(18)22-8-4/h9-10

InchiKey: UQSBVZIXVVORQC-UHFFFAOYSA-N

Formula: C14H22O8

SMILES: CCOC(=O)C(C(=O)OCC)C(C(=O)OCC)C(=O)OCC

Mol. weight [g/mol]: 318.32

CAS: 632-56-4

Physical Properties

Property code	Value	Unit	Source
gf	-873.56	kJ/mol	Joback Method
hf	-1322.05	kJ/mol	Joback Method
hfus	36.12	kJ/mol	Joback Method
hvap	82.61	kJ/mol	Joback Method
log10ws	-0.65		Crippen Method
logp	0.471		Crippen Method
mcvol	237.880	ml/mol	McGowan Method
pc	1792.42	kPa	Joback Method
tb	824.00	K	Joback Method
tc	1020.93	K	Joback Method
tf	506.18	K	Joback Method
vc	0.903	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	716.95	J/mol×K	824.00	Joback Method
cpg	769.98	J/mol×K	988.11	Joback Method
cpg	761.55	J/mol×K	955.29	Joback Method
cpg	752.01	J/mol×K	922.47	Joback Method

cpg	741.38	J/mol×K	889.64	Joback Method
cpg	729.69	J/mol×K	856.82	Joback Method
cpg	777.28	J/mol×K	1020.93	Joback Method
dvisc	0.0000541	Pa×s	824.00	Joback Method
dvisc	0.0000705	Pa×s	771.03	Joback Method
dvisc	0.0000955	Pa×s	718.06	Joback Method
dvisc	0.0001359	Pa×s	665.09	Joback Method
dvisc	0.0002055	Pa×s	612.12	Joback Method
dvisc	0.0003360	Pa×s	559.15	Joback Method
dvisc	0.0006090	Pa×s	506.18	Joback Method

Sources

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=C632564&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

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
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