Glyoxal

Other names:	(CHO)2
	1,2-Ethanedione
	Aerotex glyoxal 40
	Biformal
	Biformyl
	Diformal
	Diformyl
	Ethandial
	Ethane-1,2-dione
	Ethanedial
	Ethanedione
	Glyoxal aldehyde
	Glyoxylaldehyde
	ODIX
	Oxal
	Oxalaldehyde
	Protectol GL 40
Inchi:	InChI=1S/C2H2O2/c3-1-2-4/h1-2H
InchiKey:	LEQAOMBKQFMDFZ-UHFFFAOYSA-N
Formula:	C2H2O2
SMILES:	O=CC=O
Mol. weight [g/mol]:	58.04
CAS:	107-22-2

Physical Properties

Property code	Value	Unit	Source
chg	-860.90 ± 0.75	kJ/mol	NIST Webbook
ea	0.62 ± 0.26	eV	NIST Webbook
gf	-233.08	kJ/mol	Joback Method
hf	-212.00 ± 0.79	kJ/mol	NIST Webbook
hfus	5.51	kJ/mol	Joback Method
hvap	33.49	kJ/mol	Joback Method
ie	10.20	eV	NIST Webbook
ie	10.21	eV	NIST Webbook
ie	9.48 ± 0.08	eV	NIST Webbook
ie	10.60 ± 0.05	eV	NIST Webbook
ie	10.60	eV	NIST Webbook

ie	10.52	eV	NIST Webbook
ie	10.60	eV	NIST Webbook
ie	10.20	eV	NIST Webbook
log10ws	0.78		Crippen Method
logp	-0.616		Crippen Method
mcvol	42.180	ml/mol	McGowan Method
pc	6278.87	kPa	Joback Method
tb	323.60	K	NIST Webbook
tc	525.76	K	Joback Method
tf	196.30	K	Joback Method
vc	0.181	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	64.79	J/mol×K	342.48	Joback Method
cpg	67.69	J/mol×K	373.03	Joback Method
cpg	70.49	J/mol×K	403.57	Joback Method
cpg	73.17	J/mol×K	434.12	Joback Method
cpg	75.74	J/mol×K	464.67	Joback Method
cpg	78.19	J/mol×K	495.21	Joback Method
cpg	80.54	J/mol×K	525.76	Joback Method
dvisc	0.0023262	Pa×s	196.30	Joback Method
dvisc	0.0014148	Pa×s	220.66	Joback Method
dvisc	0.0009500	Pa×s	245.03	Joback Method
dvisc	0.0006855	Pa×s	269.39	Joback Method
dvisc	0.0005222	Pa×s	293.75	Joback Method
dvisc	0.0004147	Pa×s	318.12	Joback Method
dvisc	0.0003403	Pa×s	342.48	Joback Method

Sources

Joback Method: https://en.wikipedia.org/wiki/Joback_method

KDB: https://www.cheric.org/files/research/kdb/mol/mol1251.mol

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C107222&Units=SI

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

Legend

chg:	Standard gas enthalpy of combustion
cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
ea:	Electron affinity
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume