

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:	C ₂ H ₂ O ₂
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	10.60	eV	NIST Webbook
ie	10.60	eV	NIST Webbook
ie	10.60 ± 0.05	eV	NIST Webbook
ie	9.48 ± 0.08	eV	NIST Webbook
ie	10.21	eV	NIST Webbook

ie	10.20	eV	NIST Webbook
ie	10.20	eV	NIST Webbook
ie	10.52	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	m ³ /kmol	Joback Method

Temperature Dependent Properties

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

Sources

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

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>

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

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