Dichlorine monoxide

Other names:	Chlorine monooxide
	Chlorine monoxide
	Chlorine monoxide (Cl2O)
	Chlorine oxide
	Chlorine oxide (Cl2O)
	Cl2O
	Dichlorine oxide
	Dichloromonoxide
	Dichloroxide
	Hypochlorous anhydride
Inchi:	InChI=1S/Cl2O/c1-3-2
InchiKey:	RCJVRSBWZCNNQT-UHFFFAOYSA-N
Formula:	Cl2O
SMILES:	ClOCl
Mol. weight [g/mol]:	86.91
CAS:	7791-21-1

Physical Properties

Property code	Value	Unit	Source
ea	1.30 ± 0.43	eV	NIST Webbook
gf	-179.74	kJ/mol	Joback Method
hf	-207.03	kJ/mol	Joback Method
hfus	5.34	kJ/mol	Joback Method
hvap	26.77	kJ/mol	Joback Method
ie	10.91 ± 0.02	eV	NIST Webbook
ie	11.20 ± 0.10	eV	NIST Webbook
ie	11.02	eV	NIST Webbook
ie	10.91 ± 0.02	eV	NIST Webbook
ie	10.94	eV	NIST Webbook
log10ws	-1.20		Crippen Method
logp	1.311		Crippen Method
mcvol	41.210	ml/mol	McGowan Method
pc	5836.07	kPa	Joback Method
tb	296.68	K	Joback Method
tc	479.25	K	Joback Method
tf	171.83	K	Joback Method
vc	0.151	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	47.60	J/mol×K	296.68	Joback Method
cpg	47.57	J/mol×K	327.11	Joback Method
cpg	47.62	J/mol×K	357.54	Joback Method
cpg	47.75	J/mol×K	387.97	Joback Method
cpg	47.95	J/mol×K	418.39	Joback Method
cpg	48.21	J/mol×K	448.82	Joback Method
cpg	48.53	J/mol×K	479.25	Joback Method
dvisc	0.0019500	Pa×s	171.83	Joback Method
dvisc	0.0011979	Pa×s	192.64	Joback Method
dvisc	0.0008092	Pa×s	213.45	Joback Method
dvisc	0.0005861	Pa×s	234.25	Joback Method
dvisc	0.0004474	Pa×s	255.06	Joback Method
dvisc	0.0003557	Pa×s	275.87	Joback Method
dvisc	0.0002921	Pa×s	296.68	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.57156e+01
Coeff. B	-2.98553e+03
Coeff. C	-6.32000e+00
Temperature range (K), min.	174.65
Temperature range (K), max.	275.35

Sources

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C7791211&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/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

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
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume