

Oxygen cation

Inchi:	InChI=1S/O2/c1-2/q+1
InchiKey:	KMHJKRGRIJONSV-UHFFFAOYSA-N
Formula:	O2+
SMILES:	O=[O+]
Mol. weight [g/mol]:	32.00
CAS:	12185-07-8

Physical Properties

Property code	Value	Unit	Source
gf	-447.78	kJ/mol	Joback Method
hf	-426.93	kJ/mol	Joback Method
hfus	6.37	kJ/mol	Joback Method
hvap	27.12	kJ/mol	Joback Method
log10ws	-0.95		Crippen Method
logp	0.067		Crippen Method
mcvol	18.300	ml/mol	McGowan Method
pc	10161.94	kPa	Joback Method
tb	177.00	K	Joback Method
tc	289.79	K	Joback Method
tf	126.66	K	Joback Method
vc	0.089	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	9.31	J/mol×K	177.00	Joback Method
cpg	11.77	J/mol×K	195.80	Joback Method
cpg	14.04	J/mol×K	214.60	Joback Method
cpg	16.12	J/mol×K	233.40	Joback Method
cpg	18.04	J/mol×K	252.20	Joback Method
cpg	19.78	J/mol×K	270.99	Joback Method
cpg	21.37	J/mol×K	289.79	Joback Method
dvisc	0.0114021	Pa×s	126.66	Joback Method
dvisc	0.0078823	Pa×s	135.05	Joback Method

dvisc	0.0056896	Pa×s	143.44	Joback Method
dvisc	0.0042575	Pa×s	151.83	Joback Method
dvisc	0.0032841	Pa×s	160.22	Joback Method
dvisc	0.0025996	Pa×s	168.61	Joback Method
dvisc	0.0021038	Pa×s	177.00	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=C12185078&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
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

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