Oxygen difluoride

Other names:	Difluorine monooxide
	Difluorine monoxide
	FLUORINE OXIDE
	Fluorine monoxide
	OF2
	Oxydifluoride
	Oxygen fluoride
	Oxygen fluoride (OF2)
	UN 2190
Inchi:	InChI=1S/F2O/c1-3-2
InchiKey:	UJMWVICAENGCRF-UHFFFAOYSA-N
Formula:	F2O
SMILES:	FOF
Mol. weight [g/mol]:	54.00
CAS:	7783-41-7

Physical Properties

Property code	Value	Unit	Source
dm	0.20	debye	KDB
gf	41.78	kJ/mol	KDB
hf	24.53	kJ/mol	KDB
hfus	3.10	kJ/mol	Joback Method
hvap	16.37	kJ/mol	Joback Method
ie	13.11 ± 0.01	eV	NIST Webbook
ie	13.11 ± 0.01	eV	NIST Webbook
ie	13.11	eV	NIST Webbook
ie	13.26	eV	NIST Webbook
ie	13.13	eV	NIST Webbook
log10ws	-0.60		Crippen Method
logp	0.772		Crippen Method
mcvol	20.270	ml/mol	McGowan Method
pc	4960.00	kPa	KDB
tb	127.90 ± 0.30	K	NIST Webbook
tb	128.40	K	KDB
tc	215.00	K	KDB
tf	49.30	K	KDB
tf	49.40 ± 0.25	K	NIST Webbook

vc	0.089	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	37.05	J/mol×K	220.36	Joback Method
cpg	37.11	J/mol×K	242.86	Joback Method
cpg	37.23	J/mol×K	265.36	Joback Method
cpg	37.41	J/mol×K	287.86	Joback Method
cpg	37.65	J/mol×K	310.36	Joback Method
cpg	37.93	J/mol×K	332.86	Joback Method
cpg	38.27	J/mol×K	355.35	Joback Method
rhol	1521.00	kg/m3	128.00	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.47781e+01
Coeff. B	-1.33745e+03
Coeff. C	3.30000e+00
Temperature range (K), min.	75.00
Temperature range (K), max.	210.00

Sources

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C7783417&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

KDB: https://www.cheric.org/files/research/kdb/mol/mol1902.mol

Legend

cpg:	Ideal gas heat capacity
dm:	Dipole Moment
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
rhol:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume