

chlorine fluoride

Other names:	Chlorine monofluoride
Inchi:	InChI=1S/CIF/c1-2
InchiKey:	OMRRUNXAWXNVFW-UHFFFAOYSA-N
Formula:	CIF
SMILES:	FCl
Mol. weight [g/mol]:	54.45
CAS:	7790-89-8

Physical Properties

Property code	Value	Unit	Source
ea	1.50 ± 0.20	eV	NIST Webbook
ea	1.50 ± 0.30	eV	NIST Webbook
ea	2.86 ± 0.20	eV	NIST Webbook
ea	1.50 ± 0.40	eV	NIST Webbook
gf	-257.62	kJ/mol	Joback Method
hf	-255.18	kJ/mol	Joback Method
hfus	3.03	kJ/mol	Joback Method
hvap	19.16	kJ/mol	Joback Method
ie	12.74 ± 0.01	eV	NIST Webbook
ie	12.70 ± 0.30	eV	NIST Webbook
ie	12.66 ± 0.01	eV	NIST Webbook
ie	12.66 ± 0.01	eV	NIST Webbook
ie	12.74 ± 0.01	eV	NIST Webbook
ie	12.66 ± 0.01	eV	NIST Webbook
ie	12.65 ± 0.01	eV	NIST Webbook
ie	12.77	eV	NIST Webbook
log10ws	-0.82		Crippen Method
logp	1.110		Crippen Method
mcvol	24.870	ml/mol	McGowan Method
pc	5917.16	kPa	Joback Method
tb	173.10 ± 0.30	K	NIST Webbook
tc	390.65	K	Joback Method
tf	117.60 ± 0.30	K	NIST Webbook
vc	0.102	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	26.48	J/molxK	236.10	Joback Method
cpg	26.91	J/molxK	261.86	Joback Method
cpg	27.32	J/molxK	287.62	Joback Method
cpg	27.72	J/molxK	313.37	Joback Method
cpg	28.10	J/molxK	339.13	Joback Method
cpg	28.48	J/molxK	364.89	Joback Method
cpg	28.84	J/molxK	390.65	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.38871e+01
Coeff. B	-1.48328e+03
Coeff. C	-2.33800e+01
Temperature range (K), min.	115.00
Temperature range (K), max.	300.00

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
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=C7790898&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Legend

cpg:	Ideal gas heat capacity
ea:	Electron affinity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvac:	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

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