Carbonic difluoride

Other names:	CARBON DIFLUORIDE OXIDE
	CARBON OXYFLUORIDE
	COF2
	Carbon fluoride oxide
	Carbon fluoride oxide (COF2)
	Carbon oxyfluoride (COF2)
	Carbonyl difluoride
	Carbonyl fluoride
	Difluoroformaldehyde
	Difluorooxomethane
	Difluorophosgene
	Fluophosgene
	Fluoroformyl fluoride
	Fluorophosgene
	Rcra waste number U033
	UN 2417
Inchi:	InChI=1S/CF2O/c2-1(3)4
InchiKey:	IYRWEQXVUNLMAY-UHFFFAOYSA-N
Formula:	CF2O
SMILES:	O=C(F)F
Mol. weight [g/mol]:	66.01
CAS:	353-50-4

Physical Properties

Property code	Value	Unit	Source
affp	666.70	kJ/mol	NIST Webbook
basg	637.00	kJ/mol	NIST Webbook
gf	-561.00	kJ/mol	Joback Method
hf	-639.90 ± 1.00	kJ/mol	NIST Webbook
hf	-640.60 ± 5.90	kJ/mol	NIST Webbook
hfpi	649.00	kJ/mol	NIST Webbook
hfpiz	653.00	kJ/mol	NIST Webbook
hfus	6.10	kJ/mol	Joback Method
hvap	22.93	kJ/mol	Joback Method
ie	14.60 ± 0.10	eV	NIST Webbook
ie	13.04 ± 0.03	eV	NIST Webbook
ie	13.04 ± 0.03	eV	NIST Webbook

ie	13.60	eV	NIST Webbook
ie	13.02	eV	NIST Webbook
ie	13.20 ± 0.10	eV	NIST Webbook
ie	13.04	eV	NIST Webbook
log10ws	-0.70		Crippen Method
logp	1.045		Crippen Method
mcvol	30.060	ml/mol	McGowan Method
pc	5560.87	kPa	Joback Method
tb	190.00	K	NIST Webbook
tc	430.23	K	Joback Method
tf	152.14	K	Joback Method
vc	0.134	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	49.36	J/mol×K	352.46	Joback Method
cpg	50.99	J/mol×K	378.38	Joback Method
cpg	52.57	J/mol×K	404.31	Joback Method
cpg	44.14	J/mol×K	274.69	Joback Method
cpg	45.94	J/mol×K	300.61	Joback Method
cpg	47.68	J/mol×K	326.54	Joback Method
cpg	54.09	J/mol×K	430.23	Joback Method
hfust	6.70	kJ/mol	161.90	NIST Webbook
hsubt	23.20	kJ/mol	144.50	NIST Webbook
hvapt	20.00	kJ/mol	174.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.41385e+01
Coeff. B	-1.43630e+03
Coeff. C	-3.91300e+01
Temperature range (K), min.	142.83
Temperature range (K), max.	201.85

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C353504&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/mol1765.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

Legend

affp:	Proton affinity
basg:	Gas basicity
cpg:	Ideal gas heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfpi:	Enthalpy of formation of positive ion at standard conditions
hfpiz:	Enthalpy of formation of positive ion at 0K
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
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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