Ethane, 1,1,1,2-tetrachloro-2,2-difluoro-

Other names:	1,1,1,2-Tetrachloro-2,2-difluoroethane
	1,1,1,2-Tetrachlorodifluoroethane
	1,1-Difluoro-1,2,2,2-tetrachloroethane
	1,1-Difluorotetrachloroethane
	1,2,2,2-Tetrachloro-1,1-difluoroethane
	2,2-DIFLUORO-1,1,1,2-TETRACHLOROETHANE
	2,2-Difluorotetrachloroethane
	CFC 112a
	Ethane, 2,2-difluoro-1,1,1,2-tetrachloro-
	F 112a
	FREON BU
	Halocarbon 112a
	R 112a
	REFRIGERANT-112A
	Refrigerant 112a
Inchi:	InChI=1S/C2Cl4F2/c3-1(4,5)2(6,7)8
InchiKey:	SLGOCMATMKJJCE-UHFFFAOYSA-N
Formula:	C2Cl4F2
SMILES:	FC(F)(Cl)C(Cl)(Cl)Cl
Mol. weight [g/mol]:	203.83
CAS:	76-11-9

Physical Properties

Property code	Value	Unit	Source
gf	-465.70	kJ/mol	Joback Method
hf	-557.29	kJ/mol	Joback Method
hfus	9.06	kJ/mol	Joback Method
hvap	33.36	kJ/mol	Joback Method
log10ws	-3.18		Crippen Method
logp	3.188		Crippen Method
mcvol	91.540	ml/mol	McGowan Method
pc	3857.88	kPa	Joback Method
rinpol	702.00		NIST Webbook
rinpol	785.00		NIST Webbook
rinpol	785.00		NIST Webbook
rinpol	702.00		NIST Webbook
tb	364.70	K	NIST Webbook

tb	364.60	K	NIST Webbook
tc	592.71	K	Joback Method
tf	314.20 ± 0.20	K	NIST Webbook
vc	0.357	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	138.37	J/mol×K	386.96	Joback Method
cpg	143.76	J/mol×K	421.25	Joback Method
cpg	148.47	J/mol×K	455.54	Joback Method
cpg	152.57	J/mol×K	489.84	Joback Method
cpg	156.09	J/mol×K	524.13	Joback Method
cpg	159.09	J/mol×K	558.42	Joback Method
cpg	161.61	J/mol×K	592.71	Joback Method
hfust	3.99	kJ/mol	314.20	NIST Webbook
sfust	12.70	J/mol×K	314.20	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.34757e+01
Coeff. B	-2.54565e+03
Coeff. C	-7.72440e+01
Temperature range (K), min.	270.27
Temperature range (K), max.	389.05

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	9.41240e+01
Coeff. B	-6.96532e+03
Coeff. C	-1.22355e+01
Coeff. D	1.27074e-05
Temperature range (K), min.	262.15

Temperature range (K), max.	343.15

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C76119&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1542
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/mol1542.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

Legend

cpg:	Ideal gas heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
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
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume