Ethane, 1,2,2-trichloro-1,1-difluoro-

Other names:	1,1,2-Trichloro-2,2-difluoroethane
	1,1-Difluoro-1,2,2-trichloroethane
	1,2,2-Trichloro-1,1-difluoroethane
	1,2-Difluoro-1,2,2-trichloroethane
	2,2-Difluoro-1,1,2-trichloroethane
	Ethane, 1,1-difluoro-1,2,2-trichloro-
	F 122 (halocarbon)
	FC 122
	Freon 122
	Frigen 122
	HCFC 122
	R 122
	Ucon fluorocarbon 122
Inchi:	InChI=1S/C2HCl3F2/c3-1(4)2(5,6)7/h1H
InchiKey:	FQAMAOOEZDRHHB-UHFFFAOYSA-N
Formula:	C2HCl3F2
SMILES:	FC(F)(Cl)C(Cl)Cl
Mol. weight [g/mol]:	169.38
CAS:	354-21-2

Physical Properties

Property code	Value	Unit	Source
gf	-459.05	kJ/mol	Joback Method
hf	-538.08	kJ/mol	Joback Method
hfus	8.75	kJ/mol	Joback Method
hvap	32.90 ± 0.10	kJ/mol	NIST Webbook
hvap	32.80 ± 0.40	kJ/mol	NIST Webbook
log10ws	-2.54		Crippen Method
logp	2.622		Crippen Method
mcvol	79.300	ml/mol	McGowan Method
pc	3985.56	kPa	Joback Method
sl	281.03	J/mol×K	NIST Webbook
tb	345.00	K	NIST Webbook
tb	345.00	K	NIST Webbook
tb	345.10	K	NIST Webbook
tc	540.19	K	Joback Method
tf	190.66	K	Joback Method

vc	0.314	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	117.35	J/mol×K	352.32	Joback Method
cpg	122.32	J/mol×K	383.63	Joback Method
cpg	126.87	J/mol×K	414.94	Joback Method
cpg	131.02	J/mol×K	446.26	Joback Method
cpg	134.80	J/mol×K	477.57	Joback Method
cpg	138.23	J/mol×K	508.88	Joback Method
cpg	141.33	J/mol×K	540.19	Joback Method
cpl	167.04	J/mol×K	298.15	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.42721e+01
Coeff. B	-2.88828e+03
Coeff. C	-4.58130e+01
Temperature range (K), min.	252.35
Temperature range (K), max.	368.21

Sources

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C354212&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

Legend

cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
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
pvap:	Vapor pressure
sl:	Liquid phase molar entropy at standard conditions
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume