Ethane, 1-chloro-1,1,2,2-tetrafluoro-

Other names:	1,1,2,2-Tetrafluorochloroethane
	1-Chloro-1,1,2,2-Tetrafluoroethane
	F 124a
	Fc-124a
	R 124A
	R-124a
	freon 124a
Inchi:	InChI=1S/C2HClF4/c3-2(6,7)1(4)5/h1H
InchiKey:	JQZFYIGAYWLRCC-UHFFFAOYSA-N
Formula:	C2HClF4
SMILES:	FC(F)C(F)(F)Cl
Mol. weight [g/mol]:	136.48
CAS:	354-25-6

Physical Properties

Property code	Value	Unit	Source
gf	-824.81	kJ/mol	Joback Method
hf	-898.82	kJ/mol	Joback Method
hfus	6.52	kJ/mol	Joback Method
hvap	19.48	kJ/mol	Joback Method
log10ws	-1.94		Crippen Method
logp	2.083		Crippen Method
mcvol	58.360	ml/mol	McGowan Method
pc	3906.25	kPa	Joback Method
tb	283.30	K	NIST Webbook
tb	260.00 ± 3.00	K	NIST Webbook
tc	422.54	K	Joback Method
tf	132.00	K	Joback Method
vc	0.252	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	92.98	J/mol×K	276.00	Joback Method

cpg	98.08	J/mol×K	300.42	Joback Method
cpg	102.89	J/mol×K	324.85	Joback Method
cpg	107.43	J/mol×K	349.27	Joback Method
cpg	111.69	J/mol×K	373.70	Joback Method
cpg	115.70	J/mol×K	398.12	Joback Method
cpg	119.46	J/mol×K	422.54	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.44818e+01
Coeff. B	-2.35045e+03
Coeff. C	-2.31130e+01
Temperature range (K), min.	188.70
Temperature range (K), max.	400.00

Sources

Joback Method: https://en.wikipedia.org/wiki/Joback_method

KDB: https://www.cheric.org/files/research/kdb/mol/mol1549.mol

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C354256&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

Solubility Differences of Halocarbon Isomers in Ionic Liquid [emim][Tf2N]: https://www.doi.org/10.1021/je700295e

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

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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume