1,2-Difluoroethane

Other names:	CH2FCH2F
	Ethane, 1,2-difluoro-
	Ethylene difluolride
	FC143
	Fluorocarbon fc143
	Freon 152
	REFRIGERANT-152
Inchi:	InChI=1S/C2H4F2/c3-1-2-4/h1-2H2
InchiKey:	AHFMSNDOYCFEPH-UHFFFAOYSA-N
Formula:	C2H4F2
SMILES:	FCCF
Mol. weight [g/mol]:	66.05
CAS:	624-72-6

Physical Properties

Property code	Value	Unit	Source
gf	-423.66	kJ/mol	Joback Method
hf	-476.83	kJ/mol	Joback Method
hfus	7.10	kJ/mol	Joback Method
hvap	18.41	kJ/mol	Joback Method
log10ws	-0.37		Crippen Method
logp	0.925		Crippen Method
mcvol	42.580	ml/mol	McGowan Method
pc	4444.44	kPa	Joback Method
rinpol	368.00		NIST Webbook
rinpol	368.00		NIST Webbook
tb	283.65 ± 1.00	K	NIST Webbook
tc	381.80	K	Joback Method
tf	113.48	K	Joback Method
vc	0.183	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

cpg	59.58	J/mol×K	243.70	Joback Method
cpg	63.31	J/mol×K	266.72	Joback Method
cpg	66.93	J/mol×K	289.73	Joback Method
cpg	70.45	J/mol×K	312.75	Joback Method
cpg	73.87	J/mol×K	335.76	Joback Method
cpg	77.19	J/mol×K	358.78	Joback Method
cpg	80.41	J/mol×K	381.80	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.50142e+01
Coeff. B	-2.58932e+03
Coeff. C	-3.45780e+01
Temperature range (K), min.	210.40
Temperature range (K), max.	301.44

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	6.09008e+01
Coeff. B	-5.04105e+03
Coeff. C	-7.05486e+00
Coeff. D	6.85539e-06
Temperature range (K), min.	215.00
Temperature range (K), max.	476.00

Sources

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=1575
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/mol1575.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C624726&Units=SI

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
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume