1,1,2-Trifluoroethane

Other names: CH2FCHF2
Ethane, 1,1,2-trifluoro-
Inchi: InChI=1S/C2H3F3/c3-1-2(4)5/h2H,1H2
InchiKey: WGZYQOSEVSXDNI-UHFFFAOYSA-N
Formula: C2H3F3
SMILES: FCC(F)F
Mol. weight [g/mol]: 84.04
CAS: 430-66-0

Physical Properties

Property code	Value	Unit	Source
gf	-620.91	kJ/mol	Joback Method
hf	-691.00 ± 10.00	kJ/mol	NIST Webbook
hfus	6.65	kJ/mol	Joback Method
hvap	17.21	kJ/mol	Joback Method
log10ws	-0.83		Crippen Method
logp	1.221		Crippen Method
mcvol	44.350	ml/mol	McGowan Method
pc	5241.00 ± 8.00	kPa	NIST Webbook
rhoc	549.62 ± 8.40	kg/m3	NIST Webbook
rhoc	468.95 ± 5.04	kg/m3	NIST Webbook
tb	278.15 ± 0.50	K	NIST Webbook
tb	278.20	K	NIST Webbook
tb	278.00	K	NIST Webbook
tb	276.00 ± 3.00	K	NIST Webbook
tc	429.80 ± 0.70	K	NIST Webbook
tc	461.60 ± 0.50	K	NIST Webbook
tf	189.00 ± 5.00	K	NIST Webbook
vc	0.196	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	67.01	J/mol×K	242.53	Joback Method

cpg	70.81	J/mol×K	264.73	Joback Method
cpg	74.49	J/mol×K	286.93	Joback Method
cpg	78.06	J/mol×K	309.13	Joback Method
cpg	81.52	J/mol×K	331.33	Joback Method
cpg	84.88	J/mol×K	353.53	Joback Method
cpg	88.13	J/mol×K	375.73	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.35493e+01
Coeff. B	-1.93952e+03
Coeff. C	-6.08310e+01
Temperature range (K), min.	189.15
Temperature range (K), max.	296.48

Sources

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
McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C430660&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
rhoc:	Critical density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume