Propane, 2,2-difluoro-

Other names: (CH3)2CF2
2,2-Difluoropropane
Dimethyldifluoromethane
Inchi: InChI=1S/C3H6F2/c1-3(2,4)5/h1-2H3
InchiKey: YZXSQDNPKVBDOG-UHFFFAOYSA-N
Formula: C3H6F2
SMILES: CC(C)(F)F
Mol. weight [g/mol]: 80.08
CAS: 420-45-1

Physical Properties

Property code	Value	Unit	Source
gf	-412.40	kJ/mol	Joback Method
hf	-543.00 ± 13.00	kJ/mol	NIST Webbook
hfus	2.27	kJ/mol	Joback Method
hvap	19.34	kJ/mol	Joback Method
ie	11.42 ± 0.02	eV	NIST Webbook
log10ws	-1.39		Crippen Method
logp	1.661		Crippen Method
mcvol	56.670	ml/mol	McGowan Method
pc	4021.02	kPa	Joback Method
rinpol	370.00		NIST Webbook
tb	272.80 ± 1.00	K	NIST Webbook
tb	272.00	K	NIST Webbook
tc	414.18	K	Joback Method
tf	127.17	K	Joback Method
vc	0.229	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	81.39	J/mol×K	263.35	Joback Method
cpg	88.25	J/mol×K	288.49	Joback Method
cpg	94.80	J/mol×K	313.63	Joback Method

cpg	101.04	J/mol×K	338.76	Joback Method
cpg	106.98	J/mol×K	363.90	Joback Method
cpg	112.63	J/mol×K	389.04	Joback Method
cpg	118.01	J/mol×K	414.18	Joback Method
hvapt	25.60	kJ/mol	256.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.33174e+01
Coeff. B	-1.81155e+03
Coeff. C	-6.37540e+01
Temperature range (K), min.	202.78
Temperature range (K), max.	291.06

Sources

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C420451&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

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

hvapt: Enthalpy of vaporization at a given temperature

ie: Ionization energy

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