Cyclopentane, decafluoro-

Other names:	DECAFLUOROCYCLOPENTANE
	Perfluorocyclopentane
Inchi:	InChI=1S/C5F10/c6-1(7)2(8,9)4(12,13)5(14,15)3(1,10)11
InchiKey:	PWMJXZJISGDARB-UHFFFAOYSA-N
Formula:	C5F10
SMILES:	FC1(F)C(F)(F)C(F)(F)C(F)(F)C1(F)F
Mol. weight [g/mol]:	250.04
CAS:	376-77-2

Physical Properties

Property code	Value	Unit	Source
gf	-1978.62	kJ/mol	Joback Method
hf	-2052.31	kJ/mol	Joback Method
hfus	6.23	kJ/mol	Joback Method
hvap	25.60	kJ/mol	NIST Webbook
hvap	26.30	kJ/mol	NIST Webbook
ie	11.70	eV	NIST Webbook
log10ws	-3.38		Crippen Method
logp	3.176		Crippen Method
mcvol	88.150	ml/mol	McGowan Method
pc	2844.44	kPa	Joback Method
tb	293.70 ± 1.00	K	NIST Webbook
tc	438.50	K	Joback Method
tf	283.45	K	KDB
tf	343.00 ± 5.00	K	NIST Webbook
tt	283.55 ± 0.30	K	NIST Webbook
vc	0.422	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	187.60	J/mol×K	326.67	Joback Method
cpg	240.58	J/mol×K	438.50	Joback Method
cpg	172.94	J/mol×K	304.30	Joback Method

cpg	232.35	J/mol×K	416.13	Joback Method
cpg	223.05	J/mol×K	393.77	Joback Method
cpg	212.55	J/mol×K	371.40	Joback Method
cpg	200.77	J/mol×K	349.03	Joback Method
hfust	5.00	kJ/mol	118.20	NIST Webbook
hfust	3.00	kJ/mol	238.50	NIST Webbook
hfust	2.99	kJ/mol	238.50	NIST Webbook
hsubt	38.20	kJ/mol	115.00	NIST Webbook
hsubt	32.10	kJ/mol	255.00	NIST Webbook
hvapt	27.00	kJ/mol	291.00	NIST Webbook
sfust	41.90	J/mol×K	118.20	NIST Webbook
sfust	12.60	J/mol×K	238.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	5.79210e+01
Coeff. B	-4.87335e+03
Coeff. C	-6.56816e+00
Coeff. D	6.27180e-06
Temperature range (K), min.	290.15
Temperature range (K), max.	329.15

Sources

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

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C376772&Units=SI

KDB Vapor Pressure Data: https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1613

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/mol1613.mol

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
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
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
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume