Pentafluoropropionic anhydride

Other names:	Perfluoropropionic anhydride
	Propanoic acid, pentafluoro-, anhydride
	Pentafluoropropionic acid anhydride
	Perfluoropropionic acid anhydride
	Propionic acid, pentafluoro-, anhydride
	2,2,3,3,3-Pentafluoropropionic acid anhydride
	Pentafluoropropanoic anhydride
Inchi:	InChI=1S/C6F10O3/c7-3(8,5(11,12)13)1(17)19-2(18)4(9,10)6(14,15)16
InchiKey:	XETRHNFRKCNWAJ-UHFFFAOYSA-N
Formula:	C6F10O3
SMILES:	O=C(OC(=O)C(F)(F)C(F)(F)F)C(F)(F)C(F)(F)F
Mol. weight [g/mol]:	310.05
CAS:	356-42-3

Physical Properties

Property code	Value	Unit	Source
gf	-2299.94	kJ/mol	Joback Method
hf	-2520.65	kJ/mol	Joback Method
hfus	16.83	kJ/mol	Joback Method
hvap	31.50	kJ/mol	Joback Method
log10ws	-2.92		Crippen Method
logp	2.451		Crippen Method
mcvol	122.110	ml/mol	McGowan Method
pc	2358.78	kPa	Joback Method
rinpol	606.00		NIST Webbook
rinpol	606.00		NIST Webbook
tb	347.00	K	NIST Webbook
tc	592.84	K	Joback Method
tf	295.05	K	Joback Method
vc	0.537	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

cpg	310.08	J/mol×K	446.62	Joback Method
cpg	318.91	J/mol×K	470.99	Joback Method
cpg	327.10	J/mol×K	495.36	Joback Method
cpg	334.68	J/mol×K	519.73	Joback Method
cpg	341.67	J/mol×K	544.10	Joback Method
cpg	348.12	J/mol×K	568.47	Joback Method
cpg	354.04	J/mol×K	592.84	Joback Method

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	342.50 ± 0.50	K	98.00	NIST Webbook

Sources

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=C356423&Units=SI
Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

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
rinpol: Non-polar retention indices
tb: Normal Boiling Point Temperature
tbrp: Boiling point at reduced pressure

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