Perfluoropentanoic acid

Other names:	Nonafluoro-1-pentanoic acid nonafluoropentanoic acid pentanoic acid, nonafluoro- perfluorovaleric acid valeric acid, nonafluoro-
Inchi:	InChI=1S/C5HF9O2/c6-2(7,1(15)16)3(8,9)4(10,11)5(12,13)14/h(H,15,16)
InchiKey:	CXZGQIAOTKWCDB-UHFFFAOYSA-N
Formula:	C5HF9O2
SMILES:	O=C(O)C(F)(F)C(F)(F)C(F)(F)C(F)(F)F
Mol. weight [g/mol]:	264.04

Physical Properties

Property code	Value	Unit	Source
af	0.5970		Cheméo Relay (1.0)
gf	-2016.45	kJ/mol	Joback Method
hf	-2318.23	kJ/mol	Cheméo Relay (1.0)
hfus	12.46	kJ/mol	Joback Method
hvap	59.48	kJ/mol	Cheméo Relay (1.0)
ie	11.91	eV	Cheméo Relay (1.0)
logp	2.539		Crippen Method
mcvol	104.680	ml/mol	McGowan Method
pc	2853.57	kPa	Joback Method
tb	399.03	K	Cheméo Relay (1.0)
tc	530.36	K	Cheméo Relay (1.0)
tf	292.10	K	Cheméo Relay (1.0)
vc	0.418	m3/kmol	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	270.53	J/mol×K	440.36	Joback Method
cpg	278.57	J/mol×K	463.87	Joback Method
cpg	285.99	J/mol×K	487.37	Joback Method
cpg	292.82	J/mol×K	510.88	Joback Method

cpg	299.10	J/mol×K	534.38	Joback Method
cpg	304.86	J/mol×K	557.89	Joback Method
cpg	310.12	J/mol×K	581.40	Joback Method

Sources

Cheméo Relay (1.0):	
Cheméo Relay (1.0, beta):	
Solubility of Perfluoropentanoic Acid in Supercritical Carbon Dioxide: Measurements and Modeling:	https://www.doi.org/10.1021/acs.jced.6b00649
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2706903&Units=SI
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

af:	Acentric Factor
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
ie:	Ionization energy
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume