

Pentafluoropropionic acid

Other names:	2,2,3,3,3-Pentafluoropropionic acid Propanoic acid, pentafluoro- Propionic acid, pentafluoro-
Inchi:	InChI=1S/C3HF5O2/c4-2(5,1(9)10)3(6,7)8/h(H,9,10)
InchiKey:	LRMSQVBRUNSOJL-UHFFFAOYSA-N
Formula:	C3HF5O2
SMILES:	O=C(O)C(F)(F)C(F)(F)F
Mol. weight [g/mol]:	164.03
CAS:	422-64-0

Physical Properties

Property code	Value	Unit	Source
gf	-1259.73	kJ/mol	Joback Method
hf	-1368.11	kJ/mol	Joback Method
hfus	9.78	kJ/mol	Joback Method
hvap	39.02	kJ/mol	Joback Method
log10ws	-1.15		Crippen Method
logp	1.269		Crippen Method
mcvol	69.420	ml/mol	McGowan Method
pc	4227.54	kPa	Joback Method
rinpol	781.00		NIST Webbook
rinpol	781.00		NIST Webbook
tb	370.00 ± 1.00	K	NIST Webbook
tb	369.50 ± 0.50	K	NIST Webbook
tb	370.07 ± 0.20	K	NIST Webbook
tc	556.52	K	Joback Method
tf	242.11	K	Joback Method
vc	0.296	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	157.76	J/mol×K	403.98	Joback Method
cpg	163.55	J/mol×K	429.40	Joback Method

cpg	168.91	J/mol×K	454.83	Joback Method
cpg	173.88	J/mol×K	480.25	Joback Method
cpg	178.47	J/mol×K	505.67	Joback Method
cpg	182.70	J/mol×K	531.10	Joback Method
cpg	186.59	J/mol×K	556.52	Joback Method

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C422640&Units=SI
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
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
rinpola:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

Latest version available from:

<https://www.chemeo.com/cid/81-245-0/Pentafluoropropionic-acid.pdf>

Generated by Cheméo on 2025-12-22 15:58:41.597146958 +0000 UTC m=+6167319.127187611.

Cheméo (<https://www.chemeo.com>) is the biggest free database of chemical and physical data for the process industry.