

Octane, perfluoro-1,8-dihydro

Other names:	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluorooctane 1,8-dihydrohexadecafluorooctane 1H,8H-perfluoro-n-octane 1H,8H-perfluorooctane octane, 1,8-dihydrohexadecafluoro-
Inchi:	InChI=1S/C8H2F16/c9-1(10)3(13,14)5(17,18)7(21,22)8(23,24)6(19,20)4(15,16)2(11)12/h
InchiKey:	JCRVQXKRULILSR-UHFFFAOYSA-N
Formula:	C8H2F16
SMILES:	FC(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)F
Mol. weight [g/mol]:	402.08

Physical Properties

Property code	Value	Unit	Source
gf	-3088.32	kJ/mol	Joback Method
hf	-3409.27	kJ/mol	Joback Method
hfus	14.23	kJ/mol	Joback Method
hvap	11.78	kJ/mol	Joback Method
log10ws	-5.68		Crippen Method
logp	5.328		Crippen Method
mcvol	151.900	ml/mol	McGowan Method
pc	1506.98	kPa	Joback Method
rinpol	632.00		NIST Webbook
rinpol	632.00		NIST Webbook
tb	350.50	K	Joback Method
tc	459.35	K	Joback Method
tf	173.88	K	Joback Method
vc	0.694	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	430.10	J/mol×K	459.35	Joback Method
cpg	420.20	J/mol×K	441.21	Joback Method
cpg	409.70	J/mol×K	423.07	Joback Method

cpg	398.58	J/mol×K	404.93	Joback Method
cpg	386.81	J/mol×K	386.78	Joback Method
cpg	374.38	J/mol×K	368.64	Joback Method
cpg	361.26	J/mol×K	350.50	Joback Method
pvap	5.26	kPa	328.15	Solubility of oxygen in substituted perfluorocarbons
pvap	4.07	kPa	323.15	Solubility of oxygen in substituted perfluorocarbons
pvap	6.64	kPa	333.14	Solubility of oxygen in substituted perfluorocarbons
pvap	3.12	kPa	318.14	Solubility of oxygen in substituted perfluorocarbons
pvap	2.49	kPa	313.18	Solubility of oxygen in substituted perfluorocarbons
pvap	1.92	kPa	308.17	Solubility of oxygen in substituted perfluorocarbons
pvap	1.43	kPa	303.18	Solubility of oxygen in substituted perfluorocarbons
pvap	0.99	kPa	298.20	Solubility of oxygen in substituted perfluorocarbons
pvap	0.75	kPa	293.26	Solubility of oxygen in substituted perfluorocarbons
pvap	0.55	kPa	289.31	Solubility of oxygen in substituted perfluorocarbons

Sources

Crippen Method:

https://www.chemeo.com/doc/models/crippen_log10ws

Solubility of oxygen in substituted perfluorocarbons: liquid-liquid equilibrium of substituted perfluoro-n-octane + n-octane systems: Joback Method:

<https://www.doi.org/10.1016/j.fluid.2005.09.011>

<https://www.doi.org/10.1016/j.fluid.2008.04.011>

https://en.wikipedia.org/wiki/Joback_method

McGowan Method:

<http://link.springer.com/article/10.1007/BF02311772>

NIST Webbook:
Crippen Method:

<http://webbook.nist.gov/cgi/cbook.cgi?ID=R345458&Units=SI>
<http://pubs.acs.org/doi/abs/10.1021/ci990307l>

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
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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