1H,1H,2H-Perfluoro-1-decene

Other names:	(Perfluoro-n-octyl)ethylene
	1-Decene, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-1-decene
	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodec-1-ene
Inchi:	InChI=1S/C10H3F17/c1-2-3(11,12)4(13,14)5(15,16)6(17,18)7(19,20)8(21,22)9(23,24)10(
InchiKey:	NKAMGQZDVMQEJL-UHFFFAOYSA-N
Formula:	C10H3F17
SMILES:	C=CC(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)C(F)(F)F
Mol. weight [g/mol]:	446.10
CAS:	21652-58-4

Physical Properties

Property code	Value	Unit	Source
gf	-3167.89	kJ/mol	Joback Method
hf	-3528.17	kJ/mol	Joback Method
hfus	13.42	kJ/mol	Joback Method
hvap	12.93	kJ/mol	Joback Method
log10ws	-6.72		Crippen Method
logp	6.182		Crippen Method
mcvol	177.550	ml/mol	McGowan Method
pc	1323.28	kPa	Joback Method
tb	419.50 ± 0.50	K	NIST Webbook
tc	502.02	K	Joback Method
tf	230.09	K	Joback Method
vc	0.794	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	443.94	J/mol×K	386.63	Joback Method
cpg	458.85	J/mol×K	405.86	Joback Method
cpg	472.84	J/mol×K	425.09	Joback Method
cpg	485.97	J/mol×K	444.32	Joback Method
cpg	498.25	J/mol×K	463.56	Joback Method

cpg	509.73	J/mol×K	482.79	Joback Method
cpg	520.43	J/mol×K	502.02	Joback Method
pvap	0.01	kPa	254.15	Ambient Temperature Vapor Pressure and Adsorption Capacity for (Perfluorooctyl) Ethylene, 3-(Perfluorobutyl)propanol, Perfluorohexanoic Acid, Ethyl Perfluorooctanoate, and Perfluoro-3,6-dioxaheptanoic Acid
pvap	0.07	kPa	272.45	Ambient Temperature Vapor Pressure and Adsorption Capacity for (Perfluorooctyl) Ethylene, 3-(Perfluorobutyl)propanol, Perfluorohexanoic Acid, Ethyl Perfluorooctanoate, and Perfluoro-3,6-dioxaheptanoic Acid
pvap	0.28	kPa	290.75	Ambient Temperature Vapor Pressure and Adsorption Capacity for (Perfluorooctyl) Ethylene, 3-(Perfluorobutyl)propanol, Perfluorohexanoic Acid, Ethyl Perfluorooctanoate, and Perfluoro-3,6-dioxaheptanoic Acid
pvap	0.98	kPa	309.15	Ambient Temperature Vapor Pressure and Adsorption Capacity for (Perfluorooctyl) Ethylene, 3-(Perfluorobutyl)propanol, Perfluorohexanoic Acid, Ethyl Perfluorooctanoate, and Perfluoro-3,6-dioxaheptanoic Acid

Sources

Ambient Temperature Vapor Pressure and Adsorption Capacity for (Perfluorooctyl) Ethylene, 3-(Perfluorobutyl)propanol, Perfluorohexanoic Acid, Ethyl Perfluorooctanoate, and Perfluoro-3,6-dioxaheptanoic Acid:	https://www.doi.org/10.1021/je400205g
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=C21652584&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
High-Pressure Phase Behavior of Heptadecafluoro-1-decene and Nonafluoro-1-hexene in Supercritical Carbon Dioxide:	https://www.doi.org/10.1021/je300258z

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