

Pentasiloxane, dodecamethyl-

Other names:	1,1,1,3,3,5,5,7,7,9,9,9-Dodecamethylpentasiloxane Dodecamethylpentasiloxane
Inchi:	InChI=1S/C12H36O4Si5/c1-17(2,3)13-19(7,8)15-21(11,12)16-20(9,10)14-18(4,5)6/h1-12
InchiKey:	FBZANXDWQAVSTQ-UHFFFAOYSA-N
Formula:	C12H36O4Si5
SMILES:	C[Si](C)(C)O[Si](C)(C)O[Si](C)(C)O[Si](C)(C)O[Si](C)(C)C
Mol. weight [g/mol]:	384.84
CAS:	141-63-9

Physical Properties

Property code	Value	Unit	Source
log10ws	6.80		Crippen Method
logp	4.828		Crippen Method
rinpol	1202.90		NIST Webbook
volm	4.42e-04	m3/mol	Thermodynamic Study of Heptane + Silicone Mixtures. Excess Volumes and Enthalpies at 298.15 K

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
hvapt	50.30	kJ/mol	443.50	NIST Webbook
hvapt	55.40	kJ/mol	455.00	NIST Webbook
pvap	0.09	kPa	338.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	0.17	kPa	348.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers

pvap	0.30	kPa	358.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	0.51	kPa	368.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	0.84	kPa	378.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	1.36	kPa	388.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	2.14	kPa	398.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers
pvap	3.28	kPa	408.15	Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers

Sources

Crippen Method:

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

Bubble-Point Measurements and Modeling of Binary Mixtures of Linear Siloxanes. Temperature-Dependent Vapor Pressure of Selected Cyclic and Linear Polydimethylsiloxane Oligomers + Silicone Mixtures. Excess Volumes and Heat of Vaporization at 298.15 K:

<https://www.doi.org/10.1021/acs.jced.8b00200>

<https://www.doi.org/10.1021/je100835n>

<https://www.doi.org/10.1021/je2007378>

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C141639&Units=SI>

Crippen Method:

<http://pubs.acs.org/doi/abs/10.1021/ci9903071>

Legend

hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
pvap:	Vapor pressure
rinppl:	Non-polar retention indices
volm:	Molar Volume

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