Silane, trichloro

Other names: Trichlorosilane
Inchi: InChI=1S/Cl3HSi/c1-4(2)3/h4H
InchiKey: ZDHXKXAHOVTTAH-UHFFFAOYSA-N
Formula: Cl3HSi
SMILES: Cl[SiH](Cl)Cl
Mol. weight [g/mol]: 135.45
CAS: 10025-78-2

Physical Properties

Property code	Value	Unit	Source
ie	11.94	eV	NIST Webbook
ie	11.94	eV	NIST Webbook
log10ws	0.72		Crippen Method
logp	1.420		Crippen Method
rinpol	496.30		NIST Webbook
rinpol	491.00		NIST Webbook
rinpol	496.30		NIST Webbook
tb	304.50 ± 0.50	K	NIST Webbook
tb	305.00 ± 0.50	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
hvapt	24.90	kJ/mol	314.00	NIST Webbook
hvapt	27.20	kJ/mol	290.00	NIST Webbook
pvap	225.35	kPa	330.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

pvap	183.50	kPa	323.33	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	245.00	kPa	333.17	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	321.00	kPa	343.00	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	414.50	kPa	352.96	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	528.80	kPa	362.96	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	121.89	kPa	310.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	167.53	kPa	320.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

pvap	134.10	kPa	313.34	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	297.40	kPa	340.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	385.60	kPa	350.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	492.10	kPa	360.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	619.60	kPa	370.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	770.20	kPa	380.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	778.20	kPa	380.50	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	854.60	kPa	385.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

pvap	946.00	kPa	390.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	1044.20	kPa	395.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

Sources

Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon tetrachloride:	https://www.doi.org/10.1016/j.jct.2015.07.047
Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K:	https://www.doi.org/10.1021/acs.jced.6b00142
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C10025782&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature

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