Silicon tetrachloride

Other names:	Chlorid kremicity
	Extrema
	SIC-L(TM)
	SiCl4
	Silane, tetrachloro-
	Silicio(tetracloruro di)
	Silicium(tetrachlorure de)
	Siliciumtetrachlorid
	Siliciumtetrachloride
	Silicon chloride
	Silicon chloride (SiCl4)
	Tetrachlorosilane
	Tetrachlorosilicon
	Tetrachlorure de silicium
	UN 1818
	silicon(IV) chloride
Inchi:	InChI=1S/Cl4Si/c1-5(2,3)4
InchiKey:	FDNAPBUWERUEDA-UHFFFAOYSA-N
Formula:	Cl4Si
SMILES:	Cl[Si](Cl)(Cl)Cl
Mol. weight [g/mol]:	169.90
CAS:	10026-04-7

Physical Properties

Property code	Value	Unit	Source
ie	11.79 ± 0.01	eV	NIST Webbook
ie	12.06	eV	NIST Webbook
ie	11.79 ± 0.01	eV	NIST Webbook
ie	11.80	eV	NIST Webbook
log10ws	-0.23		Crippen Method
logp	2.377		Crippen Method
rinpol	568.00		NIST Webbook
rinpol	578.00		NIST Webbook
rinpol	566.80		NIST Webbook
rinpol	569.00		NIST Webbook
rinpol	578.00		NIST Webbook
rinpol	590.00		NIST Webbook

rinpol	558.00		NIST Webbook
tb	330.00	K	NIST Webbook
tb	330.75 ± 0.40	K	NIST Webbook
tb	330.28 ± 0.50	K	NIST Webbook
tc	0.00	K	NIST Webbook
tf	204.40 ± 0.60	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
hfust	7.72	kJ/mol	204.70	NIST Webbook
hsubt	43.30 ± 0.10	kJ/mol	189.50	NIST Webbook
hvapt	29.90	kJ/mol	305.50	NIST Webbook
hvapt	30.40	kJ/mol	299.50	NIST Webbook
hvapt	30.20	kJ/mol	302.50	NIST Webbook
hvapt	30.10	kJ/mol	303.00	NIST Webbook
pvap	228.40	kPa	358.17	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	94.00	kPa	328.25	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	129.80	kPa	338.31	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride

pvap	172.90	kPa	348.08	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	66.70	kPa	318.27	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	295.30	kPa	368.17	Phase equilibrium data for potentially hazardous binary mixtures involving dichlorosilane, trichlorosilane and silicon-tetrachloride
pvap	113.02	kPa	332.99	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	139.15	kPa	340.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	138.98	kPa	340.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	185.05	kPa	350.01	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

pvap	241.64	kPa	360.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	311.49	kPa	370.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	395.69	kPa	380.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	495.90	kPa	390.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K
pvap	614.00	kPa	400.00	Vapor Pressure of Dichlorosilane, Trichlorosilane, and Tetrachlorosilane from 300 K to 420 K

Sources

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=C10026047&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
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

Legend

hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
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
tc:	Critical Temperature
tf:	Normal melting (fusion) point

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