

Silane, tetramethyl-

Other names:	(CH ₃) ₄ Si CT2050 NSC 5210 Si(CH ₃) ₄ Silicon, tetramethyl- T2050 TMS Tetramethylsilane Tetramethylsilicane UN 2749
Inchi:	InChI=1S/C4H12Si/c1-5(2,3)4/h1-4H3
InchiKey:	CZDYPVPMEAXLPK-UHFFFAOYSA-N
Formula:	C ₄ H ₁₂ Si
SMILES:	C[Si](C)(C)C
Mol. weight [g/mol]:	88.22
CAS:	75-76-3

Physical Properties

Property code	Value	Unit	Source
hvap	26.00 ± 0.60	kJ/mol	NIST Webbook
ie	9.80 ± 0.03	eV	NIST Webbook
ie	10.40	eV	NIST Webbook
ie	9.60	eV	NIST Webbook
ie	10.57	eV	NIST Webbook
ie	9.79 ± 0.04	eV	NIST Webbook
ie	9.40 ± 0.10	eV	NIST Webbook
ie	9.85 ± 0.16	eV	NIST Webbook
ie	9.74 ± 0.05	eV	NIST Webbook
ie	9.86 ± 0.02	eV	NIST Webbook
ie	9.85 ± 0.16	eV	NIST Webbook
ie	9.90 ± 0.10	eV	NIST Webbook
ie	9.98 ± 0.03	eV	NIST Webbook
ie	9.99 ± 0.03	eV	NIST Webbook
ie	10.29	eV	NIST Webbook
ie	9.80 ± 0.04	eV	NIST Webbook
log ₁₀ ws	1.03		Crippen Method
logp	1.954		Crippen Method

pc	2821.00 ± 1.00	kPa	NIST Webbook
rinpol	429.40		NIST Webbook
rinpol	428.10		NIST Webbook
rinpol	429.00		NIST Webbook
rinpol	429.80		NIST Webbook
rinpol	419.00		NIST Webbook
rinpol	420.00		NIST Webbook
rinpol	420.00		NIST Webbook
rinpol	429.40		NIST Webbook
rinpol	429.80		NIST Webbook
rinpol	430.00		NIST Webbook
rinpol	422.40		NIST Webbook
rinpol	423.60		NIST Webbook
rinpol	424.80		NIST Webbook
rinpol	425.90		NIST Webbook
rinpol	426.80		NIST Webbook
rinpol	420.00		NIST Webbook
rinpol	428.40		NIST Webbook
rinpol	428.00		NIST Webbook
rinpol	428.10		NIST Webbook
rinpol	419.00		NIST Webbook
rinpol	425.90		NIST Webbook
rinpol	427.60		NIST Webbook
sl	272.04	J/molxK	NIST Webbook
sl	277.27	J/molxK	NIST Webbook
tb	299.00 ± 3.00	K	NIST Webbook
tb	299.70	K	NIST Webbook
tc	448.64 ± 0.03	K	NIST Webbook
tt	171.04 ± 0.02	K	NIST Webbook
tt	174.12 ± 0.02	K	NIST Webbook
tt	170.98 ± 0.01	K	NIST Webbook
tt	174.07 ± 0.01	K	NIST Webbook
tt	165.92 ± 0.01	K	NIST Webbook
tt	171.01 ± 0.01	K	NIST Webbook
tt	174.04 ± 0.01	K	NIST Webbook
vc	0.362 ± 0.008	m ³ /kmol	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpl	164.56	J/molxK	177.45	NIST Webbook

cpl	197.90	J/mol×K	290.00	NIST Webbook
cpl	189.84	J/mol×K	290.00	NIST Webbook
hfust	6.74	kJ/mol	174.00	NIST Webbook
hfust	6.74	kJ/mol	174.00	NIST Webbook
hvapt	24.20	kJ/mol	299.80	NIST Webbook
hvapt	24.20 ± 0.10	kJ/mol	299.00	NIST Webbook
svapt	80.73	J/mol×K	299.80	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.38189e+01
Coeff. B	-2.44422e+03
Coeff. C	-3.40420e+01
Temperature range (K), min.	214.68
Temperature range (K), max.	321.34

Sources

The Yaws Handbook of Vapor Pressure:
Crippen Method:

<https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure>

Crippen Method:

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

NIST Webbook:

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

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C75763&Units=SI>

Legend

cpl:	Liquid phase heat capacity
hfust:	Enthalpy of fusion at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient

pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
sl:	Liquid phase molar entropy at standard conditions
svapt:	Entropy of vaporization at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tt:	Triple Point Temperature
vc:	Critical Volume

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