

TETRABUTYL ORTHOSILICATE

Other names:	Butyl silicate ((BuO)4Si) Butyl silicate ((C4H9O)4Si) CT1750 NSC 89762 Silane, tetrabutoxy- Silicic acid, tetrabutyl ester Silicon tetrabutoxide T1750 Tetra-n-butoxysilane Tetrabutoxysilane Tetrabutyl silicate tetra-n-Butyl orthosilicate
Inchi:	InChI=1S/C16H36O4Si/c1-5-9-13-17-21(18-14-10-6-2,19-15-11-7-3)20-16-12-8-4/h5-16H
InchiKey:	UQMOLLPKNHFRAC-UHFFFAOYSA-N
Formula:	C16H36O4Si
SMILES:	CCCCO[Si](OCCCC)(OCCCC)OCCCC
Mol. weight [g/mol]:	320.55

Physical Properties

Property code	Value	Unit	Source
af	0.8293		Cheméo Relay (1.0)
gf	-335.81	kJ/mol	Cheméo Relay (1.0, beta)
hf	-1106.25	kJ/mol	Cheméo Relay (1.0)
hvap	52.00 ± 1.00	kJ/mol	NIST Webbook
ie	10.04	eV	Cheméo Relay (1.0)
log10ws	-4.51		Cheméo Relay (1.0)
logp	4.689		Crippen Method
pc	1100.00	kPa	Vapor-Liquid Critical Properties of Some Tetraalkoxysilanes
rinpol	1488.00		NIST Webbook
rinpol	1490.00		NIST Webbook
rinpol	1480.00		NIST Webbook
rinpol	1483.20		NIST Webbook
rinpol	1488.00		NIST Webbook
rinpol	1488.00		NIST Webbook
tb	535.05	K	Cheméo Relay (1.0)

tc	691.02	K	Cheméo Relay (1.0)
tf	156.78	K	Cheméo Relay (1.0)
vc	1.104	m ³ /kmol	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpl	580.20	J/mol×K	298.15	NIST Webbook
hvapt	79.60	kJ/mol	406.00	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	393.00	K	0.40	NIST Webbook

Sources

Vapor-Liquid Critical Properties of
Some Tetraalkoxysilanes:
NIST Webbook:

<https://www.doi.org/10.1021/je800086s>

Crippen Method:

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C4766578&Units=SI>

Crippen Method:

<http://pubs.acs.org/doi/abs/10.1021/ci990307l>

Cheméo Relay (1.0):

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

Cheméo Relay (1.0, beta):

Legend

af:	Acentric Factor
cpl:	Liquid phase heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
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
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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