


 DI-*TERT*-BUTYLSILANE (DTBS)

CAS No. 30736-07-3

QS-PDS-004 Revision: 01

**Product Names** Di-*tert*-butylsilane, Di-*t*-butylsilane, DTBS

**Formula** [(CH<sub>3</sub>)<sub>3</sub>C]<sub>2</sub>SiH<sub>2</sub>

**Appearance** Clear, colorless liquid.

**Application** Di-*tert*-butylsilane is a **DEVELOPMENTAL** product and can be employed to install the highly hindered di-*t*-butylsilylene group for the protection of 1,2 and 1,3 diols. The formation of this protecting group can be catalyzed by Pd/C (K. Yamamoto and M. Takemae, *Bull. Chem. Soc. Jpn.*, **1989**, 62, 2111) or fluoride ion (Y. Tanabe *et al*, *Tetradron Lett.*, **1994**, 35, 8409). Di-*tert*-butylsilane can also be employed as a sterically hindered reducing agent. Upon thermolysis, Di-*tert*-butylsilane serves as a source of silicon for the CVD of silicon carbide (J. M. Grow, *Proc. Electrochem. Soc.*, **1996**, 96, 60).

**Product Specification**

	<u>Guaranteed*</u>
Di- <i>tert</i> -butylsilane (wt.%)	98.5 min

\*This product can be made to agreed upon customer specifications.

**Solubility** Neat

**Physical Properties**

Molecular weight	144.30
Density @20°C	0.74 g/mL (6.17 lb/gal)
Contained Di- <i>tert</i> -butylsilane	733 g/L (6.11 lb/gal)
Boiling point	127–128°C
Freezing point	-38°C
Flash point	5°C
Pyrophoricity	Non-pyrophoric

**Solubility** DTBS is miscible in all proportions with aliphatic, aromatic, and ethereal solvents. Essentially insoluble in water.

**Thermal Stability** DTBS is stable under inert atmosphere in sealed container at room temperature.



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**Toxicity/Safety Data** DTBS is a flammable liquid that may irritate eyes, skin, nose and throat.

*ADDITIONAL INFORMATION ON SAFETY IS CONTAINED IN THE OPTIMA NEW PRODUCT DATA SHEET (NPDS) AVAILABLE FOR THIS PRODUCT.*

**Handling/Storage/Disposal** Do not get into eyes, on skin, or clothing. Avoid breathing vapors. Wear safety glasses or goggles, and rubber gloves. Use only in work area having adequate ventilation or use NIOSH/OSHA approved respirator. Keep container tightly closed. Keep separated from amines, basic compounds, and oxidizers. Wash contaminated clothing before reuse. Wash thoroughly after handling. Keep away from heat, sparks and flame.

<b>Shipping Containers</b>	Bulk containers	2500 – 20000 L
	Cylinders	#5 – 420 L
	Glass bottles	125 mL, 500 mL, and 1 L

**Shipping Limitations** Shipments of DTBS are described as "Flammable Liquid, N.O.S., (*DI-T-BUTYLSILANE*), 3, UN1993, PG II." Shipments require "Flammable Liquid" labels.

Post, Parcel	Not acceptable
Sea	Class 3 (IMDG)
Road, Rail	Class 3 (DOT, RID/ADR)
Air	Class 3 (IATA)
	2.5 L maximum per inner container.
	60 L maximum outer container.
	Cargo aircraft only

For shipments within Europe, labeling for supply requirements are:

F	Highly Flammable
Xi	Irritant
R&S phrases	See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).

**Additional Resources** Refer to the Organometallics and Reactive Specialty Organics Safe Handling Guide.