

## MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	3
Fire Hazard	3
Reactivity	2



See Section 8.

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product code:</b>	B2177
<b>Product Name:</b>	TERT-BUTYLDIMETHYLSILYL CHLORIDE
<b>Chemical Name:</b>	Silane, chloro(1,1-dimethylethyl)dimethyl-
<b>Synonyms:</b>	tert-Butyldimethylchlorosilane Chloro-tert-butyldimethylsilane Silane, t-butyldimethylchloro- tert-Butylchlorodimethylsilane
<b>Recommended use:</b>	No information available.
<b>CAS #:</b>	18162-48-6
<b>Formula:</b>	C6-H15-Si-Cl
<b>RTECS #</b>	VV2000000
<b>CI#:</b>	Not available
<b>Supplier:</b>	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
<b>Emergency Telephone Number:</b>	CHEMTREC: 1-800-424-9300
<b>Contact Person:</b>	Martin LaBenz (West Coast)
<b>Contact Person:</b>	Chris Terpak (East Coast)

### 2. HAZARDS IDENTIFICATION

<b>EMERGENCY OVERVIEW</b>			
DANGER!. FLAMMABLE SOLID. DANGER CORROSIVE!. The product causes burns of eyes, skin and mucous membranes. Water Reactive.			
<b>Odor:</b> No information available	<b>Physical state:</b> Solid.	<b>Appearance:</b> No information available	<b>Color:</b> White.

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

## 2. HAZARDS IDENTIFICATION

### POTENTIAL HEALTH EFFECTS

**Principal Routes of Exposure:**

Ingestion. Inhalation. Skin. Eyes.

**Acute Potential Health Effects:****Skin Contact:**

Extremely irritating to the skin. Causes skin burns.

**Eye Contact:**

Severe eye irritation. Causes eye burns.

**Inhalation:**

Irritating to respiratory system. May cause chemical burns to the respiratory tract.

**Ingestion:**

Causes digestive (gastrointestinal) tract irritation. Causes burns. Can burn mouth, throat, and stomach. It may affect the immune system.

**Chronic Potential Health Effects:****Component**

tert-Butyldimethylsilyl Chloride  
18162-48-6 (100)

**Carcinogen Status:**

No information available

**Target Organs:**

Skin. Eyes.

**Teratogenic Effects:**

No information available

**Mutagenic Effects:**

No information available

**Aggravated Medical Conditions:** No information available

See Section 11 for additional Toxicological Information

### POTENTIAL ENVIRONMENTAL EFFECTS

No information available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
tert-Butyldimethylsilyl Chloride	18162-48-6	100

## 4. FIRST AID MEASURES

**General Advice:**

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

<b>Skin Contact:</b>	Wash off immediately with soap and plenty of water. Remove all contaminated clothes and shoes. Continue flushing with plenty of water for at least 15 minutes. Immediate medical attention is required. Call a physician immediately.
<b>Eye Contact:</b>	Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.
<b>Inhalation:</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. <b>WARNING!</b> It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.
<b>Ingestion:</b>	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.
<b>Notes to Physician:</b>	Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

### Flammable Properties

<b>Flashpoint (°C/°F):</b>	22-28 °C/71.6-82.4 °F
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<b>Tested according to:</b>	Closed cup
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<b>Lower Explosion Limit (%):</b>	No information available
<b>Upper Explosion Limit (%):</b>	No information available

<b>Autoignition Temperature (°C/°F):</b>	405 °C/761 °F
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<b>Suitable Extinguishing Media:</b>	Carbon dioxide (CO <sub>2</sub> ). Alcohol-resistant foam. AFFF alcohol-resistant medium expansion foam. Dry sand.
<b>Unsuitable Extinguishing Media:</b>	Water. Dry chemical.
<b>Hazardous Combustion Products:</b>	Carbon monoxide; carbon dioxide; hydrogen chloride; silicon dioxide
<b>Specific hazards:</b>	Flammable. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated. Containers may explode if contaminated with water. Fire may produce irritating, corrosive and/or toxic gases. Substance will react with water, releasing corrosive and/or toxic fumes. Reacts with water to produce Hydrogen chloride. Evolves flammable hydrogen gas on contact with water. Hydrogen gas can further be generated when the hydrochloric acid reacts with some metals.
<b>Special Protective Equipment for Firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
<b>Specific Methods:</b>	No information available.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Do not get water inside containers.

### Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas. Do not get water inside the containers. Do not get water on spilled substance.

### Methods for Cleaning Up:

Sweep up and shovel into suitable containers for disposal. Use appropriate tools to put the spilled solid in a suitable waste disposal container. Take precautionary measures against static discharges. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Handling

#### Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

#### Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Protect from moisture. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice. Never add water to this product.

### Storage

#### Technical Measures/Storage Conditions:

Moisture sensitive. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

#### Incompatible Products:

Oxidizing agents. Water. Moisture. Bases. Alcohols. Metals.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

### Personal Protective Equipment

**Eye protection:** Face-shield.

**Skin and body protection:** Gloves. boots. Chemical resistant protective suit.

**Respiratory protection:** Wear respirator with dust filter..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

### National occupational exposure limits

#### United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
tert-Butyldimethylsilyl Chloride - 18162-48-6	None	None	None	None

#### Canada

Components	Alberta	British Columbia	Ontario	Quebec
tert-Butyldimethylsilyl Chloride 18162-48-6	None	None	None	None

#### Australia and Mexico

Components	Australia	Mexico
tert-Butyldimethylsilyl Chloride 18162-48-6	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:**

Solid.

**Appearance:**

No information available

**Color:**

White.

**Odor:**

No information available

**Taste**

No information available

**Molecular/Formula weight:**

150.73

**Flash point (°C):**

22

**Lower Explosion Limit (%):**

No information available

**Upper Explosion Limit (%):**

No information available

**Autoignition Temperature (°C/°F):**

405 °C/761 °F

**pH:**

No information available

**Melting point/range(°C/°F):**

85-92 °C/185-197.6 °F

**Boiling point/range(°C/°F):**

125 °C/257 °F

**Decomposition temperature(°C/°F):**

No information available

**Specific gravity:**

0.87

**Density (g/cm3):**

No information available

**Bulk density:**

No information available

**Vapor pressure @ 20°C (kPa):**

2

**Evaporation rate:**

No information available

**Vapor density:**

No information available

**VOC content (g/L):**

No information available

**Odor threshold (ppm):**

No information available

**Partition coefficient  
(n-octanol/water):**

No information available

**Miscibility:**

No information available

**Solubility:**

Reacts with water

## 10. STABILITY AND REACTIVITY

**Stability:**

Stable at normal conditions

**Conditions to avoid:**

Heat. Ignition sources. Incompatible materials. Exposure to moisture. Exposure to water.

**Materials to avoid:**

Strong oxidising agents. Chlorine. Bases. water. Metals. Alcohols. Ammonia. amines.

<b>Hazardous decomposition products:</b>	Carbon monoxide. Carbon dioxide. Silicon dioxide. Hydrogen chloride gas.
<b>Possibility of Hazardous Reactions:</b>	<p>Reacts with water to produce Hydrogen chloride</p> <p>Evolves flammable hydrogen gas on contact with water</p> <p>Hydrogen gas can further be generated when the hydrochloric acid reacts with some metals</p> <p>Alcohols react with chlorosilanes forming hydrogen chloride</p> <p>Chlorine will react violently with any hydrogen-containing chlorosilane</p> <p>Bases react violently with chlorosilanes, generating heat and potentially generating hydrogen with hydrogen-containing chlorosilanes</p>
<b>Polymerization:</b>	Hazardous polymerisation does not occur
<b>Corrosivity:</b>	No information available
<b>Special Remarks on Corrosivity:</b>	No information available

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Component Information

*tert-Butyldimethylsilyl Chloride - 18162-48-6*

- LD50/oral/rat** = No information available
- LD50/oral/mouse** = No information available
- LD50/dermal/rabbit** = No information available
- LD50/dermal/rat** = No information available
- LC50/inhalation/rat** = No information available
- LC50/inhalation/mouse** = No information available
- Other LD50 or LC50 information** = No information available

#### Product Information

- LC50/inhalation/rat** = 450 ppm Inhalation LC50 Rat 4 h
- LC50/Inhalation/mouse** = 180 mg/m<sup>3</sup> 2 h
- LD50/dermal/rabbit** = 840 µL/kg
- LD50/dermal/rat** = No information available
- LD50/oral/mouse** = No information available

**LD50/oral/rat** = 1620 µL/kg

#### Local Effects

- Skin irritation:** Severe skin irritation. Causes burns.
- Eye irritation:** Severe eye irritation. Causes burns.
- Inhalation:** Irritating to respiratory system. May cause chemical burns to the respiratory tract.
- Ingestion:** Causes digestive or gastrointestinal tract burns. May cause perforation of the digestive tract. It may affect the immune system and cause decreased immune response.
- Sensitization:** No information available

## Chronic Toxicity

**Chronic Toxicity** No information available

**Carcinogenic effects:** Not considered carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
tert-Butyldimethylsilyl Chloride	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** No information available

**Reproductive Effects:** No information available

**Teratogenic Effects:** No information available

**Target Organs:** Skin. Eyes.

## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY

**Toxicity to terrestrial and aquatic plants and animals:** No information available

**Ecotoxicity effects:** No data available.

**Aquatic toxicity:** No information available

**Mobility:** No information available

**Persistence and degradability:** No information available

**Bioaccumulative potential: Low** No information available

## 13. DISPOSAL CONSIDERATIONS

### Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

### Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
tert-Butyldimethylsilyl Chloride	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN2925  
**Proper Shipping Name:** Flammable solids, corrosive, organic, n.o.s.  
**Hazard Class:** 4.1  
**Packing Group:** II  
**Subsidiary Risk:** 8  
**Marine Pollutant:** No data available  
**ERG No:** 155  
**DOT RQ (lbs):** No information available

<b>Symbol(s):</b>	G
<b>TDG (Canada)</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	8
Description:	No information available
<b>ADR</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	8
Classification Code:	No information available
Description:	No information available
CEFIC Tremcard No:	No information available
<b>IMO / IMDG</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	8
Description:	No information available
IMDG Page:	No information available
Marine Pollutant	No information available
EMS:	F-A
MFAAG:	No information available
Maximum Quantity:	No information available
<b>RID</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	4.1 + 8
Classification Code:	No information available
Description:	No information available
<b>ICAO</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	8
Description:	No information available
<b>IATA</b>	
UN-No:	UN2925
Proper Shipping Name:	Flammable solid, corrosive, organic, n.o.s.
Hazard Class:	4.1
Packing Group:	II
Subsidiary Risk:	8
ERG Code:	3C
Description:	No information available



## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>tert-Butyldimethylsilyl Chloride</i>	Present	Present	97-3-163	2-2041	Present	Present	242-042-4

### U.S. Regulations

#### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

##### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

##### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>tert-Butyldimethylsilyl Chloride</i>	Not Listed	Not Listed	Not Listed	Not Listed

### CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>tert-Butyldimethylsilyl Chloride</i>	None	None	None	None	None

### U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>tert-Butyldimethylsilyl Chloride</i>	Not Applicable	Not Applicable

### Canada

#### WHMIS hazard class:

- B4 Flammable solid
- B6 Reactive flammable material
- E Corrosive material

#### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

Components	Canada (DSL)	Canada (NDSL)
<i>tert-Butyldimethylsilyl Chloride</i>	Not Listed	Present

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting

tert-Butyldimethylsilyl Chloride	Not listed	Not listed
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## EU Classification

### R-phrase(s)

R11 - Highly flammable.  
R34 - Causes burns.  
R14 - Reacts violently with water.

### S -phrase(s)

S16 - Keep away from sources of ignition - No smoking.  
S25 - Avoid contact with eyes.  
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

F - Highly flammable.  
C - Corrosive.



## 16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1-2004 standards.

<b>Preparation Date</b>	25-Jun-2012
<b>Reason for revision:</b>	Not applicable
<b>Prepared by:</b>	Sonia Owen
<b>Literature reference:</b>	No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.