

**t-BUTYLDIPHENYLCHLOROSILANE**

Safety Data Sheet SIB1968.0

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Version: 1.1

SECTION 1: Identification**1.1. Identification**

Product name	: t-BUTYLDIPHENYLCHLOROSILANE
Product code	: SIB1968.0
Product form	: Substance
Physical state	: Liquid
Formula	: C ₁₆ H ₁₉ ClSi
Synonyms	: (1,1-DIMETHYLETHYL)DIPHENYLCHLOROSILANE; tert-BUTYLCHLORODIPHENYLSILANE
Chemical family	: ORGANOCHLOROSILANE

1.2. Recommended use and restrictions on use

Recommended use	: Chemical intermediate
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1.3. Supplier**GELEST, INC.**

11 East Steel Road
Morrisville, PA 19067

USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com**1.4. Emergency telephone number**

Emergency number	: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)
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SECTION 2: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS US classification**

Skin corrosion/irritation Category 1B	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements**GHS US labeling**

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS US)

: P260 - Do not breathe vapors.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

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contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility..

2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : t-BUTYLDIPHENYLCHLOROSILANE
CAS-No. : 58479-61-1

Name	Product identifier	%	GHS US classification
t-Butyldiphenylchlorosilane	CAS-No.: 58479-61-1	95 – 100	Skin Corr. 1B, H314

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

First-aid measures after skin contact : Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes severe skin burns and eye damage.

Symptoms/effects after inhalation : May cause irritation to the respiratory tract. Overexposure may cause: Coughing. Headache. Nausea.

Symptoms/effects after skin contact : Causes (severe) skin burns.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : May be harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media : None known.

5.2. Specific hazards arising from the chemical

Fire hazard : Irritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to water or open flame.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.
Incompatible materials : Alcohols. Alkalis. Water.
Storage area : Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Molecular mass	: 274.87 g/mol
Color	: Straw.
Odor	: Acrid. Similar to hydrogen chloride.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: < 0 °C
Freezing point	: No data available
Boiling point	: 90 °C @ 0.015 mm Hg
Flash point	: 112 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 0.02 mm Hg @ 100°C
Relative vapor density at 20°C	: > 1
Relative density	: 1.074
Solubility	: Insoluble in water. Reacts with water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

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10.2. Chemical stability

Stable in sealed containers stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating hydrogen chloride.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Alcohols. Alkalis. Water.

10.6. Hazardous decomposition products

Hydrogen. Hydrogen chloride. Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract. Overexposure may cause: Coughing. Headache. Nausea.
Symptoms/effects after skin contact	: Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: May be harmful if swallowed.
Reason for classification	: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

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12.5. Other adverse effects




Other adverse effects	: This substance may be hazardous to the environment.
Effect on the ozone layer	: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility..
Ecological information	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA			
DOT	TDG	IMDG	IATA
14.1. UN number			
2987	Not applicable	2987	2987
14.2. Proper Shipping Name			
Chlorosilanes, corrosive, n.o.s. ((t-BUTYLDIPHENYLCHLOROSILANE))	Not applicable	CHLOROSILANES, CORROSIVE, N.O.S.	Chlorosilanes, corrosive, n.o.s.
Transport document description			
UN2987 Chlorosilanes, corrosive, n.o.s. (t-BUTYLDIPHENYLCHLOROSILANE), 8, II	Not applicable	UN 2987 CHLOROSILANES, CORROSIVE, N.O.S., 8, II	UN 2987 Chlorosilanes, corrosive, n.o.s., 8, II
14.3. Transport hazard class(es)			
8	Not applicable	8	8
	Not applicable		
14.4. Packing group			
II	Not applicable	II	II
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

DOT	
UN-No.(DOT)	: UN2987

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DOT Special Provisions (49 CFR 172.102)	: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. T14 - 6 mm Prohibited 178.275(g)(3). TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP7 - The vapor space must be purged of air by nitrogen or other means. TP13 - Self-contained breathing apparatus must be provided when this hazardous material is transported by sea. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: None
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 206
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
TDG	
Emergency Response Guide (ERG) Number	: 156
IMDG	
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P010
Tank instructions (IMDG)	: T14
Tank special provisions (IMDG)	: TP2, TP7, TP13, TP27
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES
Stowage category (IMDG)	: C
Stowage and handling (IMDG)	: SW2
Properties and observations (IMDG)	: Colourless liquids with a pungent odour. Immiscible with water. React violently with water or steam, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolve toxic gases. In the presence of moisture, highly corrosive to most metals. Cause burns to skin, eyes and mucous membranes.
IATA	
PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: 876
CAO max net quantity (IATA)	: 30L
Special provision (IATA)	: A1
ERG code (IATA)	: 8L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
t-Butyldiphenylchlorosilane	58479-61-1	Present	Active	

15.2. International regulations

CANADA

t-Butyldiphenylchlorosilane (58479-61-1)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations

t-Butyldiphenylchlorosilane (58479-61-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

t-Butyldiphenylchlorosilane (58479-61-1)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Full text of H-phrases::	
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Abbreviations and acronyms	: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.
Hazard Rating	
Health	: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability	: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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