

GHS Safety Data Sheet

SDS No. : SIR02LAEG

Date Issued : 2008/08/29

Last updated 2024/08/26

Section 1. Identification of the substance or mixture and of the supplier

Product Information

Product name: Si(OC₂H₅)₄ Silicon tetraethoxide

Product number:	Purity	Form	Size or Shape
SIR02LB	99.9999%(6N)	liquid	—
—	99.99999%(7N)~99.999999(8N)	liquid	—

Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.

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Recommended uses and restrictions on use: For research purposes

Section 2. Hazards identification

GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Acute toxicity: Not classified Skin corrosive/ irritation : Category 2 Serious eye damage/ eye irritation : Category 2 Specific target organ toxicity, single exposure : Category 1, 3 Specific target organ toxicity, repeated exposure: Category 1,2	Hazardous to the aquatic environment, - Acute toxicity : Not classified - Chronic toxicity : Not classified	Flammable liquids : Category 3 Pyrophoric liquids : Not classified

GHS Label:



Pictograms or symbols:

Warning word: DANGER

Hazard information	Description of precaution
Flammable liquid and vapour Causes skin irritation Causes serious eye irritation Causes damage to organs(blood system) May cause respiratory irritation May cause drowsiness or dizziness Causes damage to organs through prolonged or repeated exposure(respiratory organs) May cause damage to organs through prolonged or repeated exposure(kidney)	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical/ventilating/lighting/...equipment. Take precautionary measures static discharge. Wear protective gloves/protective clothing/eye protection/respiratory protection/face protection during handling. Avoid breathing dust/mist/gas/fume/vapor/spray. Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling. Take off the contaminated clothing and wash before reuse. Keep container or bottle tightly closed when not in use. Use only outdoors or in well-ventilated area. IN CASE OF FIRE: Wear protective gloves/eye protection/face protection. Use 《refer to our SDS》 to extinguish. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.



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	<p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>IF ON SKIN: Remove immediately all contaminated clothing and rinse skin with water/shower. Then wash skin with plenty of soap and water. If skin irritation occurs, get medical advice/attention.</p> <p>Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>Protect from sunlight. Store in a cool, dry and well-ventilated place. Keep container tightly closed.</p> <p>Store locked up.</p> <p>Dispose of contents/ container in accordance with local/national regulations.</p>
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Section 3. Composition / information on ingredients

Chemical or common name:	Silicon tetraethoxide
Synonyms:	ULTRATEOS® Tetraethoxysilan, Ethyl silicate, Tetraethyl orthosilicate, Orthosilicic acid ethyl ester Ethyl silicate, Silicic acid tetraethyl ester
Chemical formula:	Si(OC ₂ H ₅) ₄
Single Substance or Compound:	Single substance
Composition:	100%
CAS #:	78-10-4
RTECS#:	VV9450000
TSCA inventory :	listed
EINECS:	2010838

Section 4. First aid measures

Eye contact:	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.
Skin contact:	Remove immediately all contaminated clothing. Wipe off the product immediately by tissue or soft cloth, etc. Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.
Inhalation:	Remove the exposed person immediately and provide fresh air. Get medical attention.
Ingestion:	Rinse mouth and throat with water. Get medical attention immediately.

Section5. Fire fighting measures

Extinguishing media:	Carbon dioxide, Dry chemical powder, dry sand or alcohol resistance foam. DO NOT use a direct water stream.
Fire fighting:	Flammable material. Remove containers to safe place if possible. Use water spray to Cool down nearby structures and containers. In case of fire, may liberate toxic gases/ fume. Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Section 6. Accidental release measures

Personal Precautions:	Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts/mist.
Environmental hazard precautions:	Shut off leak if without risk. Prevent flow out to river, etc. so as not to badly affect.

Method for containment and cleaning up:

Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
Wear disposable coveralls and discard them after use.
Remove all sources of ignition.
Avoid unnecessary contacts with spills.
Indoor leakage: Ventilate as much as possible until the cleaning is completed.
Outdoor leakage: Work from the windward and evacuate the leeward crowd.
Absorb or cover with vermiculite or other suitable absorbent, and dispose of DOT-approved waste containers as much as possible.
Carefully wash spill site with plenty of water after material pick up.

Section 7. Handling and storage**Precautions to be taken in handling:**

Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.
Avoid prolonged or repeated exposure.
Handle the material in a dry inert gas atmosphere, utilizing glove bag or glove box.
Keep away from moisture when handling.
Keep container or bottle tightly closed when not in use.

Precautions to be taken in storage:

General precautions: Store the material in a sealed container.
Store in a cool, dry, well ventilated and dark place away from incompatible materials.
Air and moisture sensitive. Light sensitive.
Keep away from heat, sparks and naked flame.
Electrically ground all equipment when handling this material and use only non-sparking tools.

Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH(2024) : TLV-TWA 10 mg/m³
OSHA(2006) : PEL-TWA 100 ppm, 850 mg/m³
Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.
Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, impervious gloves, protective wear, protective boots etc.

Section 9. Physical and chemical properties

Color and Form: Colorless liquid, with specific odour.
Chemical formula: Si(OC₂H₅)₄
Formula weight: 208.3
Melting point: -82.5 °C
Boiling point: 168.8 °C
Vapor pressure: 200Pa(20°C)
Vapor Density: 7.2 (Air=1)
Specific gravity: 0.933 g/cm³ (20°C)
Solubility: Water; Decomposes
Miscible in alcohol.
Flammability: Flammable substance
Flash point: 56.3°C(Tag Closed Cup)



Auto-ignition temperature: 248°C
 Explosive limits: 1.3-23vol% in air
 Oxidation: None

Section10. Stability and reactivity

Stability: Stable in closed container under inert gas.
 Stable in an inert gas under room temperature.
 Material decomposes slowly in contact with water.

Reactivity

Condition to avoid: Heat, water and moisture.
 Incompatibility: Strong oxidizing agent, strong acid.

Section11. Toxicological information

Acute toxicity: GHS : Not classified
 (Oral) Rat LD₅₀ > 2000 mg/kg(SIDS(2010)etc.)
 (Dermal) Rabbit LD₅₀ = 5859 mg/kg(PATTY(2012))
 (Inhalation) Rat LC₅₀ > 5.03 mg/L(SIDS(2010))

Skin corrosive / irritation: GHS : Category 2 ; Causes skin irritation
 SIDS(2010)

Serious eye damage / irritation: GHS : Category 2 ; Causes serious eye irritation

Respiratory sensitization: GHS : No data available

Skin sensitization: GHS : No data available

Germ cell mutagenicity: GHS : No data available

Carcinogenicity: GHS : No data available

Reproductive toxicity: GHS : No data available

Specific target organ toxicity

- single exposure: GHS : Category 1 ; Causes damage to organs(blood system)
 Category 3 ; May cause respiratory irritation
 Category 3 ; May cause drowsiness or dizziness
 SIDS(2010)etc.
- repeated exposure: GHS : Category 1 ; Causes damage to organs (respiratory organs)
 through prolonged or repeated exposure
 Category 2 ; May cause damage to organs (kidney) through
 prolonged or repeated exposure
 SIDS(2010)etc.

Aspiration hazard: GHS : No data available

Section12. Ecological information

Ecotoxicity:

Hazardous to the aquatic environment

- acute toxicity: GHS : Not classified
 Pseudokirchneriella subcapitata
 ErC₅₀(72h) > 100 mg/L(SIDS(2008))
 Daphnia magna EC₅₀(48h) > 75 mg/L(SIDS(2008))
 Oryzias latipes LC₅₀(96h) = 245 mg/L(SIDS(2008))
- chronic toxicity: GHS : Not classified
 Pseudokirchneriella subcapitata
 NOEC(72h) = 100 mg/L(SIDS(2008))

Hazardous to the ozone layer: GHS : No data available
 No Freon or Halon



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Fish toxicity:	See above
Degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available

Section 13. Disposal considerations

Disposal method: User of the product should contract with the local government or licensed 'Industrial Waste Haulers' for disposal of waste.

Section 14. Transport information

UN number:	1292
IATA shipping name:	TETRAETHYL SILICATE
IATA hazard class:	Class 3 (FLAMMABLE LIQUID)
IATA packing group:	III
HS code:	2920.90
Marine pollution:	None

Section 15. Regulatory information

TSCA inventory: Listed.

Please refer to any other local / national measures that may be relevant.

Section 16. Other information

This SDS is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

The information herein is based on the references we could obtained and the present state of our knowledge, however, this SDS does not always cover all information about the product.

Some new information or amendments may be added afterwards.

Prior to use, please investigate the laws and regulations of the organization, area and country where the product is to be used. The information is intended to ordinary usage, in case of special handling, sufficient care should be taken.

