

GHS Safety Data Sheet

SDS No. : SIR02LAEG

Date Issued: 2008/08/29

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Section 1. Identification of the substance or mixture and of the supplier**1.1 Product Information**Product name: Si(OC₂H₅)₄ Silicon tetraethoxide

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

1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.

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Section 2. Hazards identification**GHS Classification**

Health Hazards	Environmental Hazards	Physical Hazards
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: F, C, W



Pictograms or symbols

Warning word: DANGER

Hazard information

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
Cause damage to organs (Respiratory organs) through prolonged or repeated exposure
May cause damage to organs (Kidneys) through prolonged or repeated exposure

Description of precaution

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 mist/vapors/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: Use <Carbon dioxide, Dry chemical powder, water spray, fog or alcohol-resistant form.> for extinction. DO NOT use a direct water stream.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 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.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Protect from sunlight. Store in a cool, dry and well-ventilated place. Keep container tightly closed.
 Store locked up.
 Dispose of contents/ container in accordance with local/national regulations.

Additional hazard information :

Contact with water liberates flammable organic vapor.

With respect to additional hazard information, see Section 11.

Section 3. Composition / information on ingredients

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

Section 4. First aid measures

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

Section 5. 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.
Explosion hazards:	Heating may cause an explosion.

Section 6. Accidental release measures

Personal Precaution:	Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its mist/ fume / vapors.
Environmental hazard precaution:	Shut off leak if without risk. Prevent flow out to river, etc. so as not to badly affect.
Methods for containment and cleaning up:	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: 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.
 Avoid prolonged or repeated exposure.
 Handling worker wears suitable protective clothing.
 Keep away from heat, sparks and naked flame.
 Electrically ground all equipment when handling this material.

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.
 Keep away from any heat, sparks, and flames.

Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH(2013) Ethyl silicate TLV-TWA = 10 ppm
 OSHA(2006) Ethyl silicate 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.

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:

Density: 0.9320g/cm³ (20°C)

Partition coefficient(n-octanol/water):

Solubility(Water): Water; Decomposes
 (Dissoluble): Dissoluble: Miscible in alcohol.

Flammability: Flammable substance

Flash point: None

Autoignition Temperature

Explosion Level (Lower-Upper)

Oxidation: None

Section 10. Stability and reactivity

Stability: Stable in an inert gas atmosphere under room temperature.
 Decomposed by moisture in the air.

Reactivity

Incompatibility: Strong oxidizing agents, strong acids, bases

Conditions to avoid: Heat, water and moisture.

Hazard decomposition products: Carbon oxides, silicon oxides, and toxic fumes.

Section 11. Toxicological information

Acute toxicity(Oral) :	GHS : Not classified.; Falls below the lowest level. Rat LD ₅₀ > 2000 mg/kg
Acute toxicity(Dermal) :	GHS : Not classified.; Falls below the lowest level. Rabbit LD ₅₀ = 5859 mg/kg
Acute toxicity(Inhalation-mists) :	GHS : Not classified.; Falls below the lowest level. Rat LC ₅₀ > 5.03 mg/L
Skin corrosive / irritation:	GHS : Category 2 ; Causes skin irritation
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) GHS : Category 3 ; May cause respiratory irritation GHS : Category 3 ; May cause drowsiness or dizziness
– repeated exposure:	GHS : Category 1 ; Causes damage to organs(Respiratory organs) through prolonged or repeated exposure GHS : Category 2;May cause damage to organs(Kidneys) through prolonged or repeated exposure
Aspiration hazard:	GHS : No data available

Section 12. Ecological information

Ecotoxicity:	
Hazards to the aquatic environme	
– acute toxicity:	GHS : Not classified.; Falls below the lowest level. Algal(Pseudokirchneriella subcapitata) ErC ₅₀ (72h) > 100 mg/L (SIDS(2008)) Crustacea(daphna magna) EC ₅₀ (48h) > 75 mg/L (SIDS(2008)) Fish(Oryzias latipes) LC ₀ (96h) = 245 mg/L (SIDS(2008))
– chronic toxicity:	GHS : Not classified.; Falls below the lowest level.
Hazrdous the ozone layer:	GHS : No data available No Freon or Halon
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.
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Section 14. Transport information

UN number:	1292
IATA shipping name:	Tetraethyl silicate
IATA classification:	Hazardous Class 3 (Flammable liquids)
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

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.