

SAFETY DATA SHEET

1. Chemical Product and Company Identification

ProductName Si(OC2H5)4 (Liquid,Code #:SIR02LB)

Reference NO. SIR02LAG-002

Creation Date 2026/04/20

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Company information Name : Kojundo Chemical Laboratory Co.,Ltd.
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Product Use For research purposes

Restriction of use Seek expert judgment when using the product for applications other than those recommended

2. Hazards identification

[GHS CLASSIFICATION]

PHYSICAL HAZARDS

Flammable Liquids : Category3

HEALTH HAZARDS

Skin corrosion/irritation : Category2

Serious eye damage/Eye Irritation : Category2

Specific target organ toxicity(single exposure) : Category1(Blood),Category3(Respiratory tract irritation,Narcotic effects)

Specific target organ toxicity(repeated exposure) : Category1(Respiratory tract),Category2(Kidney)

ENVIRONMENTAL HAZARDS

Not Classification criteria.

[GHS LABEL ELEMENTS]

Pictogram :



Signal Word : Danger

Hazard Statement : Flammable liquid and vapour(H226)
 : Causes skin irritation(H315)
 : Causes serious eye irritation(H319)
 : May cause respiratory irritation
 : May cause drowsiness or dizziness(H335+H336)
 : Causes damage to organs (Blood)(H370)
 : Causes damage to organs (Respiratory tract)(H372)
 : May cause damage to organs (Kidney)(H373)

Precautionary Statement

Safety measures : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.(P210)

- : Keep container tightly closed.(P233)
 - : Ground and bond container and receiving equipment.(P240)
 - : Use explosion-proof electrical/ventilating/lighting equipment.(P241)
 - : Use non-sparking tools.(P242)
 - : Take action to prevent static discharges.(P243)
 - : Do not breathe dust/fume/gas/mist/vapours/spray.(P260)
 - : Avoid breathing dust/fume/gas/mist/vapours/spray.(P261)
 - : Wash the competent authority to specify parts of the body to be washed after handling. thoroughly after handling.(P264)
 - : Do not eat, drink or smoke when using this product.(P270)
 - : Use only outdoors or in a well-ventilated area.(P271)
 - : Wear protective gloves/protective clothing/eye protection/face protection.(P280)
- First aid measures :
- : Call a POISON CENTER/doctor if you feel unwell.(P312)
 - : Get medical advice/attention if you feel unwell.(P314)
 - : Specific treatment.(P321)
 - : IF ON SKIN: Wash with plenty of water(P302+P352)
 - : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.(P303+P361+P353)
 - : IF INHALED: Remove person to fresh air and keep comfortable for breathing.(P304+P340)
 - : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.(P305+P351+P338)
 - : IF exposed or concerned: Call a POISON CENTER/doctor(P308+P311)
 - : If skin irritation occurs: Get medical advice/attention.(P332+P313)
 - : If eye irritation persists: Get medical advice/attention.(P337+P313)
 - : Take off contaminated clothing and wash it before reuse.(P362+P364)
 - : In case of fire: Use appropriate media to extinguish.(P370+P378)
- Storage :
- : Store locked up.(P405)
 - : Store in a well-ventilated place. Keep container tightly closed.(P403+P233)
 - : Store in a well-ventilated place. Keep cool.(P403+P235)
- Disposal :
- : Dispose of contents/container in accordance with local/regional/national/international regulation.(P501)

3. Composition/information on ingredients

Classification of the substance or mixture : Substance
 Chemical or generic name : Silicon tetraethoxide

Chemical name	Concentration(%)	CAS RN®
Tetraethyl orthosilicate	100.00	78-10-4

4. First aid measures

Inhalation : Remove the exposed person immediately and provide fresh air. Get medical attention.

Skin contact	: Promptly flush contaminated skin with soap or mild detergent and water. Contact Dermatologist if irritation continues.
Eye contact	: Rinse cautiously with water for 15 minutes.Get medical attention from an ophthalmologist. When washing your eyes, hold your eyelids open with your fingers to allow water to reach every corner of your eyeballs and eyelids.
Ingestion	: Rinse mouth and throat with water. Get medical attention immediately.
Necessary precautions for protection of person performing first aid measures	: Rescue workers wear appropriate eye and skin protection equipment according to the situation.
Special precautions for doctors	: The doctor should carry out treatment that corresponds to the patient's symptoms.

5. Fire fighting measures

Suitable extinguishing media	: Powder, Carbon dioxide, Dry sand, Water spray. : Powder, Carbon dioxide, Dry sand, Water spray, Alcohol resistance foam
Unsuitable extinguishing media	: Straight discharge (water) : Water foam : If there are overlapping items between “Suitable extinguishing media” and “Unsuitable extinguishing media” , the use of that extinguishing media is prohibited.
Special hazards arising from the substance or mixture	: Danger to generate irritating, corrosive and toxic gases / fumes during fire. : It undergoes hydrolysis and generates alcohol when it comes into contact with water. : Heating may cause an explosion.
Special protective equipment and precautions for fire-fighters	: Wear appropriate respiratory air and the protective clothing (heat resistance).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Remove all ignition sources. : Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts. Indoor leakage: Ventilate as much as possible until the cleaning is completed. Outdoor leakage: Work from the windward and evacuate the leeward crowd.
Environmental precautions	: Prevent flow out to river, etc. so as not to badly affect.
Methods and material for containment and cleaning up	: Shut off leak if without risk. Avoid unnecessary contacts with spills. : 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.
Measures to prevent secondary disasters	: Prevent leakage into sewer, rivers and etc., and take measures to prevent environmental pollution.

7. Handling and storage

Handling	
Technical measures	: It decomposes when it reacts with moisture and oxygen in the atmosphere, so it should be handled in an inert atmosphere.

Precautions for safe handling	: 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. Make the electrical equipment explosion-proof.
Avoid contact	: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen. Avoid prolonged or repeated exposure.
Hygiene measures	: Do not eat, drink or smoke when using this product. : Wash hands thoroughly after handling.
Storage	
Safe storage conditions	: The container is filled with an inert gas(N ₂ ,Ar,He) atmosphere and sealed. : 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, direct sunlight, sparks, and flames. : Keep away from incompatible materials. : Keep away from moisture and maintain the state before opening (such as storing in inert gas or in mineral oil).
Safe container packaging materials	: No information available

8. Exposure controls / Personal protection

Control parameters

Chemical name	ACGIH	OSHA
Tetraethyl orthosilicate	TWA:10ppm TWA:85mg/m ³	TWA:100ppm TWA:850mg/m ³

Equipment	: Install the appropriate general ventilation equipment, local exhaust ventilation in the workplace.
Personal protection	
Respiratory protection	: Wear appropriate NIOSH/MSHA-approved respirator such as a gas mask with a filter (for organic gases).
Hand protection	: Wear appropriate NIOSH/MSHA-approved impervious gloves.
Eye and face protection	: Wear appropriate NIOSH/MSHA-approved safety goggles.
Skin and body protection	: Wear appropriate NIOSH/MSHA-approved impervious protective wear, protective boots.
Special precautions	: Regularly check your protective gear. : The notes for the table are as follows. D: Dust, M: Mist, F: Fumes, I: Inhalable particles, R: Respirable particles, IFV: Inhalable particles and vapors, T: Total dust, V: Vapors, C: Ceiling limit

9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odour	: Characteristic odor
Melting point/Freezing point	: -82.5°C
Boiling point, initial boiling point and boiling range	: 168.8°C
Flammability	: Combustible
Range of explosion (lower bound - upper bound)	: 1.3~23vol%
Flash point	: 56.3°C(Tag Closed Cup)

Autoignition temperature	: 248°C
Decomposition temperature	: No information available
pH	: No information available
Kinematic viscosity	: No information available
Solubility	: Gradual hydrolysis(Mixable with alcohol)
Partition coefficient (n-octanol/water)	: No information available
Vapor pressure	: 200Pa(20°C)
Density/Specific gravity	: 0.933g/cm ³ (20°C)
Relative vapor density	: 7.2
Particle characteristics	: No information available
Other	: F.W. : 208.3 Oxidizing : None

10. Stability and reactivity

Reactivity	: Decomposes by reacting with moisture in the atmosphere.
Chemical stability	: Stable in closed container under dry inert gas (at room temperature).
Possibility of hazardous reactions	: No information available
Conditions to avoid	: Keep away from direct sunlight. Store in a cool, dark place. : High temperature, heat, ignition source. : Humidity, moisture.
Incompatible materials	: Water : Oxygen, oxidizing agents, acids
Hazardous decomposition products	: No information available

11. Toxicological information

Acute toxicity(oral)	No information available
Acute toxicity(dermal)	No information available
Acute toxicity(inhalation:gases)	No information available
Acute toxicity(inhalation:vapours)	No information available
Acute toxicity(inhalation:dusts and mists)	No information available
Skin corrosion/Skin irritation	Tetraethyl orthosilicate : Category2
Serious eye damage/Eye Irritation	Tetraethyl orthosilicate : Category2
Respiratory sensitizer	No information available
Skin sensitizer	No information available
Germ cell mutagenicity	No information available
Carcinogenicity	No information available

Toxic to reproduction/Effects on or via lactation

No information available

Specific target organ toxicity(single exposure)

Tetraethyl orthosilicate : Category1 (Blood), Category3 (Respiratory tract irritation, Narcotic effects)

Specific target organ toxicity(repeated exposure)

Tetraethyl orthosilicate : Category1 (Respiratory tract), Category2 (Kidney)

Aspiration hazard

No information available

12. Ecological information

Hazard to the aquatic environment (acute)

No information available

Hazard to the aquatic environment (chronic)

No information available

Hazardous to the ozone layer

No information available

Ecotoxicity/Fish toxicity

Oryzias latipes LC50(96h) = 245 mg/L (SIDS, 2008)(Tetraethyl orthosilicate)

Ecotoxicity/ Invertebrate toxicity

Daphnia magna EC50(48h) > 75 mg/L (SIDS, 2008)(Tetraethyl orthosilicate)

Ecotoxicity/ Algal toxicity

Pseudokirchneriella subcapitata ErC50(72h) > 100 mg/L (SIDS, 2008)(Tetraethyl orthosilicate)

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility in soil

No information available

13. Disposal considerations

Remained waste

: Discard in accordance with the standards of the local government and relevant legislation.

A polluted container and packing

: When disposing of empty containers, empty containers are processed in accordance with the standards of the local government as well as the related laws and regulations and waste disposal method after contents are completely removed.

14. Transport information

UN number

: 1292

Guideline Number

: 129

Shipping name

: TETRAETHYL SILICATE

UN Class

: Class3 Flammable liquids

Packing group

: III

Subsidiary risk(s)

: -

MARINE POLLUTANT

: Not applicable

Transport in bulk according to MARPOL 73/78, Annex II, and the IBC code

: Not applicable

- Special safety measures for transport or means of transport : Follow "7. Handling and storage"
: Check no leak of container, handle without overturning, falling and damaging, then reliably prevent from cargo shift.
- Domestic regulations
- Ground transport : Follow the transportation method specified in the Fire Service Law and the Industrial Safety and Health Law.
 - Marine transport : Follow the transportation method specified in the Ship Safety Law.
 - Air transport : Follow the transportation method specified in the Aviation Law.

15. Regulatory information

Follow relevant national and local regulations.

16. Other information

This " Safety Data Sheet(SDS)" is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

Since not all materials and literature have been investigated, information may be omitted, and changes may occur in the content due to the discovery of new findings or corrections of previous theories.

The information contained herein is based on information in our possession, but we do not guarantee the completeness of the information.

It is subject to revision based on changes in laws and regulations and new findings.

When using this information for important decisions, we recommend that you carefully review the source of the information or verify it through testing.

Values of ingredients, content, physicochemical properties, etc., are not quality assurance values.

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.

Special Notes (displayed only if applicable)