



Unilong Industry Co., Ltd

Add: No.2000 Shunhua Rd, High-Tech Zone , Jinan City, Shandong Province, China

Chemical Safety Data Sheet

1. Product and Company Identification

1.1 Product name: Tris(trimethylsilyl)phosphate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, additive for Lithium Ion Battery Electrolyte

1.3 Details of the supplier of the safety data sheet:

Company Unilong Industry Co.,Ltd.

Address No.2000 Shunhua Rd, High-Tech Zone, Jinan City, Shandong Province, China

Telephone +86 0531 55690071

2. Hazard identification

2. Hazard class and label elements of the product according to GHS (the sixth revised edition)

2.1 GHS Hazard Class:

Flammable liquids :Category 3

Acute Toxicity -Oral :Category 5

Skin corrosion/irritation :Category 1

Serious eye damage/eye irritation : Category 1

Specific Target Organ Toxicity(Single Exposure) :Category 3

2.2 GHS Label Elements:

Pictograms:



Signal word:Warning

H226 Flammable liquid and vapour

H303 May be harmful if swallowed

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

2.2 Precautionary statements

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof[electrical/ventilating/lighting] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after hand ling.



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P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection hearing protection.
Response
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P370+P378 In case of fire: Use Carbon dioxide/alcohol- resitant foam/dry chemical to extinguish.
P303+P361+P353 IF ON SKIN(or hair): Take off immediately all contaminated clothing.Rinse skin with water [or shower].
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF INEYES:Rinse cautiously with water for several minutes.Remove contact lenses,if present and easy to do.Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P312 Call a POISON CENTER/doctor if you feel unwell.
Storage
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
other hazards:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/Information on ingredients

3.1 Substances

Chemical Name : Tris(trimethylsilyl)phosphate

Formula : $\text{CO}_9\text{H}_{27}\text{O}_4\text{PSi}_3$

Molecular Weight : 314.54 g/mol

Description of the chemical product:

Component	Concentration(weight percent,%)	CAS-NO.
Tris(trimethylsilyl)phosphate	$\geq 99.5\%$	10497-05-9

4.First aid measures

4.1. Description of first aid measures

Inhalation

Move to fresh air. If not breathing, give artificial respiration, Consult a physician.

Skin contact

Wash off with soap and plenty of water. if you feel unwell. Take victim immediately to hospital.

Eye contact

Lift the eyelids and rinse with plenty of water for at least 15 minutes, If irritation occurs and



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continues and consult a physician.

Swallowed

Do Not induce vomiting. Rinse mouth with water. Consult a physician.

Protection of First- aiders

Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. Fire fighting measures

General fire hazards

5.1 Extinguishing media

Suitable extinguishing media: Dry chemical or carbon dioxide, alcohol-resisitant foam

5.2.Special hazards arising from the substance or mixture

Cox, Oxides of phosphorus, silicon oxides.

5.3. Special protective equipment for firefighters

Wear self-contained respiratory protective device. Wear fully protective suit.

5.4 Specific methods

Not available

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

Ensure adequate ventilation. Remove all sources of ignition.

Do not touch or cross the leakage.

All equipment used during work should be grounded.

Cut off the source of leakage as much as possible. Eliminate all ignition sources.

Establish a warning zone based on the impact area of liquid flow, steam or dust diffusion, and evacuate unrelated personnel from crosswind or upwind to a safe area.

Equip corresponding types and quantities of fire equipment and emergency response equipment for leaks.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Collect leaked materials to avoid polluting the environment. Do not let product enter Discharge into the environment must be avoided drains.

6.3 Methods and material for containment

Small leakage: Collect the leaked liquid in a container that can be sealed as much as possible.

Absorb with sand, activated carbon, or other inert materials and transfer to a safe location. Do not flush into the sewer.

Massive leakage: Build embankments or dig pits for containment. Close the drainage



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pipeline.Cover with foam to inhibit evaporation.Transfer to a tank truck or dedicated collector using an explosion-proof pump for recycling or transportation to a waste disposal site for disposal.

7.Handling and storage

7.1 Precautions for safe handling

Operators should receive specialized training and strictly follow the operating procedures.

Hand ling is performed in a well ventilated place.

Avoid contact with skin and eyes.Avoid breathing vapour s.

Individual protective measures can be found in Section 8.

Keep away from heat/sparks/open flames/ hot surfaces - No smoking.

When transporting, it is necessary to load and unload gently to prevent damage to the packaging and containers.

Wash hands after use. Do not eat or drink in the workplace.

Equip corresponding types and quantities of fire equipment and emergency response equipment for leaks.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed.

Store in cool place and ventilated warehouse.

Stored away from oxidants and edible chemicals, and mixed storage should be avoided (please refer to Section 10).

Keep away from heat/open flames/ hot surfaces.

Use explosion-proof equipment.Use only non-sparking tools.

Equip corresponding types and quantities of fire equipment and emergency response equipment for leaks.

8.Exposure controls/personal protection

8.1 Control parameters

Limit Values for Exposure

Component	CAS number	PC-TWA	PC-STEL	MAC
Tris(trimethylsilyl)phosphate	10497-05-9	—	—	—

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Handling is performed in a well ventilated place.

Separate the workplace from other workplaces.

Closed operation to prevent leakage.

Provide safety showers and eye wash equipment.

8.3 Individual protection measures, such as personal protective equipment

General information Eye/face protection

Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).

Skin and body protection

Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU),USF739 or AS/NZS 2161.1 standard. Wear fire/flame resistant/retardant clothing and antistatic boots.



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Respiratory protection

If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK(EN 14387) respirator cartridges.

9.Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state Liquid

Color Colourless

Odor No data available

Odor threshold No data available

pH No data available

Melting point/freezing point No data available

Initial boiling point and boiling range 228-229°C

Flash point 55°C -closed cup

Evaporation rate No data available

Flammability (solid, gas) No data available

Upper/lower flammability or explosive limits No data available

Flammability limit - lower (%) No data available

Flammability limit - upper (%) No data available

Vapor pressure No data available

Solubility No data available

Solubility (water) No data available

Solubility (other) No data available

Partition coefficient (n-octanol/water) No data available

Auto-ignition temperature No data available

Decomposition temperature No data available

Viscosity No data available

Explosive properties No data available

Oxidizing properties No data available

Relative density 0.953g/ml at 25°C

9.2.Other information

Specific gravity Not Determined

VOC (Weight %) Not Determined

10.Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2.Chemical stability

No data available

10.3.Possibility of hazardous reactions

No data available



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10.4. Conditions to avoid

Incompatible materials, heat, flame and spark.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Other decomposition products - no data available

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

11.2 Skin corrosion/irritation

No data available

11.3 Serious eye damage/eye irritation

No data available

11.4 Respiratory or skin sensitisation

No data available

11.5 Germ cell mutagenicity

No data available

11.6 Carcinogenicity

No data available

11.7 Reproductive toxicity

No data available

11.8 Specific target organ toxicity single exposure

No data available

11.9 Specific target organ toxicity repeated exposure

No data available

11.10 Aspiration hazard

No data available

11.11 Additional Information

No data available

12. Ecological information

12.1 Toxicity

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Toxicity to microorganisms: No data available

12.2 Persistence and degradability

No data available



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12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

No data available

13. Disposal considerations

13.1 Waste Treatment Methods

Residual waste

Try to recycle and reuse as much as possible. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Return the container to the manufacturer or dispose of it in accordance with national and local regulations.

EU waste code: No data available

13.2 Disposal methods/information

Do not allow this material to drain into sewers/water supplies.

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

14. Transport Information

14.1 UN number 2920

14.2 UN proper shipping name CORROSIVELIQUID, FLAMMABLE LIQUID, N.O.S.

14.3 Transport hazard class(es) 8+3

14.4 Packaging group II

14.5 Environmental hazards No data available

14.6 Special precautions for user No data available

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of Regulation(EC) No.1907/2006.15.2

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

16. Other Information

The above information is considered correct but does not contain all of the information and should be used as a guide only. The information in this document is based on what we currently know and applies to this product to the correct safety tips.