

## SAFETY DATA SHEET

According to JIS Z 7253:2019

Issue Date 28-Jul-2025

Revision Number 2.04

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Tris(2-chloro-1-methylethyl) Phosphate
Product Code	200-13811,202-13815

Supplier	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029
Emergency telephone number	+81-6-6203-3741 / +81-3-3270-8571
Recommended uses	For research use only
Restrictions on use	Seek expert judgment when using for purposes other than those recommended.

## Section 2: HAZARDS IDENTIFICATION

## GHS classification

## Classification of the substance or mixture

## Acute toxicity - Oral

Category 4

## Reproductive Toxicity

Category 2

## Specific target organ toxicity (single exposure)

Category 2, Category 3

Category 2 central nervous system

Category 3 Narcotic effects

## Specific target organ toxicity (repeated exposure)

Category 2

Category 2 liver, thyroid gland

## Acute aquatic toxicity

Category 3

## Chronic aquatic toxicity

Category 3

## Pictograms



## Signal word

Warning

## Hazard statements

H302 - Harmful if swallowed

H361 - Suspected of damaging fertility or the unborn child

H336 - May cause drowsiness or dizziness

H402 - Harmful to aquatic life

H412 - Harmful to aquatic life with long lasting effects

H371 - May cause damage to the following organs: central nervous system

H373 - May cause damage to the following organs through prolonged or repeated exposure: liver, thyroid gland

## Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product

- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment

**Precautionary statements-(Response)**

- IF exposed or concerned: Get medical advice/attention
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth

**Precautionary statements-(Storage)**

- Store locked up
- Store in a well-ventilated place. Keep container tightly closed

**Precautionary statements-(Disposal)**

- Dispose of contents/container to an approved waste disposal plant

**Others**

**Other hazards** Not available

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Single Substance or Mixture** Substance

**Formula** C<sub>9</sub>H<sub>18</sub>Cl<sub>3</sub>O<sub>4</sub>P

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Tris(2-chloro-1-methylethyl) Phosphate	95.0	327.57	(2)-1941,(2)-2951	*	13674-84-5

**Note on ISHL No.:** \* in the table means announced chemical substances.

### Section 4: FIRST AID MEASURES

**Inhalation**

Remove to fresh air. If symptoms persist, call a physician.

**Skin contact**

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

**Ingestion**

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

**Protection of first-aiders**

Use personal protective equipment as required.

### Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder, Sand

**Unsuitable extinguishing media**

No information available

**Specific hazards arising from the chemical product**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Special extinguishing method**

No information available

**Special protective actions for fire-fighters**

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full

firefighting turnout gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

### Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

### Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

### Recovery, neutralization

No information available

### Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: HANDLING AND STORAGE

### Handling

#### Technical measures

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use with local exhaust ventilation. Use with local exhaust ventilation.

#### Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

#### Safety handling precautions

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

### Storage

#### Safe storage conditions

##### Storage conditions

Store away from sunlight in well-ventilated place at room temperature (preferably cool).  
Keep container tightly closed.

##### Safe packaging material

Glass

#### Incompatible substances

Strong oxidizing agents

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

### Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### Personal protective equipment

#### Respiratory protection

Protective mask

#### Hand protection

chemical protective gloves ( JIS T 8116 )

#### Eye protection

protective eyeglasses or chemical safety goggles (JIS T 8147)

#### Skin and body protection

Long-sleeved work clothes

### General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to

them.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Form</b>	
<b>Color</b>	Colorless - slightly yellow
<b>Turbidity</b>	clear
<b>Appearance</b>	liquid
<b>Odor</b>	Odorless
<b>Melting point/freezing point</b>	-40 °C
<b>Boiling point, initial boiling point and boiling range</b>	no data available
<b>Flammability</b>	no data available
<b>Evaporation rate:</b>	no data available
<b>Flammability (solid, gas):</b>	no data available
<b>Upper/lower flammability or explosive limits</b>	
<b>Upper:</b>	no data available
<b>Lower:</b>	no data available
<b>Flash point</b>	204 °C
<b>Auto-ignition temperature:</b>	no data available
<b>Decomposition temperature:</b>	no data available
<b>pH</b>	no data available
<b>Viscosity (coefficient of viscosity)</b>	no data available
<b>Dynamic viscosity</b>	67-70 cP ( 25°C )
<b>Solubilities</b>	Ethanol and acetone : miscible . water : practically insoluble, or insoluble .
<b>n-Octanol/water partition coefficient:(log Pow)</b>	no data available
<b>Vapour pressure</b>	no data available
<b>Specific Gravity / Relative density</b>	1.286 – 1.296 g/mL ( 20°C )
<b>Vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## Section 10: STABILITY AND REACTIVITY

### Stability

<b>Reactivity</b>	no data available
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Hazardous reactions</b>	None under normal processing
<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark
<b>Incompatible materials</b>	Strong oxidizing agents
<b>Hazardous decomposition products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Halides, Phosphorus oxide

## Section 11: TOXICOLOGICAL INFORMATION

\*NITE: National Institute of Technology and Evaluation (JAPAN)  
[https://www.chem-info.nite.go.jp/en/chem/chrip/chrip\\_search/srhInput](https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput)

### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Tris(2-chloro-1-methylethyl) Phosphate	632 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	> 5.05 mg/L ( Rat ) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

**Skin irritation/corrosion**

Chemical Name	Skin corrosion/irritation source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.

## Section 12: ECOLOGICAL INFORMATION

\*NITE: National Institute of Technology and Evaluation (JAPAN)  
[https://www.chem-info.nite.go.jp/en/chem/chrip/chrip\\_search/srhInput](https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput)

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Tris(2-chloro-1-methylethyl) Phosphate	EC50 : <i>Pseudokirchneriella subcapitata</i> 4 mg/L 96 h EC50 : <i>Desmodesmus subspicatus</i> 45 mg/L 72 h	LC50 : <i>Leuciscus idus</i> 180 mg/L 96 h LC50 : <i>Poecilia reticulata</i> 30 mg/L 96 h LC50 : <i>Brachydanio rerio</i> 56.2 mg/L 96 h LC50 : <i>Pimephales promelas</i> 51 ppm 96 h	EC50 : <i>Daphnia magna</i> 63 mg/L 48 h

**Other data**

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Tris(2-chloro-1-methylethyl) Phosphate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

**Persistence and degradability**  
**Bioaccumulative potential**

No information available  
No information available

Mobility in soil No information available  
Hazard to the ozone layer No information available

### Section 13: DISPOSAL CONSIDERATIONS

#### Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

### Section 14: TRANSPORT INFORMATION

ADR/RID Not regulated  
UN number -  
Proper shipping name:  
UN classification  
Subsidiary hazard class  
Packing group  
Marine pollutant Not applicable

IMDG Not regulated  
UN number -  
Proper shipping name:  
UN classification  
Subsidiary hazard class  
Packing group  
Marine pollutant (Sea) Not applicable  
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

IATA Not regulated  
UN number -  
Proper shipping name:  
UN classification  
Subsidiary hazard class  
Packing group  
Environmentally Hazardous Substance Not applicable

### Section 15: REGULATORY INFORMATION

#### Japanese regulations

Fire Service Act Category IV, Class IV petroleum, dangerous grade 3  
Poisonous and Deleterious Substances Control Law Not applicable  
Industrial Safety and Health Act Not applicable  
Industrial Safety and Health Act (2026~) 【2026.4.1~】 Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)  
【2026.4.1~】 Notifiable Substances (Law Art.57-2)  
Regulations for the carriage and storage of dangerous goods in ship Not applicable  
Civil Aeronautics Law Not applicable  
Pollutant Release and Transfer Register Law (2023.4.1-) Not applicable

#### Industrial Safety and Health Law

Law Name	Chemical Name in Regulation	Weight %	Scheduled enforcement date
Notifiable Substances (Law Art.57-2)	Tris(1-chloro-2-propyl) phosphate	95.0	2026/4/1

**Section 16: OTHER INFORMATION****Key literature references and sources for data etc.**

NITE: National Institute of Technology and Evaluation (JAPAN)  
[https://www.chem-info.nite.go.jp/en/chem/chrip/chrip\\_search/srhInput](https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput)  
IATA dangerous Goods Regulations  
RTECS:Registry of Toxic Effects of Chemical Substances  
Japan Industrial Safety and Health Association GHS Model SDS  
Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.  
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.  
etc

**Record of SDS revisions**

The following contents were revised. Product and company Identification.  
Composition/information on ingredients. Fire fighting measures. Exposure controls/personal protection. Toxicological information. Ecological information. Regulatory information.

**Disclaimer**

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z 7252:2019. \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**