



## Safety Data Sheet

### 1. Identification of the substance/mixture and of the company/undertaking

**Product identifier:**

Product name: Trimethyl phosphate

SDS No. : 8070E-2

**Details of the supplier of the safety data sheet**

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

### 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****HEALTH HAZARDS**

Acute toxicity (Oral): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2B

Germ cell mutagenicity: Category 1B

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 2(nervous system)

Specific target organ toxicity – repeated exposure: Category 2(nervous system; kidney)

(Note) GHS classification without description: Not classified/Classification not possible

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

Harmful if swallowed

Causes skin irritation

Causes eye irritation

May cause genetic defects

Suspected of damaging fertility or the unborn child

May cause damage to organs after single exposure(nervous system)

May cause damage to organs through prolonged or repeated exposure(nervous system; kidney)

**PRECAUTIONARY STATEMENT****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

**Response**

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

IF exposed or concerned: Call a POISON CENTER or doctor/physician.



IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth.

#### Disposal

Dispose of contents/container in accordance with local/national regulation.

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### 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Substance

Ingredient name:Trimethyl phosphate

Content (%):99(min)

Chemical formula:(CH<sub>3</sub>O)<sub>3</sub>PO

Chemicals No, Japan:2-2000

CAS No.:512-56-1

MW:140.08

ECNO:208-144-8

Note : The figures shown above are not the specifications of the product.

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### 4. First-aid measures

#### Descriptions of first-aid measures

##### General measures

Get medical attention/advice if you feel unwell.

##### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

##### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash 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.

If eye irritation persists: Get medical advice/attention.

##### IF SWALLOWED

Rinse mouth.

Call a POISON CENTER or doctor/physician if you feel unwell.

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### 5. Fire-fighting measures

#### Extinguishing media

##### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

##### Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

#### Advice for firefighters

**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

**Special protective equipment and precautions for fire-fighters**

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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**6. Accidental release measures****Personnel precautions, protective equipment and emergency procedures**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

**Environmental precautions**

Prevent spills from entering sewers, watercourses or low areas.

**Methods and materials for containment and cleaning up**

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

**Preventive measures for secondary accident**

Collect spillage.

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**7. Handling and storage****Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

**Safety Measures**

Wear protective gloves, protective clothing or face protection.

When using do not eat, drink or smoke.

**Any incompatibilities**

See "10.Stability and Reactivity"

**Advice on general occupational hygiene**

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

**Storage****Conditions for safe storage**

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

**Container and packaging materials for safe handling**

Glass

Stainless steel

Iron



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## 8. Exposure controls/personal protection

### Control parameters

### Exposure controls

#### Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures

##### Respiratory protection

Wear respiratory protection.

##### Hand protection

Wear protective gloves.

##### Eye protection

Wear eye/face protection.

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## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless to pale yellow

Odor: Practically odorless

Melting point/Freezing point: -46°C

Boiling point or initial boiling point: 197.2°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: (Trimethyl phosphate)Don't catch fire

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Dynamic viscosity: 2.23mPas(20°C)

Kinematic viscosity data is not available.

#### Solubility:

Solubility in water: 50 g/100 ml (25°C)

n-Octanol/water partition coefficient: log Pow-0.52 through -0.78

Vapor pressure: 0.11 kPa (20°C)

Density and/or relative density: 1.22

Relative vapor density (Air=1) data is not available.

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

### Reactivity

Not available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

Decomposes on burning. This produces toxic fumes including phosphorus oxides. Reacts with strong bases and strong oxidants. May explode on heating during large scale atmospheric pressure distillation. (ICSC 0686)

### Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

**Incompatible materials**

Strong bases, Strong oxidizing agents

**Hazardous decomposition products**

Carbon oxides, Phosphorus oxides

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**11. Toxicological Information****Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

rat LD50=840mg/kg (SIDS, 1996)

**Acute toxicity (Dermal)**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

rabbit LD50=2830mg/kg (PATTY 5th, 2001)

**Irritant properties****Skin corrosion/irritation**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

severe irritation (HSDB, 2003)

**Serious eye damage/irritation**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

severe irritation (HSDB, 2003)

Allergenic and sensitizing effects data is not available.

**Germ cell mutagenicity**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

cat. 1B; mouse : HSDB, 2003

Carcinogenic effects data is not available.

**Reproductive toxicity**

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

cat. 2; rat : JECDB, 2012

**STOT****STOT-single exposure**

[cat.2]

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

nervous system (HSDB, 2003)

**STOT-repeated exposure**

[cat.2]

[GHS Cat. Japan, base data]

(Trimethyl phosphate)

nervous system; kidney (MHLW report, Access on May. 2012)

Aspiration hazard data is not available.



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## 12. Ecological Information

### Ecotoxicity

Ecotoxicity data is not available.

### Water solubility

(Trimethyl phosphate)

50 g/100 ml (25°C) (ICSC, 2004)

### Persistence and degradability

(Trimethyl phosphate)

BOD\_Degradation : 0% (Registered chemicals data check & review 1984)

### Bioaccumulative potential

(Trimethyl phosphate)

log Pow=-0.52 through -0.78 (ICSC, 2004)

### Mobility in soil

Mobility in soil data is not available.

### Other adverse effects

Ozone depleting chemical data is not available.

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## 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

### Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

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## 14. Transport Information

Not applicable to UN No., UN CLASS

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

### Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Germ cell mutagenicity: cat.1, 1A, 1B

Trimethyl phosphate

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## 15. Regulatory Information

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

### US Federal Regulations

Chemicals listed in TSCA Inventory

Trimethyl phosphate

### Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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## 16. Other information

### GHS classification and labelling

Acute Tox. 4: H302 Harmful if swallowed

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2B: H320 Causes eye irritation

Muta. 1B: H340 May cause genetic defects



Repr. 2: H361 Suspected of damaging fertility or the unborn child

STOT SE 2: H371 May cause damage to organs after single exposure

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

#### Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

#### General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).