

Classified as hazardous in accordance with the criteria of EPA New Zealand

Section 1 - Identification

Product Identifier

| | |
|-----------------------------|--------------------------------------|
| Product Name | <u>Methyl phosphorodichloridite</u> |
| CAS No | 3279-26-3 |
| Molecular Formula | C H ₃ Cl ₂ O P |
| Molecular Weight | 132.91 |
| Recommended Use | Laboratory chemicals. |
| Uses advised against | No Information available |

| | |
|--------------------------------|---|
| Product Code | L04588 |
| Address | Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand |
| Emergency Tel. | CHEMTREC® 09 980 6780 or +64 9 980 6780 |
| Telephone / Fax Numbers | Tel: 09 980 6700 Fax: 09 980 6788 |
| E-mail address | <u>ANZinfo@thermofisher.com</u> |

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

GHS Classification

Physical hazards

Flammable liquids

Category 3

Health hazards

Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation

Category 1 B
Category 1

Environmental hazards

Based on available data, the classification criteria are not met

Label Elements

**Signal Word****Danger****Hazard Statements**

H226 - Flammable liquid and vapor

H314 - Causes severe skin burns and eye damage

Precautionary Statements**Prevention**

P240 - Ground and bond container and receiving equipment

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P233 - Keep container tightly closed

P241 - Use explosion-proof electrical/ ventilating/ lighting equipment

P242 - Use non-sparking tools

P243 - Take action to prevent static discharges

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P363 - Wash contaminated clothing before reuse

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

Reacts violently with water

Contact with water liberates toxic gas

Section 3 - Composition and Information on Ingredients

| Component | CAS No | Weight % |
|--------------------------|-----------|----------|
| Methyl dichlorophosphite | 3279-26-3 | 98 |

Section 4 - First Aid Measures

Description of first aid measures**New Zealand Emergency Tel.**

CHEMTREC®

09 980 6780 or +64 9 980 6780

Inhalation

Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.

Eye Contact

Immediate medical attention is required. Rinse immediately with plenty of water, also under

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| | the eyelids, for at least 15 minutes. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. |
| Ingestion | Do NOT induce vomiting. Call a physician immediately. |
| Self-Protection of the First Aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |
| First Aid Facilities | Eyewash, safety shower and washroom. |
| Most important symptoms and effects | Difficulty in breathing. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| Notes to Physician | Treat symptomatically. |

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Carbon dioxide (CO₂). Dry chemical. Chemical foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Water.

Specific Hazards Arising from the Chemical

Flammable. Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Oxides of phosphorus, Hydrogen chloride gas.

Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Emergency procedures

Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions

See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Wear self-contained breathing apparatus and protective suit. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not let this chemical enter the environment.

Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling**Advice on safe handling**

Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities**Storage Conditions**

Keep in a dry place. Keep container tightly closed. Keep away from heat, sparks and flame. Corrosives area. Flammables area. Store under an inert atmosphere. Keep refrigerated. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials

Strong oxidizing agents. Strong bases.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

AS 1940-2004 - The storage and handling of flammable and combustible liquids

Section 8 - Exposure Controls and Personal Protection

Control parameters**Exposure limits**

The product does not contain any hazardous materials with occupational exposure limits established.

Biological limit values

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

Appropriate engineering controls**Engineering Measures**

Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Individual protection measures, such as personal protective equipment**Eye Protection**

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | AUS/NZ Standard | Glove comments |
|---|--------------------------------------|-----------------|-----------------|-----------------------|
| Nitrile rubber, Neoprene, Natural rubber, PVC. | See manufacturers recommendations | - | AS/NZS 2161 | (minimum requirement) |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

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| Skin and body protection | Wear appropriate protective gloves and clothing to prevent skin exposure |
| Respiratory Protection | Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices |
| Recommended Filter type: | Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ equivalent) |
| Recommended half mask:- | Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent) When RPE is used a face piece Fit Test should be conducted |

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

| | | |
|--|--------------------------|--|
| Physical State | Liquid | |
| Appearance | Colorless | |
| Odor | No information available | |
| Odor Threshold | No data available | |
| pH | No information available | |
| Melting Point/Range | -91 °C / -131.8 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 93 °C / 199.4 °F | @ 760 mmHg |
| Flammability (liquid) | Flammable | On basis of test data |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | No data available | |
| Flash Point | 25 °C / 77 °F | Method - No information available |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| Viscosity | No data available | |
| Water Solubility | reacts | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Vapor Pressure | No data available | |
| Density / Specific Gravity | 1.400 | |
| Bulk Density | Not applicable | Liquid |
| Vapor Density | 4.58 | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) | |

Other information

| | |
|-----------------------------|--|
| Molecular Formula | C H3 Cl2 O P |
| Molecular Weight | 132.91 |
| Explosive Properties | explosive air/vapour mixtures possible |

Section 10 - Stability and Reactivity

| | |
|---|--------------------------|
| Reactivity | Yes |
| Stability | Moisture sensitive. |
| Sensitivity to Mechanical Impact | No information available |

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| Sensitivity to Static Discharge | No information available |
| Hazardous Polymerization | No information available. |
| Hazardous Reactions | No information available. |
| Conditions to Avoid | Keep away from open flames, hot surfaces and sources of ignition, Incompatible products, Exposure to moist air or water. |
| Incompatible Materials | Strong oxidizing agents, Strong bases. |
| Hazardous Decomposition Products | Carbon monoxide (CO). Carbon dioxide (CO ₂). Oxides of phosphorus. Hydrogen chloride gas. |

Section 11 - Toxicological Information

Acute Effects

Information on likely routes of exposure

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|----------------------------|---|
| Product Information | No acute toxicity information is available for this product |
| Inhalation | Not an expected route of exposure. |
| Eyes | Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. |
| Skin | Avoid contact with skin. Skin Corrosion/Irritation. Causes burns. |
| Ingestion | May be harmful if swallowed. |

Numerical measures of toxicity

| | |
|---|--|
| (a) acute toxicity; | |
| Oral | No data available |
| Dermal | No data available |
| Inhalation | No data available |
| (b) skin corrosion/irritation; | Category 1 B |
| (c) serious eye damage/irritation; | Category 1 |
| (d) respiratory or skin sensitization; | |
| Respiratory | No data available |
| Skin | No data available |
| (e) germ cell mutagenicity; | No data available |
| (f) carcinogenicity; | No data available There are no known carcinogenic chemicals in this product |
| (g) reproductive toxicity; | No data available |
| (h) STOT-single exposure; | No data available |

| | |
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| (i) STOT-repeated exposure; | No data available |
| Target Organs | No information available. |
| (j) aspiration hazard; | No data available |
| Other Adverse Effects | The toxicological properties have not been fully investigated. |

Symptoms / effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Section 12 - Ecological Information

Ecotoxicity

Aquatic ecotoxicity Do not empty into drains.

Terrestrial ecotoxicity There is no data for this product

Persistence and Degradability

Persistence Soluble in water, Persistence is unlikely, based on information available.

Bioaccumulative Potential Bioaccumulation is unlikely

Mobility The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

Other adverse effects

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues/Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations. Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Section 14 - Transport Information

NZS 5433:2020

| | |
|-------------------------|-------------------------------------|
| UN-No | UN2920 |
| Proper Shipping Name | Corrosive liquid, flammable, n.o.s. |
| Technical Shipping Name | Methyl dichlorophosphite |
| Hazard Class | 8 |
| Subsidiary Hazard Class | 3 |
| Packing Group | II |

IATA

| | |
|-------------------------|-------------------------------------|
| UN-No | UN2920 |
| Proper Shipping Name | Corrosive liquid, flammable, n.o.s. |
| Technical Shipping Name | Methyl dichlorophosphite |
| Hazard Class | 8 |
| Subsidiary Hazard Class | 3 |
| Packing Group | II |

IMDG/IMO

| | |
|-------------------------|-------------------------------------|
| UN-No | UN2920 |
| Proper Shipping Name | Corrosive liquid, flammable, n.o.s. |
| Technical Shipping Name | Methyl dichlorophosphite |
| Hazard Class | 8 |
| Subsidiary Hazard Class | 3 |
| Packing Group | II |

Environmental hazards No hazards identified

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable, packaged goods

Special Precautions No special precautions required. Please refer to the applicable dangerous goods regulations for additional information.

Additional information None known

Section 15 - Regulatory Information

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

National Regulations

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

International Regulations

| | |
|---|--|
| Ozone Depletion Potential | This product does not contain any known or suspected substance |
| Persistent Organic Pollutant | This product does not contain any known or suspected substance |
| Rotterdam Convention (PIC) | Not applicable |
| Authorisation/Restrictions according to EU REACH | Not applicable |

International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | NZIoC | AICS | EINECS | ELINCS | NLP | KECL | IECSC | TCSI |
|--------------------------|-----------|-------|------|-----------|--------|-----|------|-------|------|
| Methyl dichlorophosphite | 3279-26-3 | X | - | 221-915-3 | - | - | - | - | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | PICCS | ISHL | ENCS |
|--------------------------|-----------|------|---|-----|------|-------|------|------|
| Methyl dichlorophosphite | 3279-26-3 | - | - | - | - | - | - | - |

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Section 16 - Other Information

This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

Legend

NZIoC - New Zealand Inventory of Chemicals

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

NZS 5433:2020 - Transport of Dangerous Goods on Land

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

WEL - Workplace Exposure Limit

DNEL - Derived No Effect Level

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

VOC - (Volatile Organic Compound)

AICS - Australian Inventory of Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

ACGIH - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

OECD - Organisation for Economic Co-operation and Development

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

LC50 - Lethal Concentration 50%

ATE - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment

NOEC - No Observed Effect Concentration

BCF - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

| | |
|-------------------------|----------------|
| Revision Date | 15-Mar-2023 |
| Revision Summary | Not applicable |

Disclaimer

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, use, processing, storage, transportation, disposal and release 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

End of Safety Data Sheet