

Safety Data Sheet METAPHOSPHORIC ACID

SDS no. VRYBTGYM • Version 1.0 • Date of issue: 2024-03-14

SECTION 1: Identification

GHS Product identifier

Product name METAPHOSPHORIC ACID

Other means of identification

METAPHOSPHORIC ACID LR ML075

Phosphoric acid, meta-

Phosphoric acid, glacial

Recommended use of the chemical and restrictions on use

Phosphorylating agent, dehydrating agent, dental cements, reagent for proteins and glucose and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following:

Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

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- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage

H318

Causes serious eye damage

Precautionary statement(s)

P260

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

P264

Wash hands thoroughly after handling.

P280

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

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].

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/doctor/physician

P321

Specific treatment (see ... on this label).

P363

Wash contaminated clothing before reuse.

P405

Store locked up.

P501

Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 79.98

Components

Component	CAS no.	Concentration
Metaphosphoric acid (EC no.: 233-750-4)	37267-86-0	60 % (weight)
CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1B. HAZARDS: H314 - Causes severe skin burns and eye damage.		
Sodium hexametaphosphate (EC no.: 233-343-1)	68915-31-1	40 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

First Aid Facilities: Maintain eyewash fountain in work area.

If inhaled	If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek medical advice.

Most important symptoms/effects, acute and delayed

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

Indication of immediate medical attention and special treatment needed, if necessary

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use dry chemical, CO₂ or water spray.

Large fire: Use dry chemical, water spray, fog or foam - Do NOT use water jets.

Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical

Hazards from Combustion Products: May emit toxic fumes in fire (phosphoric oxides).

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Fully encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation and avoid breathing dust. Avoid inhalation, contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.

Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid generation or accumulation of dusts. Avoid prolonged or repeated contact with skin, eyes and clothing. Use in well ventilated areas

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away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment. Wash hands and face thoroughly after working with material.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed and in a cool, well-ventilated place. Keep away from direct sunlight and other sources of heat or ignition.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Colourless, highly deliquescent, glassy mass.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	200 - 250 °C
Boiling point or initial boiling point and boiling range	~ 600 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.

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Oxidizing properties
pH
Kinematic viscosity
Solubility

No data available.
2 (33 g/l, H₂O, 20 °C)
No data available.
Solubility in Water: Soluble (slowly forms the ortho-acid)
Solubility in Organic Solvents: Soluble in alcohol.
No data available.
< 0.001 hPa (20 °C)
No data available.
Specific Gravity: 2.2 - 2.49
> 1 g/l
No data available.

Partition coefficient n-octanol/water (log value)
Vapor pressure
Evaporation rate
Density and/or relative density
Relative vapor density
Particle characteristics

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability

Slowly changes to orthophosphoric acid in water.

Possibility of hazardous reactions

Corrodes common metals. Phosphorus oxides may form when heated to decomposition.

Conditions to avoid

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials

Alcohols, alkali metals/heat, alkali oxides/heat, alkali salts, acids, combustible substances, halogen-halogen compounds, halogen oxides, hydrogen halides, halogens, hydrogen peroxide, metals (i.e. alkaline earth metals), nitromethane, organic substances, perchloric acid, peroxy compounds, strong bases, sulfides, metals/water.

Hazardous decomposition products

Oxides of phosphorus and/or phosphine.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Causes burns and pain to mouth, throat, and esophagus with associated vomiting and abdominal pain. Risk of perforation in the esophagus and stomach! Other symptoms include nausea, vomiting, diarrhea and shock. May cause damage to the mucous membranes. May cause hemorrhaging of the digestive tract. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

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Inhalation: Causes severe irritation of upper respiratory tract with coughing, sore throat, burns, breathing difficulty and possible coma. Irritation may lead to chemical pneumonitis, bronchitis, and pulmonary edema.

Skin corrosion/irritation

Causes burns. Corrosive to skin. May be harmful if absorbed through the skin. May cause redness and pain leading to ulceration.

Serious eye damage/irritation

Causes burns. May cause serious damage to eye. Corrosive to eyes. Irritating to eye tissue, may cause pain and blurred vision which may lead to irreversible eye injury.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Prolonged inhalation to high concentrations may cause respiratory tract inflammation and lung damage. Prolonged and repeated skin contact may cause dermatitis. Repeated contact may cause corneal damage. Prolonged exposure to vapors from aqueous solutions may cause erosion of teeth.

Sodium hexametaphosphate: mouse LD50 intraperitoneal 680mg/kg (680mg/kg) Pharmacology and Toxicology Vol. 64, Pg. 247, 1989.

[Link to PubMed](#)

mouse LD50 oral 7572mg/kg (7572mg/kg) GASTROINTESTINAL: ULCERATION OR BLEEDING FROM STOMACH

GASTROINTESTINAL: ULCERATION OR BLEEDING FROM DUODENUM

GASTROINTESTINAL: ULCERATION OR BLEEDING FROM SMALL INTESTINE Toxicology Letters. Vol. 31(Suppl), Pg. 44, 1986.

rat LD50 oral 3053mg/kg (3053mg/kg) GASTROINTESTINAL: ULCERATION OR BLEEDING FROM STOMACH

GASTROINTESTINAL: ULCERATION OR BLEEDING FROM DUODENUM

GASTROINTESTINAL: ULCERATION OR BLEEDING FROM SMALL INTESTINE Toxicology Letters. Vol. 31(Suppl), Pg. 44, 1986.

SECTION 12: Ecological information

Toxicity

Acute Toxicity - Other Organisms: LC50 (aquatic organisms): 100 mg/l, 96h

Other adverse effects

Other Adverse Effects: Product reacts with water. Harmful due to pH shift.

Other Information: Depending upon the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 3260

Class: 8

Packing Group: III

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Metaphosphoric Acid)

Hazchem emergency action code (EAC)

2X

IMDG

UN Number: 3260

Class: 8

Packing Group: III

EMS Number:

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(Metaphosphoric Acid)

IATA

UN Number: 3260

Class: 8

Packing Group: III

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(Metaphosphoric Acid)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)