

**T S ALLEN PTY. LTD.
TRADING AS
AHG INDUSTRIES**



ACN : 642 304 809 ABN:33 642 304 809
101/9 Muriel Matters Walk, Bowden SA 5007. Australia
Tel: +61 0404537111
Email : info@aushgs.com
Website : www.aushgs.com

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Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name PHOSPHORIC ACID

1.2 Other means of identification

Synonym(s) Orthophosphoric Acid; Phosphoric Acid >25%
Formula H3PO4

1.4 Details of the supplier

Supplier name **ORTHO CHEMICALS AUSTRALIA PTY LTD**
Address 62-74 Rankins Road, Kensington, Victoria, AUSTRALIA, 3031
Telephone (03) 9376 3922
Facsimile (03) 9376 3212
Email ortho@orthochemicals.com
Website www.orthochemicals.com

1.5 Emergency telephone number(s)

Emergency 0418 384 935

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification CORROSIVE TO METALS (Category 1)
SKIN CORROSION (Sub-category 1B)
ACUTE TOXICITY - INHALATION (Category 4)

2.2 Label elements

Signal word DANGER

Pictograms



Hazard statement(s) H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.

Precautionary statement(s) P234 Keep only in original container.
P260 Do not breathe mist/vapour/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P363	Wash contaminated clothing before reuse.
	P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P310	Immediately call a POISON CENTER or doctor/physician.
Storage	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P390	Absorb spillage to prevent material damage.
	P405	Store locked up.
Disposal	P406	Store in corrosive resistant container with a resistant inner liner.
	P501	Dispose of contents/container in accordance with local/state/federal Regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances/Mixtures

Ingredient	Identification	Classification	Content
Phosphoric Acid	CAS: 7664-38-2 EC-No. 231-633-2	Skin Corrosion 1B; H314 Acute Toxicity (Inhalation) 4; H332	>=25 - <85%
Water	CAS: 7732-18-5		Balance

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. Get medical aid immediately.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a Poison Centre or doctor/physician. Apply resuscitation if victim is not breathing - Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory device. Administer oxygen if breathing is difficult.
Skin	Remove contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes. Seek immediate medical attention. Wash clothing before reuse. If burned, treat as burn by acid.
Ingestion	Do NOT induce vomiting. Rinse mouth with water. Give water to drink provided person is conscious. Seek medical attention immediately.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

May cause cyanosis (blue-grey colouring of skin and lips caused by lack of oxygen). Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically based on judgement of doctor and individual reactions of patient. NOTE: Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

5. FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide, foam or water spray. Do not use water jets.

5.2 Specific hazards arising from the substance or mixture

Non-combustible liquid. Incompatible with strong oxidizing agents, strong reducing agents, strong alkali, active powdered metals, Fluorine, sulphur trioxide, phosphorus pentoxide, metals, and sources of ignition. This product will release hydrogen on contact with metals, which may cause explosion in the air. Reacts with water to generate heat and form phosphoric acid. The reaction is not violent. Emits toxic fumes under fire conditions. It will produce the virulent gas of oxidation phosphorus at a high temperature. It is corrosive. Hazardous decomposition products may include Phosphine, oxides of phosphorus, and hydrogen gas.

5.3 Special protective equipment and precautions for fire fighters

Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment. Fire fighters should wear a positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use Personal Protective Equipment (PPE) as detailed in Section 8 of this SDS. Shut off all possible sources of ignition. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Use clean, non-sparking tools and equipment. Evacuate all unnecessary personnel.

6.2 Environmental precautions

Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.

6.3 Methods and materials for containment and clean up

Neutralize spilled product with lime or soda. Soak up using absorbent material such as sand or soil. When saturated, collect the material and transfer to a suitable, labelled chemical waste container and dispose of promptly as hazardous waste. Ventilate area and wash spill site after material pickup is complete.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood. Avoid prolonged or repeated exposure. Remove contaminated clothing and wash before reuse.

When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid - Water added to acid can cause uncontrolled boiling and splashing.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Store in corrosives area. Protect from direct sunlight, moisture, fire, and heat. Store away from alkali, H vesicant, tinder, active metal powder.

7.3 Container

May be corrosive to metals - Keep only in the original container/corrosive resistant container with resistant inner liner.

8. EXPOSURE CONTROLS / PERSONAL PROTECTIONS

8.1 Control parameters

Exposure standards

The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC).

Component	List	Value	Type
Phosphoric Acid	ACGIH	1 mg/m ³	TWA
	ACGIH	3 mg/m ³	STEL

Biological Limit

No information available on biological limit values for this product.

8.2 Engineering controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

8.3 Personal protective equipment (PPE)

Eye/Face	Wear chemical safety goggles; face shield (AS/NZS 1336/1337).
Hands	Wear protective gloves. Recommended: Elbow-length impervious gloves, e.g. Butyl rubber (0.7mm Chloroprene rubber (0.5mm), Viton (0.4mm), Natural rubber (0.5mm). Do not use leather gloves (AS2161).
Body	Wear chemical-resistant coveralls and safety footwear (AS3765/2210).
Respiratory	Where the potential exists for exposure over 1 mg/m ³ , use an approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive pressure mode. For increased protection, use in combination with an auxiliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode. If the possibility of exposure above 1,000 mg/m ³ exists, use an approved self-contained breathing apparatus with a full facepiece operated in a pressure-demand or other positive-pressure mode equipped with an emergency escape air cylinder (AS1715/1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Viscous Liquid
Colour	Transparent, colourless
Odour	Odourless
pH	<1
Melting point	No data available
Boiling point	158°C
Flash point	No data available
Upper flammability/explosive limit	No data available
Lower flammability/explosive limit	No data available
Vapour pressure (20°C)	No data available
Relative vapour density (air=1)	No data available
Solubility in water @ 20°C	Soluble
Solubility in solvents	Soluble in alcohols
Specific gravity	1.5 - 1.7 depending upon phosphoric acid strength
Auto-ignition temperature	No data available
Bulk density	No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage, storage and temperature. Corrosive liquid. Hygroscopic: absorbs moisture or water from the air.

10.3 Possibility of hazardous reactions

Polymerization may occur. Reacts with water to generate heat and form phosphoric acid. The reaction is not violent. Reacts with bases.

10.4 Conditions to avoid

Avoid incompatible materials, excess heat, direct sunlight, moist air or water.

10.5 Incompatible materials

Incompatible with strong oxidising agents, strong reducing agents, strong alkali, active powdered metals, Fluorine, sulphur trioxide, phosphorus pentoxide, metals, and sources of ignition.

10.6 Hazardous decomposition products

This product will release hydrogen on contact with metals, which may cause explosion in the air. Reacts with water to generate heat and form phosphoric acid. The reaction is not violent. Emits toxic fumes under fire conditions. It will produce the virulent gas of oxidation phosphorus at a high temperature. It is corrosive. Hazardous decomposition products may include Phosphine, oxides of phosphorus, and hydrogen gas.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Oral LD50 Rat: Approx. 2000 mg/kg - 20% phosphoric acid Dermal LD50 Rabbit: >1260 g/Kg - 85% phosphoric acid Inhalation LC50 Rabbit: 5337 mg/m3 Inhalation LC50 Rat: 3846 mg/m3 Inhalation LC50 Mouse 856 mg/m3 Inhalation LC50 Guinea Pig: 193 mg/m3
Eye	Causes burns. Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness.
Ingestion	Causes burns. May be harmful by ingestion. Can cause nausea, diarrhoea, corrosion, burns to mouth and oesophagus, abdominal pain, chest pain, shortness of breath, seizures, and death.
Inhalation	Inhalation may result in spasm, inflammation and oedema of the larynx and bronchi, chemical phenomenon, and pulmonary oedema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. May be harmful by inhalation. Mists may cause lung irritation, shortness of breath, fluid in lungs.
Skin	Causes burns. Causes irritation, burns.
Sensitization	No data available.
Mutagenicity	This material is not considered a mutagen.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive	No reproductive effects have been identified for this material.
Teratogenicity	No data available.
STOT - single exposure	Bone marrow. Blood. Liver.
STOT - repeated exposure	Avoid prolonged or repeated exposure.
Aspiration	Not known.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acidic, nutrient for undesirable algae. While acidity may be reduced by natural water hardness minerals, the phosphate may persist indefinitely. Eco toxicity value: TLm mosquito fish 138 mg/L/24-96 hr in turbid water at 22-24°C. Bioconcentration: none.

Product causes a strong drop of the pH-value of water and soil. Product causes unwanted growth of algae.

Acute Toxicity – Algae: LC50 (Fish, 96h): 138 mg/l

12.2 Persistence and degradability

Persistence: Water/Soil HIGH
Persistence: Air HIGH

12.3 Bioaccumulative potential

Bioaccumulation LOW (LogKOW = 0.7699)

12.4 Mobility in soil

Mobility HIGH (KOC=1)

12.5 Other adverse effects

Environmental fate: Do NOT allow product to enter waterways, drains or sewers.

13. DISPOSAL CONSIDERATIONS

13.1 Safe handling and disposal methods

Dispose of in accordance with all local, state and federal regulations.

13.2 Disposal of any contaminated packaging

Dispose of as unused product or recycle/recondition at an approved facility.

13.3 Environmental regulations

Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG AND IATA

14.1 UN number

1805

14.2 UN proper shipping name

PHOSPHORIC ACID, SOLUTION

14.3 Transport hazard classes

DG class

8

Subsidiary risk(s)

None Allocated

14.4 Packing group

III

14.5 Environmental hazards

14.6 Special precautions for user

Hazchem code

2R

IERG

37 Toxic And/Or Corrosive Substances Non-Combustible

15. REGULATORY INFORMATION

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

Poison schedule

Poison Schedule Number 6 has been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Inventory listing(s)

AUSTRALIA: AICS (Australian Inventory of Chemical Substances)

All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Abbreviations and acronyms:

ACGIH - American Conference of Governmental Industrial Hygienists.

AS – Australian Standard.

ADI – Acceptable Daily Intake.

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road.

APVMA - Agricultural Pesticides and Veterinary Medicines Authority.

CAS # - Chemical Abstracts Service Number (or CAS Registry Number; CAS RN).

CFR - Code of Federal Regulations

EC No. – European Commission Number.

IARC - International Agency for Research on Cancer.
IERG - Initial Emergency Response Guide.
GHS - Globally Harmonised System.
HMIS - Hazardous Materials Identification System
IATA-DGR – Dangerous Goods Regulations by the International Air Transport Association.
IMDG – International Maritime Code for Dangerous Goods.
Kgs – Kilograms.
LD50 – Lethal dose, 50%.
LC50 – Lethal Concentration 50%.
LEL - Lower Explosive Limit
UEL - Upper Explosive Limit
lt - Litre
ml - Millilitre
mg - Milligram
mg/m³ - Milligrams per Cubic Metre
mm - Millimetre
NA - Not applicable N/A
PBT – Persistent, Bioaccumulative, Toxic
PEL - Permissible Exposure Limit
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million
RID - Regulations concerning the International carriage of Dangerous Goods by Rail.
STEL - Short Term Exposure Limit
STOT-RE - Specific target organ toxicity (repeated exposure)
STOT-SE - Specific target organ toxicity (single exposure)
SUSMP - Standard for the Uniform Scheduling of Medicines and Poisons.
TLV - Threshold Limit value
TWA/OEL - Time Weighted Average or Occupational Exposure Limit

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Reason(s) for Issue:	Standard 5 Yearly Review
Changes:	Hazardous Classification updated

Prepared in accordance to the GHS (Globally Harmonised System)

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. It should be read taking into account how the product is handled in your particular situation and how it is used in conjunction with other products.