

#### 1. IDENTIFICATION

Product Name Monoammonium phosphate (MAP)

Other Names Ammonium dihydrogen orthophosphate; Ammonium dihydrogen phosphate; Monoammonium orthophosphate;

Monoammonium phosphate + Zinc Blend

Uses Used as an ingredient of fertilisers; as a component in dry chemical fire extinguishers; food/feed additive; yeast

manufacture.

Chemical FamilyNo Data AvailableChemical FormulaUnspecified

Chemical Name Phosphoric acid, monoammonium salt

Product Description No Data Available

# Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

# **Emergency Contact Details**

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

# 2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

**Globally Harmonised System** 



LOCKECI Bag 15 Minto NSW 2566 Australia 2 Swettenham Road Minto NSW 2566 Australia All Deliveries: 4 Holmes Road Minto NSW 2566 Australia Phone Fax E-mail Web ABN

+61 2 9733 3000 +61 2 9733 3111 sydney@redox.com www.redox.com 92 000 762 345 Australia New Zealand
Adelaide Auckland
Brisbane Christchurch
Melbourne Hawke's Bay
Perth UK
Sydney London

Malaysia Kuala Lumpur USA Los Angeles Oakland Mexico





**Hazard Classification** NOT hazardous according to the criteria of the Globally Harmonised System of Classification and

Labelling of Chemicals (GHS)

Signal Word None

### **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

**Dangerous Goods Classification** NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous

Goods by Road & Rail (ADG Code)

# **Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

**HSNO Classifications** Health 6.4A Substances that are irritating to the eye

Hazards

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Monoammonium phosphate	H6NO4P	7722-76-1	<=100 %
Zinc	Zn	7440-66-6	0 - 1 %

#### 4. FIRST AID MEASURES

#### Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get medical advice/attention.

Never give anything by mouth to an unconscious person.

IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally Eve

lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15

minutes. If eye irritation persists, get medical advice/attention.

IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with (warm) running water for several Skin

minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing before reuse.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. If

respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer

oxygen if breathing is difficult.

**Advice to Doctor** Treat symptomatically. Medical Conditions Aggravated

No information available.

by Exposure

#### 5. FIRE FIGHTING MEASURES

**General Measures** If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is

**Flammability Conditions** Non-combustible; Material does not burn.

**Extinguishing Media** If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Use

extinguishing media appropriate to surrounding fire



conditions.

**Fire and Explosion Hazard** May evolve toxic fumes/gases when heated to decomposition.

**Hazardous Products of** 

Combustion

Fire or heat may produce irritating and/or toxic fumes, including phosphorus oxides, nitrogen oxides and ammonia.

**Special Fire Fighting** 

Instructions

Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Personal Protective Equipment Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform

may provide limited protection.

Flash Point
No Data Available
Lower Explosion Limit
No Data Available
Upper Explosion Limit
No Data Available
Auto Ignition Temperature
No Data Available
Hazchem Code
No Data Available

#### 6. ACCIDENTAL RELEASE MEASURES

General Response Procedure Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing

dust and contact with eyes, skin and clothing.

Clean Up Procedures Collect material (sweep or vacuum up) and place in suitable, properly labelled containers for recycling or salvage (if

uncontaminated) or disposal (see SECTION 13).

**Containment** Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.

**Decontamination** After spill cleanup, wash area preventing runoff from entering drains.

**Environmental Precautionary** 

Measures

Prevent entry into drains and waterways. If environmental contamination has occurred, advise local emergency

services.

**Evacuation Criteria** Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

**Personal Precautionary** 

Measures

Use personal protective equipment as required (see SECTION 8).

#### 7. HANDLING AND STORAGE

**Handling** Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). To avoid thermal decomposition, do not overheat. Avoid contact with incompatible

materials (see SECTION 10).

Storage Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use.

Avoid exposure to water/moisture. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store

away from farm chemicals, e.g. insecticides, fungicides and herbicides.

**Container** Keep in the original container. Ensure packages are adequately labelled, protected from physical damage and sealed

when not in use.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**General** No value assigned for this specific material by Safe Work Australia. For dusts from solid substances without specific

occupational exposure standards:

- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3, measured as inhalable dust.

- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable).

**Exposure Limits** No Data Available

**Biological Limits** No information available.

Engineering Measures A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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.



**Personal Protection Equipment** 

- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or where an inhalation risk exists. Recommended: Dust mask/particulate (P1) respirator (refer to AS/NZS 1715 & 1716).
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or dust-proof goggles.
- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. rubber, PVC or neoprene.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Light-weight protective clothing; Safety shoes. Wear coveralls when using in large quantities or where heavy contamination in literal.

is likely.

**Special Hazards Precaustions** 

No information available.

**Work Hygienic Practices** 

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of work. Wash contaminated clothing and other protective equipment before storage or re-use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

AppearanceCrystals, granules or powderOdourOdourless or slight-acidicColourWhite or off-whitePH4.2 - 5.0 (1% solution)Vapour Pressure<1 mmHg (@ 20 °C)</th>Relative Vapour DensityNo Data Available

**Boiling Point** Decomposes before boiling

Melting Point190 - 197 °CFreezing PointNo Data Available

**Solubility** Soluble in water (370 g/l) 25°C

Specific Gravity1.80 - 1.81Flash PointNo Data AvailableAuto Ignition TempNo Data AvailableEvaporation RateNo Data AvailableBulk Density1,100 kg/m3 (20 °C)Corrosion RateNo Data Available

**Decomposition Temperature** >197 °C **Density** 1.81 g/cm3 **Specific Heat** No Data Available **Molecular Weight** No Data Available **Net Propellant Weight** No Data Available **Octanol Water Coefficient** No Data Available **Particle Size** No Data Available **Partition Coefficient** No Data Available Saturated Vapour Concentration No Data Available **Vapour Temperature** No Data Available No Data Available Viscosity Volatile Percent No Data Available **VOC Volume** No Data Available **Additional Characteristics** No information available.

Potential for Dust Explosion Product does not present an explosion hazard (inorganic substance).

Fast or Intensely Burning Characteristics

No information available.

Flame Propagation or Burning Rate of Solid Materials

No information available.

Non-Flammables That Could Contribute Unusual Hazards to a

No information available.

**Fire** 



Properties That May Initiate or Contribute to Fire Intensity

Non-combustible; Material does not burn.

Reactions That Release Gases or Vapours

May evolve toxic fumes/gases when heated to decomposition, including phosphorus oxides, nitrogen oxides and

Release of Invisible Flammable

Vapours and Gases

No information available.

#### 10. STABILITY AND REACTIVITY

**General Information**Reacts with alkalis releasing ammonia. Reacts with methenamine, causing slow evolution of formaldehyde. May be

mildly corrosive to aluminium and steel.

**Chemical Stability** Stable under recommended conditions of storage and handling.

Conditions to Avoid Avoid dust formation. To avoid thermal decomposition, do not overheat. Avoid moisture.

Materials to Avoid Incompatible/reactive with strong acids, alkalis, oxidising agents; copper and its alloys; methenamine, magnesium,

hypochlorites

**Hazardous Decomposition** 

**Products** 

No decomposition if used and stored according to specifications. May evolve toxic fumes/gases when heated to

decomposition, including phosphorus oxides, nitrogen oxides and ammonia.

**Hazardous Polymerisation** Not expected to occur.

#### 11. TOXICOLOGICAL INFORMATION

General Information - Acute toxicity: This product is expected to be of low toxicity. May cause diarrhoea, nausea, vomiting, stomach

cramps. Based on available data, the classification criteria are not met.
- Skin corrosion/irritation: Not classified as a skin irritant. Prolonged or repeated contact may result in mild irritation.

- Eye damage/irritation: Not classified as an eye irritant. Contact may result in mild irritation, lacrimation and redness.

- Respiratory/skin sensitisation: Not classified as causing skin or respiratory sensitisation.

- Germ cell mutagenicity: Not classified as a mutagen.

- Carcinogenicity: Not classified as a carcinogen.

- Reproductive toxicity: Not classified as a reproductive toxin.

- STOT (single exposure): Not classified as causing organ damage from single exposure. However, over exposure

may result in irritation of the nose and throat, with coughing.
- STOT (repeated exposure): Not classified as causing organ damage from repeated exposure.

- Aspiration toxicity: Not classified as causing aspiration.

Carcinogen Category

None

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Aquatic toxicity;

- LC50, Freshwater fish (Oncorhynchus mykiss): >85.9 mg/L (96 h) static [OECD Guideline 203].

- EC50, Freshwater invertebrates (Daphnia carinata): 1,790 mg/L (72 h) Read-across, single-superphosphate IAPHA-1975l.

- EC50, Freshwater algae (Selenastrum capricornutum): >100 mg/L (72 h) Read-across, ammonium dihydrogenorthophosphate [OECD 201].

Toxicity to microorganisms:

- EC50, Bacteria (Activated sludge, domestic), respiration rate: >100 mg/L (3 h) Read-across, diammonium hydrogenorthophosphate [OECD 209].

Persistence/Degradability Ready biodegradation tests are not applicable since the substance is inorganic.

In aqueous solution, ammonium dihydrogen orthophosphate is completely dissociated into the ammonium ion (NH4+) and the phosphate anion (PO4 3-). Hydrolysis of the substance does not occur, and it is also not susceptible to

photodegradation.

**Mobility** This substance is highly water soluble and dissociating. Low potential for adsorption to soil (based on substance

properties).

Environmental Fate Product may act as a plant nutrient and cause eutrophication. Do not allow undiluted product or large quantities of it

to reach ground water, water course or sewage system.

Bioaccumulation Potential Simple inorganic salts with high aqueous solubility will exist in a dissociated form in an aqueous solution; Such a

substance has a low potential for bioaccumulation.



**Environmental Impact** No Data Available

#### 13. DISPOSAL CONSIDERATIONS

General Information Can be reused without reprocessing if uncontaminated. If contaminated with other materials, dispose of to an

approved landfill site and in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.

# 14. TRANSPORT INFORMATION

#### Land Transport (Australia)

ADG Code

**Proper Shipping Name**Monoammonium phosphate (MAP)

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

#### Land Transport (Malaysia)

ADR Code

Proper Shipping Name Monoammonium phosphate (MAP)

ClassNo Data AvailableSubsidiary Risk(s)No Data Available

No Data Available

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# Land Transport (New Zealand)

NZS5433

Proper Shipping Name Monoammonium phosphate (MAP)

Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

**Comments** NON-DANGEROUS GOODS: Not regulated for LAND transport.



### Land Transport (United States of America)

US DOT

Proper Shipping Name Monoammonium phosphate (MAP)

Class No Data Available
Subsidiary Risk(s) No Data Available
No Data Available

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

# Sea Transport

**IMDG** Code

Proper Shipping Name Monoammonium phosphate (MAP)

ClassNo Data AvailableSubsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data AvailableEMSNo Data Available

Marine Pollutant No

**Comments** NON-DANGEROUS GOODS: Not regulated for SEA transport.

#### **Air Transport**

IATA DGR

Proper Shipping Name Monoammonium phosphate (MAP)

ClassNo Data AvailableSubsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for AIR transport.

# **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous

Goods by Road & Rail (ADG Code)

#### 15. REGULATORY INFORMATION

General Information AMMONIUM PHOSPHATE is listed in Appendix B of the SUSMP (Low toxicity; Any use).

Poisons Schedule (Aust) Not Scheduled



#### **Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR002503

HSR002768 (Revoked)

#### **National/Regional Inventories**

Australia (AICS) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

**Europe (EINECS)** 231-764-5

**Europe (REACh)**Not Determined

Japan (ENCS/METI) Not Determined

Korea (KECI) Not Determined

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

Philippines (PICCS) Not Determined

Switzerland (Giftliste 1) Not Determined

Switzerland (Inventory of Notified

Substances)

Not Determined

Taiwan (NCSR) Not Determined

**USA (TSCA)** Not Determined

#### **16. OTHER INFORMATION**

#### **Related Product Codes**

MOAMMB1000, MOAMMB1001, MOAMMB1002, MOAMMB1003, MOAMMB1004, MOAMMB1005, MOAMMB2000, MOAMMF1000, MOAMMF1001, MOAMMF1002, MOAMMF1003, MOAMMF1004, MOAMMF1005, MOAMMF1006, MOAMMF1007, MOAMMF1008, MOAMMF1009, MOAMMF1010, MOAMMF1011, MOAMMF1012, MOAMMF1013, MOAMMF1014, MOAMMF1015, MOAMMF1016, MOAMMF1020, MOAMMF1033, MOAMMF1040, MOAMMF1050, MOAMMF2000, MOAMMF2100, MOAMMF2101, MOAMMF2500, MOAMMF3000, MOAMMF4000, MOAMMF4010, MOAMMO0200, MOAMMO0201, MOAMMO0300, MOAMMO0301, MOAMMO0400, MOAMMO0500, MOAMMO0600, MOAMMO0700, MOAMMO0800, MOAMMO0801, MOAMMO0802, MOAMMO0805, MOAMMO0810, MOAMMO0812, MOAMMO0880, MOAMMO0891, MOAMMO0892, MOAMMO0893, MOAMMO0895, MOAMMO0898, MOAMMO0900, MOAMMO1000, MOAMMO1001, MOAMMO1002, MOAMMO1003, MOAMMO1004, MOAMMO1005, MOAMMO1006, MOAMMO1007, MOAMMO1008, MOAMMO1009, MOAMMO1010, MOAMMO1011, MOAMMO1012, MOAMMO1013, MOAMMO1014, MOAMMO1015, MOAMMO1016, MOAMMO1017, MOAMMO1018, MOAMMO1019, MOAMMO1020, MOAMMO1021, MOAMMO1022, MOAMMO1023, MOAMMO1024, MOAMMO1025, MOAMMO1026, MOAMMO1027, MOAMMO1028, MOAMMO1029, MOAMMO1044, MOAMMO1100, MOAMMO1400, MOAMMO1500, MOAMMO1501, MOAMMO1550, MOAMMO1600, MOAMMO1601, MOAMMO1610, MOAMMO1650, MOAMMO1700, MOAMMO1800, MOAMMO1801, MOAMMO1802, MOAMMO1803, MOAMMO1804, MOAMMO1805, MOAMMO1806, MOAMMO1807, MOAMMO1808, MOAMMO1809, MOAMMO1810, MOAMMO1811, MOAMMO1812, MOAMMO1813, MOAMMO1814, MOAMMO1815, MOAMMO1816, MOAMMO1817, MOAMMO1818, MOAMMO1819, MOAMMO1820, MOAMMO1821, MOAMMO1822, MOAMMO1823, MOAMMO1824, MOAMMO1825, MOAMMO1826, MOAMMO1827, MOAMMO1830, MOAMMO1900, MOAMMO2000, MOAMMO2001, MOAMMO2100, MOAMMOAMMO2101, MOAMMO2200, MOAMMO2300, MOAMMO2400, MOAMMO2401, MOAMMO2450,



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MOAMMO9800, MOAMMO9801, MOAMMO9900
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Revision

**Revision Date** 

Key/Legend

25 Mar 2020

< Less Than
> Greater Than

**AICS** Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres

CO2 Carbon Dioxide

**COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm³ Grams per Cubic Centimetre

g/I Grams per Litre

HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluable in each other.

inHg Inch of Mercury inH2O Inch of Water

**K** Kelvin **kg** Kilogram

kg/m³ Kilograms per Cubic Metre

**Ib** Pound

**LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

**LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

Itr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH2O Millimetres of Water mPa.s Millipascals per Second

N/A Not Applicable

**NIOSH** National Institute for Occupational Safety and Health **NOHSC** National Occupational Heath and Safety Commission **OECD** Organisation for Economic Co-operation and Development

Oz Ounce

**PEL** Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion
ppm Parts per Million



ppm/2h Parts per Million per 2 Hours ppm/6h Parts per Million per 6 Hours psi Pounds per Square Inch R Rankine **RCP** Reciprocal Calculation Procedure

**STEL** Short Term Exposure Limit TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average ug/24H Micrograms per 24 Hours UN United Nations

wt Weight

