



# SAFETY DATA SHEET

KOCH FERTILISER AUSTRALIA PTY LTD

## 1. Identification

<b>Product identifier</b>	<b>Monoammonium Phosphate</b>
<b>Other means of identification</b>	
<b>Synonyms</b>	MAP, Monoammonium dihydrogen phosphate, AIC Group 7, Ammonium dihydrogenorthophosphate
<b>Product code</b>	KFAu_NH4H2PO4_AU_EN
<b>Recommended use of the chemical and restrictions on use</b>	
<b>Recommended use</b>	Fertiliser.
<b>Restrictions on use</b>	Not available.

### Details of manufacturer or importer

#### Manufacturer

<b>Company name</b>	Koch Fertiliser Australia Pty Ltd
<b>Address</b>	Graincorp Mackey Street North Geelong Victoria 3215 Australia
<b>Telephone</b>	+011.65.6831.6563 or +1.316.828.7672
<b>e-mail</b>	kochmsds@kochind.com
<b>Emergency telephone number</b>	Chemtrec: +001 703-527-3887  (Please reverse charges)

## 2. Hazard(s) identification

### Classification of the hazardous chemical

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>Environmental hazards</b>	Not classified.

### Label elements, including precautionary statements

<b>Hazard symbol(s)</b>	None.
<b>Signal word</b>	None.
<b>Hazard statement(s)</b>	The mixture does not meet the criteria for classification.
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash hands after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.

**Other hazards which do not result in classification** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

### Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients
Monoammonium phosphate	7722-76-1	> 80
Ammonium magnesium orthophosphate (Struvite)	7785-21-9	< 10

Ammonium sulfate	7783-20-2	< 10
Diammonium hydrogenorthophosphate	7783-28-0	< 10

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.  
This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

#### 4. First-aid measures

##### Description of necessary first aid measures

**Inhalation** Move person to fresh air. Get medical attention if any discomfort continues.  
**Skin contact** Wash off with plenty of water. Get medical attention if irritation develops or persists.  
**Eye contact** Do not rub eye. Remove contact lenses, if present and easy to do. Flush thoroughly with water. If irritation occurs, get medical assistance.  
**Ingestion** Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort occurs.

**Personal protection for first-aid responders** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Symptoms caused by exposure** Eye contact: Symptoms can include irritation, redness, scratching of the cornea, and tearing.  
Skin contact: Mild skin irritation.  
Dust may irritate throat and respiratory system and cause coughing.

**Medical attention and special treatment** Treat symptomatically.

#### 5. Fire-fighting measures

##### Extinguishing media

**Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for fire fighters** Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk.

**Hazchem Code** None.

**General fire hazards** The product is non-combustible.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk.

#### 6. Accidental release measures

##### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Keep unnecessary personnel away.

**For emergency responders** Avoid inhalation and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. For personal protection, see Section 8 of the SDS.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.

**Methods and materials for containment and cleaning up** Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. After removal flush contaminated area thoroughly with water.

Never return spills to original containers for re-use.

**Other issues relating to spills and releases** Avoid dust formation.

## 7. Handling and storage

**Precautions for safe handling** Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** This product when stored in a confined, unventilated space/hold can give off ammonia or other odors and lead to the depletion of oxygen within this space and other confined spaces. Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store away from incompatible materials.

## 8. Exposure controls and personal protection

**Control parameters** Follow standard monitoring procedures.

**Occupational exposure limits** No exposure limits noted for ingredient(s).

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

**Appropriate engineering controls** Provide adequate general and local exhaust ventilation. Observe occupational exposure limits and minimise the risk of inhalation of dust.

**Individual protection measures, for example personal protective equipment (PPE)**

**Eye/face protection** Risk of contact: Wear dust goggles.

**Skin protection**

**Hand protection** Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

**Other**

Normal work clothing (long sleeved shirts and long pants) is recommended.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practices.

## 9. Physical and chemical properties

**Appearance** Granules.

**Physical state** Solid.

**Form** Granules.

**Colour** Grey. Brown.

**Odour** Slight acidic.

**Odour threshold** Not available.

**pH** 4.5 (1% solution)

**Melting point/freezing point** 197 °C (386.6 °F)

**Initial boiling point and boiling range** Not available.

**Flash point** Not appropriate.

**Evaporation rate** Not appropriate.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Vapour pressure** Not available.

**Vapour density** Not applicable.

**Relative density** 1.81 g/cm<sup>3</sup>

<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	99.5 - 100 %
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not applicable.

**Other physical and chemical parameters**

<b>Bulk density</b>	64 - 75 lb/ft <sup>3</sup> 950 - 1050 kg/m <sup>3</sup>
<b>Density</b>	1.81 g/cm <sup>3</sup>
<b>Explosive properties</b>	Not explosive.
<b>Explosivity</b>	Not explosive.
<b>Flammability</b>	Non flammable.
<b>Molecular formula</b>	H3-N.H3-O4-P
<b>Molecular weight</b>	115.03 g/mol
<b>Oxidising properties</b>	Not oxidising.

**10. Stability and reactivity**

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable at normal conditions. Decomposes at high temperatures giving ammonia and polyphosphoric acid.
<b>Possibility of hazardous reactions</b>	Will not occur.
<b>Conditions to avoid</b>	Avoid dust formation. High temperatures.
<b>Incompatible materials</b>	Strong oxidising agents. Strong acids. Strong bases. Magnesium.
<b>Hazardous decomposition products</b>	Phosphorus oxides. Nitrogen Oxides. Ammonia.

**11. Toxicological information**

**Information on possible routes of exposure**

<b>Inhalation</b>	Dust may irritate respiratory system.
<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Dust may irritate the eyes.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

**Symptoms related to exposure** Eye contact: Symptoms can include irritation, redness, scratching of the cornea, and tearing. Skin contact: Mild skin irritation. Dust may irritate throat and respiratory system and cause coughing.

**Acute toxicity** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Large quantities: May cause effects on the calcium metabolism, resulting in cardiac disorders and impaired functions.

Components	Species	Test results
Ammonium sulfate (CAS 7783-20-2)		
<u>Acute</u>		
<b>Inhalation</b>		
LC50	Rat	> 1000 mg/m <sup>3</sup> , 8 hours
<b>Oral</b>		
LD50	Rat	2840 mg/kg
Diammonium hydrogenorthophosphate (CAS 7783-28-0)		
<u>Acute</u>		
<b>Dermal</b>		
LD50	Sprague-Dawley rat	> 5000 mg/kg

Components	Species	Test results
<b>Inhalation</b>		
LC50	Rat	> 5000 mg/m <sup>3</sup> , 4 hours
<b>Oral</b>		
LD50	Sprague-Dawley rat	> 2000 mg/kg
Monoammonium phosphate (CAS 7722-76-1)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rat	> 5000 mg/kg
<b>Inhalation</b>		
LD50	Rat	> 5000 mg/m <sup>3</sup>
<b>Oral</b>		
LD50	Rat	> 2000 mg/kg
<b>Skin corrosion/irritation</b>	May cause irritation through mechanical abrasion.	
<b>Serious eye damage/irritation</b>	May cause eye irritation.	
<b>Respiratory or skin sensitisation</b>		
<b>Respiratory sensitisation</b>	Not a respiratory sensitiser.	
<b>Skin sensitisation</b>	This product is not expected to cause skin sensitisation.	
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Carcinogenicity</b>	Not available.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	Due to partial or complete lack of data the classification is not possible.	
<b>Specific target organ toxicity - repeated exposure</b>	Due to partial or complete lack of data the classification is not possible.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged exposure may cause chronic effects.	

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test results
Ammonium sulfate (CAS 7783-20-2)		
Fish	LC50	Salmo gairdneri
		173 mg/l, 96 hours
<b>Aquatic</b>		
Algae	EC50	Chlorella vulgaris
		2700 mg/l, 18 days
Crustacea	EC50	Water flea (Daphnia magna)
		> 100 mg/l, 96 hours
Diammonium hydrogenorthophosphate (CAS 7783-28-0)		
<b>Aquatic</b>		
Algae	EC50	Selenastrum capricornutum
		> 97.1 mg/l, 72 hours
Crustacea	LC50	Daphnia
		1790 mg/l, 96 hours
Fish	LC50	Carp, hawk fish (Cirrhinus mrigala)
		1700 mg/l, 96 hours
<b>Persistence and degradability</b>	No data available.	
<b>Bioaccumulative potential</b>	The product is not expected to bioaccumulate.	
<b>Mobility in soil</b>	This product is water soluble and may disperse in soil.	
<b>Other adverse effects</b>	Fertilisers, particularly those containing nitrogen and/or phosphorus, can stimulate weed and algal growth in static surface waters. Nitrogen fertilisers may contain or form nitrate which can contaminate surface and ground-water. High nitrate concentrations may render the water unsuitable for human and livestock consumption.	

### 13. Disposal considerations

<b>Disposal methods</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
<b>Residual waste</b>	Dispose in accordance with applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### ADG

Not regulated as dangerous goods.

#### RID

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

### 15. Regulatory information

#### Safety, health and environmental regulations

**National regulations** This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

##### Australia Medicines & Poisons Appendix B

AMMONIUM PHOSPHATE (CAS 7783-28-0)

##### High Volume Industrial Chemicals (HVIC)

Ammonium sulfate (CAS 7783-20-2)

1000 - 9999 TONNES See the regulation for additional information.

Monoammonium phosphate (CAS 7722-76-1)

1000 - 9999 TONNES See the regulation for additional information.

##### Importation of Ozone Depleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)

Not listed.

##### National Pollutant Inventory (NPI) substance reporting list

Not listed.

##### Prohibited Carcinogenic Substances

Not regulated.

##### Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

##### Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

##### Restricted Carcinogenic Substances

Not regulated.

#### International regulations

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Kyoto protocol

Not applicable.

##### Montreal Protocol

Not applicable.

##### Basel Convention

Not applicable.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

**Issue date** 06-February-2017

**Revision date** -

### Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.