

Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/06/2017

version 1

Reviewed on 06/06/2017

1 Identification

- **Product identifier**
- **Trade name:** MAP
- **Synonyms** Monoammonium phosphate, Ammonium dihydrogen phosphate, Monoammonium salt
- **CAS Number:**
7722-76-1
- **EC number:**
231-764-5
- **Application of the substance / the mixture**
Binder
Fertilizer
Fire retarding agent
Laboratory chemicals
Food additive
Feed additive
Flux
Intermediate
Processing aid
Additive for cosmetic or pharmaceutical preparations
No uses advised against.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Yunnan Phosphate Haikou Co., Ltd.
Haikou Industrial Park, Xishan District,
Kunming City, Yunnan Province, China.
Tel: +86-871-68596776
Fax: +86-871-68596712

- Supplier:
ICL Premium Fertilizers NA
622 Emerson Rd
Suite 500
St. Louis, MO 63141,
USA
Tel: 1-877-ROTEM-US
Fax: 314-983-7611
Email: Ariana.Cohen@icl-group.com
- **Emergency telephone number:** CHEMTREC : 1-800-424-9300 (24-hour emergency phone number)

2 Hazard(s) identification

- **Classification of the substance or mixture**
The substance is not classified according to the Globally Harmonized System (GHS).
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Hazard description:**
- **WHMIS-symbols:** None

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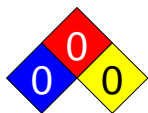
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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

- **Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
7722-76-1 Ammonium dihydrogenorthophosphate
- **Identification number(s)**
- **EC number:** 231-764-5

4 First-aid measures

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Generally the product does not irritate the skin.
Rinse with warm water.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
NOTE: Never give an unconscious person anything to drink.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Suitable extinguishing agents:**
The product is not flammable.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** None
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Ammonia

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Phosphorus oxides (e.g. P₂O₅)

Protective equipment:

Wear fully protective suit.

Mouth respiratory protective device.

Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid formation of dust.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective clothing.

Environmental precautions: Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up: Pick up mechanically.

Reference to other sections See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of dust.

Information about protection against explosions and fires:

No special measures required.

The product is not flammable.

Requirements to be met by storerooms and receptacles:

Store in dry conditions.

Protect from heat and direct sunlight.

Information about storage in one common storage facility:

Do not store together with alkalis (caustic solutions).

Store away from oxidizing agents.

Do not store together with acids.

Incompatible with copper and its alloys

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace: Not required.

Additional information:

Ventilation must be sufficient to maintain TLV-TWA below 3 mg/m³, respirable particles, and 10 mg/m³, inhalable particles [ACGIH recommendation for Particles (Insoluble or poorly soluble). Not Otherwise Specified (PNOS)]

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Breathing equipment: Use suitable respiratory protective device in case of insufficient ventilation.

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· **Protection of hands:**



Protective gloves

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

· **Body protection:** Light weight protective clothing

· **Limitation and supervision of exposure into the environment**

Based on all data available this product is not considered to pose a risk to the environment.

9 Physical and chemical properties

· **Appearance:**

Form: Crystalline

Color: White

· **Odor:** Odorless

· **pH-value (10 g/l) at 20 °C (68 °F):** 4.3-4.5

· **Change in condition**

Melting point/Melting range: 197 °C (387 °F) (1013 hPa; DSC)

Boiling point/Boiling range: Not applicable

The substance decomposes before boiling

· **Flash point:**

Not applicable.

This product is inorganic substance.

· **Flammability (solid, gaseous):**

Product is not flammable.

(based on molecular structure)

· **Ignition temperature:**

Not applicable

· **Decomposition temperature:**

>197 °C (>387 °F) (1013 hPa; DSC)

· **Auto igniting:**

Product is not selfigniting.

(based on molecular structure)

· **Danger of explosion:**

Product does not present an explosion hazard.

(based on molecular structure)

· **Explosion limits:**

None

· **Oxidizing properties**

None

The substance does not contain any groups associated with oxidising properties.

· **Vapor pressure at 20 °C (68 °F):**

0.00147 Pa

· **Bulk density at 20 °C (68 °F):**

1100 kg/m³

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- **Relative density at 20 °C (68 °F)** 1.81 g/cm³ (15.104 lbs/gal)
- **Evaporation rate** Not determined.
This product is an inorganic solid
- **Solubility in / Miscibility with**
 Water at 25 °C (77 °F): 370 g/l
- **Partition coefficient (n-octanol/water):** Not applicable
This substance is inorganic chemical.
- **Viscosity:** This product is solid. Viscosity is only relevant to liquids.
- **Other information** No further relevant information available.

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10 Stability and reactivity

- **Reactivity** No decomposition if used according to specifications.
- **Chemical stability** No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Reacts with strong acids.
Reacts with alkalis releasing ammonia.
Reacts with oxidizing agents.
- **Conditions to avoid** To avoid thermal decomposition do not overheat.
- **Incompatible materials:**
Alkalis
Mineral acids
Incompatible with copper and its alloys
Sodium hypochlorite
- **Hazardous decomposition products:**
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides
Ammonia
Phosphorus oxides (e.g. P₂O₅)

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
no classification is necessary

7722-76-1 Ammonium dihydrogenorthophosphate

Oral	LD50	>2000 mg/kg (rat) (OECD 425)
Dermal	LD50	>5000 mg/kg (rat) (OECD 402)

7783-28-0 diammonium hydrogenorthophosphate

Inhalative	LC50/4 h	>5.0 mg/l (rat) (OECD 403, B.2, EPA)
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- **Primary irritant effect:**

- **Effect Species Method**

7722-76-1 Ammonium dihydrogenorthophosphate

Irritation of skin	equiv. to OECD 404	none (rabbit)
Irritation of eyes	equiv. to OECD 405	none (rabbit)

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7783-28-0 diammonium hydrogenorthophosphate

Sensitization	OECD 429, EC B42 EPA	none (mouse)
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· **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The substance is not subject to classification.

· **Toxicokinetics, metabolism and distribution**

This product dissociates into NH₄⁺ and phosphate ions.

For risk assessment purposes oral absorption is considered to be 50-100%, inhalation absorption 100% and dermal absorption 50-100%.

· **Repeated dose toxicity**

no classification is necessary

No reliable study with this product is present.

This study is conducted on an analogous substance. (read-across)

7783-28-0 diammonium hydrogenorthophosphate

NOAEL >250 mg/kg bw/day, rat, oral (OECD 422)

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

NTP (National Toxicology Program): Substance is not listed

IARC (International Agency for Research on Cancer): Substance is not listed

· **Mutagenicity:** no classification is necessary

· **Carcinogenicity:**

no data available

(no carcinogenicity study needs to be performed as this substance is not genotoxic)

· **Toxicity for reproduction:**

no classification is necessary

For 7783-28-0 diammonium hydrogenorthophosphate (DAP):

reproductive toxicity: NOAEL >1500 mg/kg bw/day; rat, oral (OECD 422)

developmental toxicity: NOAEL >1500 mg/kg bw/day; rat, oral (OECD 422)

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

7783-28-0 diammonium hydrogenorthophosphate

EC50/72 h (static)	>100 mg/L (algae) (OECD 201, freshwater)
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NOEC	>100 mg/L
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7722-76-1 Ammonium dihydrogenorthophosphate

LC50/96 h (static)	>85.9 mg/L (fish <i>Oncorhynchus mykiss</i>) (OECD 203, freshwater)
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· **Persistence and degradability** The substance is inorganic; therefore no biodegradation tests are applicable.

· **Bioaccumulative potential**

Does not accumulate in organisms

This substance is highly water soluble and dissociating.

· **Mobility in soil**

This substance is highly water soluble and dissociating.

Low potential for adsorption (based on substance properties).

· **Other information:**

The product should not get in high quantities into waste water because it may act as a plant nutrient and cause eutrophication.

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· Behavior in sewage processing plants:

Type of test	Effective concentration	Method	Assessment
7783-28-0 diammonium hydrogenorthophosphate			
EC50/3 h (static)	100 mg/L (activated sludge) (OECD 209, C.11, ISO 8192)		
	NOEC (3h) > 100mg/L		

· Remark:

No reliable study with this product is present.

This study is conducted on an analogous substance. (read-across)

Inorganic phosphates are not considered to be toxic to sewage treatment plant microorganisms.

· General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· Results of PBT and vPvB assessment

· PBT: No assessment is required for inorganic substances.

· vPvB: No assessment is required for inorganic substances.

· Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods

· Recommendation:

This product is used as fertiliser. However, large spills can kill vegetation. Prevent large quantities from entering waterways. If uncontaminated, sweep up or collect, and reuse as product. If contaminated with other materials, collect in suitable containers.

Can be reused without reprocessing.

Can be disposed of with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

Disposal must be made in accordance with Local Authority requirements.

· Uncleaned packagings:

· Recommendation:

Packaging can be reused or recycled after cleaning.

Disposal must be made in accordance with Local Authority requirements.

· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

· UN-Number

None

· UN proper shipping name

None

· Transport hazard class(es)

· DOT, ADR, ADN, IMDG, IATA

· Class

Void

· Packing group

Not applicable

· Environmental hazards:

None

· Marine pollutant:

No

· Special precautions for user

None

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

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· UN "Model Regulation": Void

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15 Regulatory information

- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.
- Cancerogenity categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value established by ACGIH) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- Canadian substance listings:
- Canadian Domestic Substances List (DSL) Substance is listed.
- GHS label elements Void
- Hazard pictograms Void
- Signal word Void
- Hazard statements Void
- National regulations:
- Additional classification according to Decree on Hazardous Materials: None
- Registration status (Chemical Inventories listing) :
 - United States (TSCA) : listed
 - Canada (DSL) : listed
 - Australia (AICS) : listed
 - Japan (ENCS) : listed
 - Korea (KECI) : listed
 - Philippines (PICCS) : listed
 - China (IECSC) : listed
 - NTP (National Toxicology Program) : Substance is not listed
 - IARC (International Agency for Research on Cancer) : Substance is not listed
 - EC No.: 231-764-5

16 Other information

- Department issuing SDS: Regulatory Affairs of ICL Fertilizers Products
- Abbreviations and acronyms:
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - ACGIH: American Conference of Governmental Industrial Hygienists
 - NFPA: National Fire Protection Association (USA)
 - HMIS: Hazardous Materials Identification System (USA)

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CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No Observable Adverse Effect Level

NOEC: No-Observed Effect Concentration

OECD: Organisation for Economic Co-operation and Development

· **Disclaimer**

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