Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: MAP

Synonyms
Nova MAP
Dihydrogen phosphate;
Phosphoric acid, monoammonium salt;
Monoammonium phosphate

Article number: 9750120101, 9750010000, 9750000000

CAS Number: 7722-76-1

EC number: 231-764-5

Index number: None

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:
Binder
Fertilizer
Fire retarding agent/Fire extinguisher
Laboratory chemicals
Food additives
Flux
Intermediate
Processing aid
Additive for cosmetic or pharmaceutical preparations
No uses advised against.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Rotem Amfert Negev Ltd.
ICL Specialty Fertilizers
Mishor Rotem, Mobile Post Arava 86800
ISRAEL
Phone: +972-8-6598877
Fax: +972-8-6598987
E-mail: novapeak@iclfertilizers.com

Only Representative/Supplier:
P.M. Chemicals S.r.l.
Via Monteverdi 11, 20131, Milano,
Italy
Phone: +39-02-20487221
Fax: +39-02-2049449
E-mail: info.pmchemicals@pmchemicals.it

1.4 Emergency telephone number:

In Europe call: +31-205-815100 (24 hours a day, 365 days a year)
In Israel call: +972-8-6504777 (24 hours a day, 365 days a year)
+972-8-6304915

(Contd. on page 2)
2 Hazards identification

- 2.1 Classification of the substance or mixture
  Classification according to Regulation (EC) No 1272/2008
  The substance is not classified according to the CLP regulation.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  Not applicable.

- Information concerning particular hazards for human and environment:
  No hazards to be particularly mentioned.

- Classification system:
  The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- 2.2 Label elements
  Labelling according to Regulation (EC) No 1272/2008 Void
  Hazard pictograms Void
  Signal word Void
  Hazard statements Void

- 2.3 Other hazards
  Results of PBT and vPvB assessment
  PBT: Not applicable.
  vPvB: Not applicable.

3 Composition/information on ingredients

- 3.1 Chemical characterization: Substances
  CAS No. Description
  7722-76-1 Ammonium dihydrogenorthophosphate
  EC number: 231-764-5
  SVHC None

4 First aid measures

- 4.1 Description of first aid measures
  General information: No special measures required.
  After inhalation: Supply fresh air; consult doctor if 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.

- 4.2 Most important symptoms and effects, both acute and delayed
  No further relevant information available.

- 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.
5 Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents:
    The product is not flammable.
    Use fire extinguishing methods suitable to surrounding conditions.
  - For safety reasons unsuitable extinguishing agents: None
- 5.2 Special hazards arising from the substance or mixture
  In case of fire, the following can be released:
  - Nitrogen oxides (NOx)
  - Phosphorus oxides (e.g. P2O5)
- 5.3 Advice for firefighters
  - 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

- 6.1 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.
- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up: Pick up mechanically.
- 6.4 Reference to other sections See Section 13 for disposal information.

7 Handling and storage

- 7.1 Precautions for safe handling
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of dust.
- 7.2 Conditions for safe storage, including any incompatibilities
  - 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.
- 7.3 Specific end use(s) No further relevant information available.
8 Exposure controls/personal protection

8.1 Control parameters
- Ingredients with limit values that require monitoring at the workplace: Not required.
- DNELs
  For workers:
  - Long-term-systemic effects (inhalation) DNEL: 6.1 mg/m³
  - Long-term-systemic effects (dermal) DNEL: 34.7 mg/kg bw/day
  For general population:
  - Long-term-systemic effects (inhalation) DNEL: 1.8 mg/m³
  - Long-term-systemic effects (dermal) DNEL: 20.8 mg/kg bw/day
  - Long-term-systemic effects (oral) DNEL: 2.1 mg/kg bw/day
- PNECs
  - PNEC aqua (freshwater): 1.7 mg/L
  - PNEC aqua (marine water): 0.17 mg/L
  - PNEC aqua (intermittent releases): 17 mg/L
  - PNEC STP: 10 mg/L
- 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)]

8.2 Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    - The usual precautionary measures are to be adhered to when handling chemicals.
    - 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.
  - Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation.
  - 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 trough 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.
- Risk management measures
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
*9 Physical and chemical properties*

- **9.1 Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:** Crystalline
  - **Colour:** White
  - **Odour:** Odourless
  - **pH-value (10 g/l) at 20°C:** 4.3-4.5
  - **Change in condition**
    - **Melting point/Melting range:** 197°C (1013hPa; DSC)
    - **Boiling point/Boiling range:** Not applicable
      - The substance decomposes before boiling
  - **Flash point:** Not applicable.
    - This product is an inorganic substance.
  - **Flammability (solid, gaseous):** Product is not flammable.
    - (based on molecular structure)
  - **Ignition temperature:** Not applicable
  - **Decomposition temperature:** >197°C (1013 hPa; DSC)
  - **Self-igniting:** Product is not self-igniting.
    - (based on molecular structure)
  - **Danger of explosion:** Product does not present an explosion hazard.
    - (based on molecular structure)
  - **Explosion limits:** None
  - **Oxidizing properties**
    - The substance does not contain any groups associated with oxidising properties.
  - **Vapour pressure at 20°C:** 0.00147 Pa
  - **Bulk density at 20°C:** 1100 kg/m³
  - **Relative density at 20°C:** 1.81 g/cm³
  - **Evaporation rate**
    - Not determined.
      - This product is an inorganic solid
  - **Solubility in / Miscibility with water at 25°C:** 370 g/l
  - **Segregation coefficient (n-octanol/water):** Not applicable
    - This substance is an inorganic chemical.
  - **Viscosity:** Not applicable
    - This product is solid. Viscosity is only relevant to liquids.

- **9.2 Other information**
  - No further relevant information available.
10.3 Possibility of hazardous reactions
- Reacts with strong acids.
- Reacts with alkalis releasing ammonia.
- Reacts with oxidizing agents.

10.4 Conditions to avoid
To avoid thermal decomposition do not overheat.

10.5 Incompatible materials:
- Alkalis
- Mineral acids
- Incompatible with copper and its alloys
- Sodium hypochlorite

10.6 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

11.1 Information on toxicological effects

Acute toxicity:
- LD/LC50 values relevant for classification:
  - no classification is necessary
  - 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)

Primary irritant effect:
- Irritation of skin equiv. to OECD 404 none (rabbit)
- Irritation of eyes equiv. to OECD 405 none (rabbit)

7783-28-0 diammonium hydrogenorthophosphate
- Sensitisation OECD 429, EC B42 EPA none (mouse)

Additional toxicological information:
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
The substance is not subject to classification according to the latest version of the EU lists.

Toxicokinetics, metabolism and distribution
- This product dissociates into NH₄⁺ and phosphate ions.
- For risk assessment purposes oral absorption is considered to be 100%, inhalation absorption 100% and dermal absorption 10%.

Repeated dose toxicity
- No reliable study with this product is present.
- This study is conducted on an analogous substance. (read-across)
- no classification is necessary

7783-28-0 diammonium hydrogenorthophosphate
- Oral NOAEL 250 mg/kg bw/day (rat) (OECD 422, subacute)
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- Mutagenicity:
  - None according to OECD 471 and OECD 473 for 7783-28-0 diammonium hydrogenorthophosphate and OECD 476 for 7722-76-1 ammonium dihydrogenorthophosphate

- 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

12.1 Toxicity

- Aquatic toxicity:
  - **7783-28-0 diammonium hydrogenorthophosphate**
    - EC50/72 h (static) >100 mg/L (algae) (OECD 201)
    - NOEC>100mg/L, freshwater
  - **8011-76-5 Superphosphate (SSP)**
    - LC50/72 h 1790 mg/L (Daphnia carinata)
      - freshwater
  - **7722-76-1 Ammonium dihydrogenorthophosphate**
    - LC50/96 h (static) >85,9 mg/L (fish Oncorhynchus mykiss) (OECD 203)
      - freshwater

12.2 Persistence and degradability

The substance is inorganic; therefore no biodegradation tests are applicable.

12.3 Bioaccumulative potential

This substance is highly water soluble and dissociating.

12.4 Mobility in soil

This substance is highly water soluble and dissociating. Low potential for adsorption (based on substance properties).

- Other information:
  - This substance is highly water soluble and dissociating.
  - Low potential for adsorption (based on substance properties).

- Behaviour in sewage processing plants:

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Effective concentration</th>
<th>Method</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7783-28-0 diammonium hydrogenorthophosphate</td>
<td>EC50/3 h (static) 100 mg/L (activated sludge) (OECD 209, C.11, ISO 8192, freshwater)</td>
<td>NOEC (3h)&gt;100mg/L</td>
<td></td>
</tr>
</tbody>
</table>

- 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.
**Trade name:** MAP

(Contd. of page 7)

- **General notes:**
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **12.5 Results of PBT and vPvB assessment**
  - **PBT:** No assessment is required for inorganic substances.
  - **vPvB:** No assessment is required for inorganic substances

- **12.6 Other adverse effects**
  No further relevant information available.

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**13 Disposal considerations**

- **13.1 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 packaging:**
    - **Recommendation:**
      Packaging may be reused or recycled after cleaning. Disposal must be made in accordance with Local Authority requirements.

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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**14 Transport information**

- **14.1 UN-Number** None
- **14.2 UN proper shipping name** None
- **14.3 Transport hazard class(es)** None
- **DOT, ADR, IMDG, IATA** None
  - **Class** None

- **14.4 Packing group** Not applicable
- **14.5 Environmental hazards:** None
- **Marine pollutant:** No
- **14.6 Special precautions for user** None
- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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**15 Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  Directive 2000/60 EC (phosphates)
  Labelling according to Regulation (EC) No 1272/2008 Void
  Hazard pictograms Void
  Signal word Void
  Hazard statements Void

- **National regulations:**
  Additional classification according to Decree on Hazardous Materials, Annex II: None

(Contd. on page 9)
Trade name: MAP

- Other regulations, limitations and prohibitive regulations
- Substances of very high concern (SVHC) according to REACH, Article 57 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

- 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

* 16 Other information

- Department issuing MSDS: EHS UNIT in ISRAEL
- Contact:
  Dr. J. Lati
  Tel.: +972-8-6465-341
  Fax.: +972-8-6465-342
  E-mail: lati@dsw.co.il
- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - ICAO: International Civil Aviation Organization
  - GHS: Globally Harmonized System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - DNEL: Derived No-Effect Level (REACH)
  - PNEC: Predicted No-Effect Concentration (REACH)
  - 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
- Sources
  - REACH Dossier, 2010
  - REACH CSR, 2010

- * Data compared to the previous version altered.
  The sections where alterations took place are marked with an asterisk in the left border

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