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

· 1.1 Product identifier
· Trade name: **MKP**
· Synonyms
  Phosphoric acid, monopotassium salt; Mono potassium phosphate; Potassium dihydrogen orthophosphate, multi-MKP, PeaK, Krista MKP, Krista
· Article number: 9744080200, 9744080100
· CAS Number: 7778-77-0
· EC number: 231-913-4
· Index number: None
· Registration number: 01-2119490224-41-0015

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses:
Fertilizer
Detergents
Water treatment
Food additives
Fire retarding agent
Processing aid/ Additive
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)
+972-8-6504915

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.

(Corded on page 2)
Trade name: MKP

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
  - 7778-77-0 potassium dihydrogenorthophosphate
- EC number: 231-913-4
- 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 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: Phosphorus oxides (e.g. P2O5)

5.3 Advice for firefighters
- Protective equipment: Wear fully protective suit.
Safety data sheet
according to 1907/2006/EC and 453/2010/EC

Printing date 08.09.2011    Revision: 08.09.2011

Trade name: MKP

- Mouth respiratory protective device.

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

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**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.

- **Information about fire - and explosion protection:**
  - The product is not flammable.
  - No special measures required.

- **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:**
    - Store away from oxidizing agents.
    - Do not store together with alkalis (caustic solutions).

- **Further information about storage conditions:**
  - Protect from humidity and water.
  - Store in a cool place.

- **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: 4.07 mg/m³
    - For general population:
      - Long-term-systemic effects (inhalation) DNEL: 3.04 mg/m³

- **PNECs**
  - PNEC aqua (freshwater): 0.05 mg/L
  - PNEC aqua (marine water): 0.005 mg/L
  - PNEC aqua (intermittent releases): 0.5 mg/L
  - PNEC STP: 50 mg/L

(Contd. on page 4)
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.
Filter P2
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: Protective work 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:
Form: Crystalline
Colour: White
Odour: Odourless
pH-value (208 g/l) at 20°C: 4.2-4.5
Change in condition
Melting point/Melting range: 252.6°C
Boiling point/Boiling range: >450°C
Flash point: Not applicable.
This product is inorganic substance.
Trade name: MKP

- **Flammability (solid, gaseous):** Product is not flammable. (based on molecular structure)
- **Ignition temperature:** Not applicable
- **Decomposition temperature:** >450°C Thermal decomposition on losing water.
- **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**
  - None
  - The substance does not contain any groups associated with oxidising properties.
- **Vapour pressure at 25°C:** 4.5x10^-15 Pa
- **Density at 20°C:** 2.34 g/cm³
- **Bulk density at 20°C:** 1150-1200 kg/m³
- **Solubility in / Miscibility with water at 20°C:** 208 g/l
- **Segregation coefficient (n-octanol/water):** Not applicable
  - This substance is 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 Stability and reactivity**
  - **10.1 Reactivity** Reacts with alkali (lyes).
  - **10.2 Chemical stability** No decomposition if used and stored according to specifications.
  - **10.3 Possibility of hazardous reactions** Reacts with oxidizing agents.
  - **10.4 Conditions to avoid**
    - Water
    - To avoid thermal decomposition do not overheat.
  - **10.5 Incompatible materials:** Alkalis, Oxidizing agents
  - **10.6 Hazardous decomposition products:**
    - Formation of toxic gases is possible during heating or in case of fire.
    - Phosphorus oxides (e.g. P2O5)
  - **Additional information:** This product is hygroscopic.
11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LD/LC50 values relevant for classification:
no classification is necessary

<table>
<thead>
<tr>
<th>Compound</th>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>14887-42-4 Potassium pentahydrogen bis(phosphate)</td>
<td>Dermal</td>
<td>LD50 &gt;2000 mg/kg (rabbit) (OECD 402)</td>
</tr>
<tr>
<td>7558-80-7 Sodium dihydrogenorthophosphate</td>
<td>Inhalative</td>
<td>LC50/4 h &gt;0.83 mg/l (rat) (OECD 403) the maximum attainable concentration</td>
</tr>
<tr>
<td>7778-77-0 Potassium dihydrogenorthophosphate</td>
<td>Oral</td>
<td>LD50 &gt;2000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

Primary irritant effect:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Effect</th>
<th>Species</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>7558-80-7 Sodium dihydrogenorthophosphate</td>
<td>Sensitisation</td>
<td>OECD 429, EC B.42</td>
<td>none (mouse)</td>
<td></td>
</tr>
<tr>
<td>7778-77-0 Potassium dihydrogenorthophosphate</td>
<td>Irritation of skin</td>
<td>OECD 404</td>
<td>not irritating (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irritation of eyes</td>
<td>OECD 405, EC B.5</td>
<td>not irritating (rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

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.

Toxicokinetics, metabolism and distribution

This product dissociates into potassium and phosphate ions, which are normal body and nutritional components.

This substance is not considered to have bioaccumulative potential as it is highly soluble in water and phosphate levels in the body are regulated via homeostasis.

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)

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)

Mutagenicity:
None

Sodium and potassium phosphates are routinely used in the nutrient broths that support bacterial colonies in the laboratory and as such bacteria are constantly exposed to these inorganic phosphates. The constant exposure of bacteria to these materials suggests that they pose no inherent risk of genotoxicity.

Carcinogenicity:
no data available
(no carcinogenicity study needs to be performed as this substance is not genotoxic)

Toxicity for reproduction:
no classification is necessary
12 Ecological information

12.1 Toxicity

Aquatic toxicity:
Inorganic phosphates are not considered to be toxic to aquatic species. No reliable study with this product is present. This study is conducted on an analogous substance. (read-across)

6922-99-4 Tripotassium trihydrogen diphosphate dihydrate
EC50/48 h (static) >100 mg/L (Daphnia magna) (OECD 202, freshwater)
EC50/72 h (static) >100 mg/L (algae) (OECD 201, freshwater)
LC50/96 h >100 mg/L (fish Oncorhynchus mykiss) (OECD 203, freshwater, semi-static)

12.2 Persistence and degradability
The substance is inorganic; therefore no biodegradation tests are applicable. This product dissociates into potassium and phosphate ions, which cannot be further degraded.

12.3 Bioaccumulative potential
Does not accumulate in organisms
This product dissociates into potassium and phosphate ions, which are ubiquitous in the environment.

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

Other information:
Product should not get in higher quantities into waste water because it may act as a plant nutrient and cause eutrophication.

Behaviour in sewage processing plants:

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Effective concentration Method</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7758-11-4 dipotassium hydrogenorthophosphate</td>
<td>EC50/3 h &gt;1000 mg/L (activated sludge) (OECD 209)</td>
<td>NOEC (3 h): 1000 mg/L</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.

General notes:
Generally not hazardous for water
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.
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.

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.

14 Transport information

14.1 UN-Number

None

14.2 UN proper shipping name

None

14.3 Transport hazard class(es)

DOT, ADR, IMDG, IATA

Class

None

14.4 Packing group

None

14.5 Environmental hazards:

Marine pollutant:

No

14.6 Special precautions for user

Not applicable.

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

None

Transport/Additional information:

Not dangerous according to the above specifications.

UN ”Model Regulation”:

None

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

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
Australia (AICS) : listed
Japan (ENCS) : listed
Korea (KECI) : listed
Philippines (PICCS) : listed
Trade name: MKP

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
- Disclaimer
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