Monopotassium phosphate

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

1.1. Product identifier

Product form : Substance
Trade name : Monopotassium phosphate; HI- M 235; HAIFA MKP
Chemical name : Potassium dihydrogenorthophosphate
IUPAC name : Potassium dihydrogen phosphate
EC no : 231-913-4
CAS No. : 7778-77-0
REACH registration No. : 01-2119490224-41
Formula : KH2PO4

EC-FERTILISER : B.4

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

1.2.1. Relevant identified uses

Main use category : Industrial use
Professional use
Consumer use
Function or use category : Fertilisers, food/feedstuff additives, flame retardants, laboratory chemicals, processing aids

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Haifa North West Europe NV
Generaal de Wittelaan 17, bus 16
B-2800 Mechelen - België
T +32 15 270811 - F +32 15 27 08 15
NorthWestEurope@haifa-group.com - www.haifa-group.com

1.4. Emergency telephone number

<table>
<thead>
<tr>
<th>Country</th>
<th>Official advisory body</th>
<th>Address</th>
<th>Emergency number</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit</td>
<td>Avonley Road</td>
<td>0870 243 2241</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP].

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.
Safety Data Sheet
according to Regulation (EC) No. 453/2010

Monopotassium phosphate

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Directive 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monopotassium phosphate</td>
<td>(Main constituent)</td>
<td>&gt; 98</td>
<td>Not classified</td>
</tr>
<tr>
<td>(CAS No.) 7778-77-0</td>
<td>(EC no) 231-913-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(REACH-no) 01-2119490224-41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
- Check the vital functions.
- Unconscious: maintain adequate airway and respiration.
- Respiratory arrest: artificial respiration or oxygen.
- Cardiac arrest: perform resuscitation.
- Victim conscious with laboured breathing: half-seated.
- Victim in shock: on his back with legs slightly raised.
- Vomiting: prevent asphyxia/aspiration pneumonia.
- Prevent cooling by covering the victim (no warming up).
- Keep watching the victim.
- Give psychological aid.
- Keep the victim calm, avoid physical strain.
- Depending on the victim's condition: doctor/hospital

First-aid measures after inhalation:
- Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- Artificial respiration and/or oxygen if necessary.

First-aid measures after skin contact:
- Rinse with water. Soap may be used.
- Take victim to a doctor if irritation persists.
- Remove contaminated clothing immediately.
- Rinse skin with plenty of water or shower.
- Wash contaminated clothing before reuse.

First-aid measures after eye contact:
- Rinse immediately with plenty of water for 15 minutes.
- Remove contact lenses, if present and easy to do.
- Continue rinsing.
- Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:
- Rinse mouth with water. Victim is fully conscious; immediately induce vomiting.
- If victim conscious and alert, give 1-2 glasses of water to drink.
- Consult a doctor/medical service if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation:
- Coughing. Irritation of the nasal mucous membranes.

Symptoms/injuries after skin contact:
- Repeated or prolonged skin contact may cause irritation.

Symptoms/injuries after eye contact:
- Redness of the eye tissue. Slight irritation.

Symptoms/injuries after ingestion:
- After absorption of high quantities: Nausea. Vomiting.

Chronic symptoms:
- On continuous/repeated exposure/contact: Possible inflammation of the respiratory tract.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Follow the advices in chapter 4.1.

Full text of R-, H- and EUH-phrases: see section 16

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Monopotassium phosphate

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: Water, foam, powder, CO2.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Direct fire hazard: Non combustible.
Explosion hazard: No direct explosion hazard.
Reactivity: Reacts violently with (strong) acids/bases.

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind, consider evacuation and have neighbourhood close doors and windows.
Firefighting instructions: Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting: Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Ensure adequate air ventilation.

6.1.1. For non-emergency personnel
Protective equipment: Wear protective gloves/protective clothing/eye protection as advised in section 8. Impervious footwear must be worn.
Emergency procedures: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders
Protective equipment: Wear suitable respiratory equipment in case of insufficient ventilation or in case of prolonged exposure. See also the information in “For non-emergency personnel”.

6.2. Environmental precautions
Stop leaks if possible. Prevent uncontrolled discharges into the environment (rivers, water courses, sewers etc.).

6.3. Methods and material for containment and cleaning up
For containment: Stop leak if safe to do so.
Methods for cleaning up: Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information: Do not wash out with water in a sensitive environment. Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.

6.4. Reference to other sections
See section 1 for emergency contact information.
See section 8 for information on appropriate personal protective equipment.
See section 13 for additional waste treatment information.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Use sufficient ventilation. Avoid raising dust. Wear protective gloves/protective clothing/eye protection as advised in section 8. Avoid contact with skin and eyes. Clean contaminated clothing. Keep container tightly closed. Meet the legal requirements.

Hygiene measures: Always wash hands after handling the product. Do not eat, drink or smoke during use.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.
Storage conditions: Keep preferably in the original container.
Heat-ignition: Keep substance away from: heat sources.
Prohibitions on mixed storage: Keep substance away from: (strong) acids, (strong) bases, oxidizing agents, water/moisture.
Storage area: Store in a dry area. Keep container in a well-ventilated place. Store at ambient temperature. Meet the legal requirements.
Special rules on packaging: Special or additional requirements: closing, clean, correctly labelled. Meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials: Suitable material: stainless steel, paper, synthetic material, glass.

7.3. Specific end use(s)
Not classified as dangerous. Exposure scenarios have not been made.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL/DMEL (Workers)</td>
</tr>
<tr>
<td>Long-term - systemic effects, inhalation</td>
</tr>
<tr>
<td>DNEL/DMEL (General population)</td>
</tr>
<tr>
<td>Long-term - systemic effects, inhalation</td>
</tr>
<tr>
<td>PNEC (Water)</td>
</tr>
<tr>
<td>PNEC aqua (freshwater)</td>
</tr>
<tr>
<td>PNEC aqua (marine water)</td>
</tr>
<tr>
<td>PNEC aqua (intermittent, freshwater)</td>
</tr>
<tr>
<td>PNEC (STP)</td>
</tr>
<tr>
<td>PNEC sewage treatment plant</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Ensure good ventilation of the work station. Care for eyewashstations and security showers at the workplace.

Personal protective equipment:

Hand protection: Gloves.
Material selection gloves: Good resistance gives: rubber. Take advice to your gloves' supplier.
Skin and body protection: Wear suitable protective clothing. Impervious footwear must be worn.
Respiratory protection: Dust production: dust mask with filter type P1.
Environmental exposure controls: Do not allow to enter drains or water courses.
**Monopotassium phosphate**

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Crystalline solid. Crystalline powder. Grains.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>136.09 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>White</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>pH</td>
<td>4.5 (1 %)</td>
</tr>
<tr>
<td>Melting point</td>
<td>± 253 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 1 mPa</td>
</tr>
<tr>
<td>Density</td>
<td>2.3 kg/l</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td></td>
<td>Water: 22 g/100ml</td>
</tr>
<tr>
<td>Self ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>400 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>not explosive</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>not oxidising</td>
</tr>
</tbody>
</table>

9.2. Other information

Minimum ignition energy: Not applicable

VOC content: Not applicable

Other properties: Hygroscopic. Substance has acid reaction.

**SECTION 10: Stability and reactivity**

10.1. Reactivity

Reacts violently with (strong) acids/bases.

10.2. Chemical stability

Hygroscopic. The product is stable at normal handling- and storage conditions.

10.3. Possibility of hazardous reactions

Reacts with (some) bases.

10.4. Conditions to avoid

Avoid high temperatures. Prevent moisture contact.

10.5. Incompatible materials

Keep substance away from: alkalis.

10.6. Hazardous decomposition products

Decomposes on exposure to temperature rise: release of toxic/corrosive/combustible gases/vapours (phosphine).

On burning: release of toxic and corrosive gases/vapours (phosphorus oxides).
 SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified (Based on available data, the classification criteria are not met)

<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>7100 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>&gt; 4640 mg/kg (Rabbit)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified (Based on available data, the classification criteria are not met)

Serious eye damage/irritation: Not classified (Based on available data, the classification criteria are not met)

Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure): Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure): Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard: Not classified (Based on available data, the classification criteria are not met)

Potential Adverse human health effects and symptoms: 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.

Other information: Information on Effects: refer to section 4.

 SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Classification concerning the environment: not applicable.


<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>&gt; 900 mg/l (48 Hours; Leuciscus idus)</td>
</tr>
<tr>
<td>EC50 other aquatic organisms 1</td>
</tr>
<tr>
<td>2 ppm (672 Hours; Potamogeton sp.; O2 EVOLUTION)</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms 1</td>
</tr>
<tr>
<td>1 ppm (672 Hours; Potamogeton sp.; O2 EVOLUTION)</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
</tr>
<tr>
<td>1 ppm (672 Hours; Elodea sp.; O2 EVOLUTION)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>In accordance with column 2 of REACH Annex VII, the ready biodegradability test does not need to be conducted as the substance is inorganic.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
<tr>
<td>Not applicable</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Monopotassium phosphate (7778-77-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
<tr>
<td>Soluble in water.</td>
</tr>
</tbody>
</table>
Monopotassium phosphate

SECTION 12: Ecological information

12.5. Results of PBT and vPvB assessment
This substance/mixture does not meet the PBT- and/or vPvB- criteria of REACH, annex XIII.

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
EURLW code : 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : This material and its container must be disposed of in a safe way. Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.
Waste disposal recommendations : Recycle/reuse. Do not discharge into surface water. Remove waste in accordance with local and/or national regulations.
Additional information : Non hazardous waste.

SECTION 14: Transport information

No dangerous good in sense of transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
VOC content : Not applicable
EURLW code : 06 03 14

15.1.2. National regulations
Regional legislation : Ensure all national/local regulations are observed.

15.2. Chemical safety assessment
A chemical safety assessment has been carried out

SECTION 16: Other information

Version : 3.1
Revision date : 18-12-2012
Date of issue : 06-02-2009
Supersedes : 09-01-2012
Indication of changes : This safety data sheet is fully revised according to the CLP and REACH regulations.
Data sources : BIG-database
ECHA Website: Information on Registered Substances
Handbook of Chemistry and Physics CRC Press Inc
Information from suppliers
REACH registration dossier.
Abbreviations and acronyms : CLP = Classification, labelling and packaging
DNEL = Derivative No Effect Level
PNEC = Predicted No Effect Concentration
REACH = Registration, evaluation and autorisation of chemicals.
Training advice : Before using/handling the product one must read carefully the MSDS.

Company disclaimer
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