

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

1.1. Product identifier

Product form	: Substance
Trade name	: Kalafos
Chemical name	: potassium dihydrogenorthophosphate
IUPAC name	: Potassium dihydrogen phosphate
EC-No.	: 231-913-4
CAS-No.	: 7778-77-0
REACH registration No	: 01-2119490224-41-0015
Formula	: KH ₂ PO ₄
Synonyms	: mono potassium phosphate / MKP / Kalafos
Product group	: Raw material
BIG no	: 14583

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: Fertilizer
Use of the substance/mixture	: Agriculture, forestry, fishery

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Anorel NV
 Lintsesteenweg 632
 2540 Hove
 T +3234880233
anorel@anorel.net - www.anorel.net

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
Israel	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096 Haifa	+972 4 854 1900	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%
Monopotassium Phosphate	(CAS-No.) 7778-77-0 (EC-No.) 231-913-4 (REACH-no) 01-2119490224-41-0015	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Get medical advice/attention if you feel unwell. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: May cause moderate irritation, including burning sensation, tearing, redness or swelling.
Symptoms/effects after eye contact	: May cause slight irritation.
Symptoms/effects upon intravenous administration	: Not expected to be a primary route of exposure.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Reactivity in case of fire	: Toxic fumes may be released.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Phosphorus oxides/acids.

5.3. Advice for firefighters

Precautionary measures fire	: Evacuate area. Keep upwind.
Firefighting instructions	: Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Do not fight fire when fire reaches explosives. Dilute toxic gases with water spray. Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Do not eat, drink or smoke in areas where product is used.
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6.1.1. For non-emergency personnel

Protective equipment	: Provide adequate ventilation. Wear personal protective equipment.
Emergency procedures	: Ventilate spillage area. Mark the danger area. Wash contaminated clothes.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

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6.3. Methods and material for containment and cleaning up

For containment	: Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.
Methods for cleaning up	: Large spills: scoop solid spill into closing containers. Mechanically recover the product. Stop dust cloud by covering with sand/earth or soda ash.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Avoid dust formation. Provide good ventilation in process area to prevent formation of vapour. Wear personal protective equipment. General protective and hygienic measures.
Hygiene measures	: Observe normal hygiene standards.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a well-ventilated place. Keep cool.
Storage temperature	: 20 °C
Heat and ignition sources	: Keep away from ignition sources. Heat sources.
Storage area	: Store in a well-ventilated place. Store in a dry area. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Kalafos (7778-77-0)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	4,07 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, inhalation	3,04 mg/m³
Long-term - local effects, inhalation	3,04 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0,05 mg/l
PNEC aqua (marine water)	0,005 mg/l
PNEC aqua (intermittent, freshwater)	0,5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	50 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment:

In case of dust production: protective goggles. Gloves. Dustproof clothing. Dust formation: dust mask.

Hand protection:
Nitrile rubber gloves
Eye protection:
Safety glasses. In case of dust production: protective goggles
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Dust/aerosol mask with filter type P1

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Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystals.
Molecular mass	: 136,09 g/mol
Colour	: Colourless. white.
Odour	: odourless.
Odour threshold	: No data available
pH	: 4,5 (1 %)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 253 °C
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 400 °C
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: Not applicable
Relative density	: 2,34 (20 °C)
Density	: 2338 kg/m³
Solubility	: Soluble in water. Water: 22 g/100ml
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

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

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with oxidising compounds.

10.4. Conditions to avoid

Heat. Moisture.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Monopotassium Phosphate (7778-77-0)

LD50 oral rat	7100 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 4640 mg/kg (Rabbit, Dermal)

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 4,5 (1 %)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 4,5 (1 %)
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)
Carcinogenicity	: 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)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)

Monopotassium Phosphate (7778-77-0)

NOAEL (oral, rat, 90 days)	< mg/kg bodyweight/day
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Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Potential adverse human health effects and symptoms	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Practically non-toxic through skin (LD50 skin 2000/5000 mg/kg). Slightly harmful by inhalation. Slightly irritant to respiratory organs. Slightly irritant to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	: Not dangerous for the ozone layer.
Ecology - water	: May cause eutrophication at high concentrations. pH shift. Harmful to aquatic life.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

Monopotassium Phosphate (7778-77-0)

LC50 fish 1	> 900 mg/l (48 h, Leuciscus idus)
EC50 other aquatic organisms 1	2 ppm 672 h potamogeton sp.
TLM other aquatic organisms 1	1 ppm 672 h; Potamogeton sp.
Threshold limit algae 1	1 ppm 672h; Elodea sp.

12.2. Persistence and degradability

Monopotassium Phosphate (7778-77-0)

Persistence and degradability	Biodegradability. Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Monopotassium Phosphate (7778-77-0)

Bioaccumulative potential	Low bioaccumulation potential.
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12.4. Mobility in soil

Monopotassium Phosphate (7778-77-0)

Ecology - soil	soluble in water.
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12.5. Results of PBT and vPvB assessment

Component	
Monopotassium Phosphate (7778-77-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Dispose in a safe manner in accordance with local/national regulations.
Waste treatment methods	: This material and its container must be disposed of in a safe way. Do not empty into drains; dispose of this material and its container in a safe way. Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Discharging into rivers and drains is forbidden. Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Non-hazardous waste.
European List of Waste (LoW) code	: 15 01 01 - paper and cardboard packaging 15 01 02 - plastic packaging 15 01 09 - textile packaging 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No

No supplementary information available

14.6. Special precautions for user

Overland transport

Transport regulations (ADR) : Not subject

Transport by sea

Transport regulations (IMDG) : Not subject

Air transport

Transport regulations (IATA) : Not subject

Inland waterway transport

Transport regulations (ADN) : Not subject

Rail transport

Transport regulations (RID) : Not subject

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

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No REACH Annex XVII restrictions

Kalafos is not on the REACH Candidate List

Kalafos is not on the REACH Annex XIV List

Monopotassium Phosphate is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Monopotassium Phosphate is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

VOC content : Not applicable

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 8173)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

TA Luft : 5.2.1 Total Dust, including Micro Dust

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:			
Section	Changed item	Change	Comments
	Date of issue	Modified	
	Revision date	Modified	
	Supersedes	Modified	
	Flammability (solid, gas)	Added	
2.1	Adverse physicochemical, human health and environmental effects	Added	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures after eye contact	Modified	
4.1	First-aid measures after ingestion	Modified	
5.1	Suitable extinguishing media	Modified	
5.3	Protection during firefighting	Modified	
6.1	Emergency procedures	Modified	
6.1	Protective equipment	Added	
6.2	Environmental precautions	Modified	
6.3	Other information	Added	
6.4	Reference to other sections (8, 13)	Modified	
7.1	Hygiene measures	Modified	
7.1	Precautions for safe handling	Modified	
7.2	Storage conditions	Added	
9.1	Explosive limits (vol %)	Added	

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9.1	Freezing point	Added	
9.1	Viscosity, kinematic	Added	
11.1	LD50 oral rat	Modified	
11.1	LD50 dermal rabbit	Modified	
13.1	Waste treatment methods	Modified	
15.2	Chemical safety assessment	Added	

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product