

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

1.1. Product identifier

Product form	: Substance
Trade name	: MONAFOS
EC-No.	: 231-764-5
CAS-No.	: 7722-76-1
REACH registration No	: 01-2119488166-29-0060
Type of product	: Fertilizer
Formula	: $\text{NH}_4\text{H}_2\text{PO}_4$
Synonyms	: ADP / ammonium acid phosphate / ammonium biphosphate / ammonium dihydro orthophosphate / MAP
Product group	: Raw material
BIG no	: 14612

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
Function or use category	: Fertilisers

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

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

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according to Regulation (EU) 2015/830

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%
ammonium dihydrogen phosphate	(CAS-No.) 7722-76-1 (EC-No.) 231-764-5 (REACH-no) 01-2119488166-29-0060	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Get medical advice/attention if you feel unwell. Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: If skin irritation or rash occurs: Call a physician immediately. Wash with plenty of water/.... Wash skin with plenty of water.
First-aid measures after eye contact	: Consult an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth out with water. Drink plenty of water as a precaution. Do not induce vomiting. Call a POISON CENTER/doctor if you feel unwell. Ingestion of large quantities: immediately to hospital. 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	: Inhalation of dust. Coughing. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: Slight irritation. Redness of the eye tissue.
Symptoms/effects after ingestion	: On ingestion in large quantities: nausea, vomiting.
Chronic symptoms	: Repeated contact. Possible inflammation of the respiratory tract.

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	: Non combustible.
Explosion hazard	: No reliable data available.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire	: Keep upwind. Evacuate area.
Firefighting instructions	: Dilute toxic gases with water spray.
Protection during firefighting	: Compressed air/oxygen apparatus. 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

6.1.1. For non-emergency personnel

Protective equipment	: Protective clothing. Gloves. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.
Emergency procedures	: Ventilate spillage area. Mark the danger area. Avoid formation of dust. No naked flames. Wash contaminated clothes. Keep upwind. Exposure to fire/heat: consider evacuation.

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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".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment

: Contain leaking substance, pump over in suitable containers. Knock down/dilute dust cloud with water spray. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray.

Methods for cleaning up

: Mechanically recover the product. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Scoop solid spill into closing containers.

Other information

: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

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. Wear personal protective equipment. Avoid dust formation. Comply with applicable regulations. Keep container tight closed. Thoroughly clean/dry the installation before use. Keep away from naked flames/heat. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Observe normal hygiene standards.

Hygiene measures

: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store in a well-ventilated place. Keep cool.

Heat and ignition sources

: Keep away from ignition sources. heat sources.

Information on mixed storage

: Keep away from. Strong acids, strong bases and oxidation agents.

Storage area

: Store in a well-ventilated place. Store in a dry area. meet the legal requirements. Store at ambient temperature.

Special rules on packaging

: closing. Clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials

: Suitable packing materials. stainless steel. paper. synthetic material. glass.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

MAP (7722-76-1)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	34,7 mg/kg bw/day
Long-term - systemic effects, inhalation	6,1 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	2,1 mg/kg bw/day
Long-term - systemic effects, inhalation	1,8 mg/m ³
Long-term - systemic effects, dermal	20,8 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	1,7 mg/l
PNEC aqua (marine water)	0,17 mg/l
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Gloves

Eye protection:

In case of dust production: protective goggles. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Dust production: dust mask with filter type P2

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	: Crystalline powder.
Molecular mass	: 115,03 g/mol
Colour	: white.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 3,6 - 4,0 (1 %)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 197 °C (1013.25 hPa, OECD 102: Melting Point/Melting Range)
Freezing point	: Not applicable
Boiling point	: Not applicable (decomposes), OECD 103: Boiling Point
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 197 °C (OECD 102: Melting Point/Melting Range, 1013.25 hPa)
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: < 0,0000147 hPa (20 °C, OECD 104: Vapour Pressure)
Relative vapour density at 20 °C	: Not applicable
Relative density	: No data available
Density	: 1810 kg/m³ (20 °C, OECD 109: Density of Liquids and Solids)
Solubility	: Soluble in water. Water: 38 g/100cm³ (20 °C)
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	: >=
VOC content	: Not applicable (inorganic)
Other properties	: Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

On heating/burning: release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, phosphorus oxides). Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) acids. Reacts with (some) bases: release of corrosive gases/vapours (ammonia).

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

MAP (7722-76-1)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 5000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	> 5 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Read-across, Inhalation (dust), 14 day(s))

Skin corrosion/irritation	: Not classified pH: 3,6 - 4,0 (1 %)
Serious eye damage/irritation	: Not classified pH: 3,6 - 4,0 (1 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Not irritant to skin. Practically non-toxic by inhalation (LC50 inh, rat > 5 mg/l/4h). Not irritant to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Ecology - air	: Not dangerous for the ozone layer.
Ecology - water	: Mild water pollutant (surface water). slightly harmful to fish. pH shift. May cause eutrophication at very low concentration. Insufficient data available on ecotoxicity.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

MAP (7722-76-1)	
LC50 fish 1	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	> 97,1 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

MAP (7722-76-1)	
Persistence and degradability	Biodegradability in water: no data available.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

MAP (7722-76-1)	
Bioaccumulative potential	Low bioaccumulation potential.

12.4. Mobility in soil

MAP (7722-76-1)	
Ecology - soil	No (test) data on mobility of the substance available.

12.5. Results of PBT and vPvB assessment

MAP (7722-76-1)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	

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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

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Do not discharge into surface water.
Additional information : Non-hazardous waste.
European List of Waste (LoW) code : 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

No REACH Annex XVII restrictions

MAP is not on the REACH Candidate List

MAP is not on the REACH Annex XIV List

ammonium dihydrogen 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.

ammonium dihydrogen 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

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VOC content : Not applicable (inorganic)

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 2309)

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
	Supersedes	Modified	
	Revision date	Modified	
	Date of issue	Modified	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures after eye contact	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after inhalation	Modified	
9.1	Melting point	Modified	
9.1	Boiling point	Modified	
9.1	Density	Modified	
9.1	Vapour pressure	Modified	
11.1	LD50 dermal rat	Modified	
11.1	LD50 oral rat	Modified	
11.1	LC50 inhalation rat (mg/l)	Modified	
12.1	ErC50 (algae)	Modified	
12.1	LC50 fish 1	Modified	
12.2	Biochemical oxygen demand (BOD)	Removed	
13.1	Regional legislation (waste)	Removed	

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