Safety Data Sheet
According to REACH Regulation 1907/2006/EC and Regulation (EU) 453/2010

Date of issue: 01-10-2015	Revision: 2.1

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Name: Monoammonium Phosphate Special Water-soluble
Monoammonium Phosphate Technical Grade (hereinafter MAP).

Chemical name: Ammonium Dihydrogenorthophosphate.
Synonyms: MAP, MAP Cristal, Mono Ammonium Phosphate Cristal.
CAS number: 7722-76-1
EC number: 231-764-5
Registration number under REACH Regulation: 01-2119488166-29-0004

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

Monoammonium Phosphate Special Water-soluble - direct fertilizer; formulation of fertilizing mixtures; manufacture of liquid fertilizers..
Monoammonium Phosphate Technical Grade - manufacture of flame retardants; manufacture of paints and coatings; manufacture of fire extinguishing powder.

Uses advised against: None.

1.3 Details of the supplier of the safety data sheet

Manufacturer:
Joint Stock Company “Voskresensk Mineral Fertilizers”
Zavodskaya Street, No.1, Voskresensk, Moscow Region, Russian Federation, 140200
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1.4 Emergency telephone number

Manufacturer/supplier: +7(496)4440-126 (24 h)
European emergency number: 112
UK National Poisons Emergency number: 0870 600 6266

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to REGULATION (EC) No. 1272/2008 on classification, labeling and packaging (CLP):
Not classified.

2.2 Label Elements

Not classified.

2.3 Other hazards

PBT/vPvB: not relevant (inorganic).
When heated to decomposition (>197 ºC) emits toxic fumes: ammonia and nitrogen oxides.
Large-scale release may lead to eutrophication of waterways.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Chemical name: Ammonium Dihydrogenorthophosphate.
CAS number: 7722-76-1
EC number: 231-764-5
Index number under CLP Regulation: Not available.

Index number R. 1272/2008	EC number	CAS number	Name	Concentration	Classification Regulation (EC) 1272/2008	Specific concentration limits and M-factor
--	231-764-5	7722-76-1	Ammonium Dihydrogenorthophosphate	> 98 % w/w	Not classified	--

4 FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General information:
In case of accident or if you feel unwell, seek medical advice immediately (show safety data sheet if possible).

4.1.2 Following inhalation:
Provide fresh air.
Rinse mouth immediately and drink large quantities of water.

4.1.3 After skin contact:
Remove contaminated clothing and shoes.
Wash skin thoroughly with mild soap and water.
Wash clothing before re-using.

4.1.4 Following eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

4.1.5 After ingestion:
Do not induce vomiting.
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

4.1.6 Self-protection of the first aider.
First aid assistant: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: High concentrations of dust in the air may cause scratching in the throat, cough.
Eye and skin contact: Prolonged contact with dust may cause discomfort.
Ingestion: Large quantities may cause disturbance of gastrointestinal tract.

4.3 Indication of any immediate medical attention and special treatment needed

Inhalation of gases, from a fire or thermal decomposition, that contain ammonia and oxides of nitrogen may cause irritation and have corrosive effects on the respiratory system. If necessary administer oxygen.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:
Carbon dioxide (CO_2).
Water.
Foam.
Dry extinguishing powder.

Extinguishing media which must not be used for safety reasons: No data available

5.2 Special hazards arising from the substance or mixture

Can be released in case of fire:
Ammonia.
Nitrogen oxides (NOx).

5.3 Advice for fire-fighters

Wear a self-contained breathing apparatus and chemical resistant suit.
Rubber boots.
Rubber gloves.
Goggles.

5.4 Additional information

No data available

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protection equipment.

6.2 Environmental precautions

Do not empty into drains or the aquatic environment.

6.3 Methods and material for containment and cleaning up

Remove mechanically, placing in appropriate containers for disposal.
Wash with generous amount of water.
Ensure all waste water is collected and treated via a waste water treatment plant.

6.4 Reference to other sections

See sections 8 and 13.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure adequate ventilation.
Do not breathe dust.
Do not empty into drains or the aquatic environment.
Wear personal protection equipment.
Avoid contact with skin and eyes.
Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, well-ventilated.
Protect from moisture.
Ensure adequate ventilation of the storage area.
Materials to avoid: alkalis, strong acids.
Packaging materials: Polyethylene.

7.3 Specific end use(s)

Fertilizer.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit values: Not established.

DNEL/DMEL: Workers			
Acute - systemic effects	Dermal (mg/kg bw/day)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified
Acute - local effects	Dermal (mg/cm^2)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified
Long-term - systemic effects	Dermal (mg/kg bw/day)	34.7	Repeated dose toxicity
	Inhalation (mg/m^3)	6.1	Repeated dose toxicity
Long-term – local effects	Dermal (mg/cm^2)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified
DNEL/DMEL: General population			
Acute - systemic effects	Dermal (mg/kg bw /day)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified
	Oral (mg/kg bw /day)	--	No hazard identified
Acute - local effects	Dermal (mg/cm^2)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified
Long-term - systemic effects	dermal(mg/kg bw /day)	20.8	Repeated dose toxicity
	Inhalation (mg/m^3)	1.8	Repeated dose toxicity
	oral(mg/kg bw /day)	2.1	Repeated dose toxicity
Long-term – local effects	Dermal (mg/cm^2)	--	No hazard identified
	Inhalation (mg/m^3)	--	No hazard identified

PNEC		
Freshwater (mg/l)	1.7	Extrapolation method: assessment factor
Freshwater sediments	--	No or insufficient data available at present
Marine water (mg/l)	0.17	Extrapolation method: assessment factor
Marine sediments	--	No or insufficient data available at present

Freshwater intermittent releases (mg/l)	17	Extrapolation method: assessment factor
Soil	--	No or insufficient data available at present
Air	--	No hazard identified
Microorganisms in sewage treatment (mg/l)	10	Extrapolation method: assessment factor

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Provide a good standard of general ventilation.
Provide local exhaust ventilation when required.

8.2.2 Individual protection measures, such as personal protective equipment

Personal protection equipment.
Respiratory protection:
Dust mask or respirator.
Hand protection:
Rubber gloves.
Eye protection:
Dust protection goggles.
Skin protection:
Cotton protective suits or overalls.
Impervious rubber safety shoes or leather boots.
General protection and hygiene measures:
In case of emergency clean water for eye and skin wash should be provided.

8.2.3 Environmental exposure controls

See section 6.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance (physical state and colour):	White crystalline solid.

	Sieve residue: 1 mm sieve– max. 5%, 0.125 mm sieve – min. 80%.
Odour:	Odourless.
Odour threshold:	Not applicable
pH:	4.4 – 4.7 (1 %-solution)
Melting point/freezing point:	197 °C (1013 hPa)
Initial boiling point and boiling range:	Decomposition (>197 ºC)
Flash point:	Not applicable (inorganic)
Flammability (solid, gas):	Non flammable (based on structure)
Upper/lower flammability or explosive limits:	Not applicable
Explosive properties:	Non explosive (based on structure)
Oxidising properties:	No oxidising properties (based on experience)
Vapour pressure:	0.00147 Pa (20 °C)
Relative density	1.81 (20°C)
Solubility:	No data available
Water solubility:	>100 g/L (20 °C)
Partition coefficient: n-octanol/water:	Not applicable (inorganic)

Viscosity:	Not applicable (solid)
Vapour density:	No data available
Evaporation rate:	No data available
Auto-ignition temperature:	Not applicable
Decomposition temperature:	>197 °C (1013 hPa)

9.2 Other information

Molecular weight: 115.
Organic peroxide: Based on the available data, the classification criteria are not met.
Self-heating: Based on the available data, the classification criteria are not met.
Pyrophoric liquid/solid: Based on the available data, the classification criteria are not met.
Corrosive to metals: No data available.
Substance which in contact with water emits flammable gases: Based on the available data, the classification criteria are not met.

10 STABILITY AND REACTIVITY

10.1 Reactivity

See section 10.5

10.2 Chemical stability

Stable.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

> 197 ºC (decomposition temperature)
Humidity.

10.5 Incompatible materials

Alkalis (alkalis).
Strong acid.

10.6 Hazardous decomposition products

When heated to decomposition (above 197 °C), emits toxic fumes of ammonia and oxides of nitrogen.

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

11.2 Acute effects (acute toxicity, irritation and corrosivity):

11.2.1 LD50 oral	> 2000 mg/kg bw (rat; male/female), OECD 425
11.2.2 LD50 dermal	>5000 mg/kg bw (rat; male/female), OECD 402
11.2.3 LC50 inhalation	> 5000 mg/m^3 aire (rat; male/female), OECD 403
11.2.4 Skin corrosion /irritation	Not irritating (rabbit), OECD 404
11.2.5 Serious eye damage/irritation	Not irritating (rabbit), OECD 405
11.2.6 Specific target organ toxicity – single exposure	Based on the available data, the classification criteria are not met.

11.3 Sensitisation:

Respiratory sensitisation: No data available.
Skin sensitisation: Not sensitising (mouse; female), OECD 429.

11.4 Repeated dose toxicity:

Specific target organ toxicity – repeated exposure: Based on the available data, the classification criteria are not met.
Oral (6 weeks): NOAEL = 250 mg/kg bw/day (rat; male/female), OECD 422.

11.5 CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Carcinogenicity: No carcinogenicity study needs to be proposed as MAP is not genotoxic.

Germ cell mutagenicity: Based on the available data, the classification criteria are not met.
Negative: OECD 471, OECD 473, OECD 476.

Reproductive toxicity: Based on the available data, the classification criteria are not met.
Fertility:
Oral (6 weeks): NOAEL (P and F) $\geq$ 1500 mg/kg bw/day (rat; male/female), OECD 422

Developmental toxicity:
Oral (6 weeks): NOAEL $\geq$ 1500 mg/kg bw/day (rat; male/female), OECD 422

Reproductive toxicity, effects on or via lactation: No data available.

11.6 Aspiration hazard:

No data available.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity to fish

LC_{50}	Species: *Oncorhynchus mykiss*

	> 85.9 mg/L (96 h) (freshwater; static), OECD 203
Chronic toxicity to fish	
NOEC	No data available.
Acute toxicity to crustaceans	
EC50	Species: *Daphnia carinata* 1790 mg/L (72 h) (mortality) (freshwater) *Standard methods for the examination of water and wastewater. 14th ed., American Public Health Association, New York (1975)*
Chronic toxicity to crustaceans	
NOEC	No data available.
Acute toxicity to algae and other aquatic plants	
EC50	Species: *Pseudokirchnerella subcapitata* > 100 mg/L (72 h) (freshwater; static) (growth rate and biomass), OECD 201.
Toxicity data on soil micro- and macro-organisms and other environmentally relevant organisms, such as birds, bees and plants	
No data available.	
12.2 Persistence and degradability	
Readily biodegradable	Not applicable (inorganic). In wastewater plant: in the anaerobic transformation of ammonium, one group of bacteria oxidizes ammonium to nitrite

	while another group oxidizes nitrite into nitrate. The average biodegradation rate in wastewater plant at 20 °C is 52 g N/kg dissolved solid/day.
Other relevant information	In aqueous solution, the substance is dissociated.
12.3 Bioaccumulative potential	
Experimental BCF	Low bioaccumulation potential.
Log Pow	Not applicable (inorganic).
12.4 Mobility in soil	
Low adsorption potential.	
12.5 Results of PBT and vPvB assessment	
PBT/vPvB: Not relevant (inorganic).	
12.6 Other adverse effects	
Large-scale release may lead to eutrophication of waterways.	
13 DISPOSAL CONSIDERATIONS	
13.1 Waste treatment methods	
Waste disposal according to official state regulations.	

14 TRANSPORT INFORMATION	
14.1 IMDG (sea)	
14.1.1 UN number:	Not regulated as dangerous under transport regulations.
14.1.2 class:	Not regulated as dangerous under transport regulations.
14.1.3 proper shipping name:	Not regulated as dangerous under transport regulations.
14.1.4 packing group:	Not regulated as dangerous under transport regulations.
14.1.5. Environmental hazards:	Not a marine pollutant.
14.2 ADR (road)/RID (rail)	
14.2.1 UN number:	Not regulated as dangerous under transport regulations.
14.2.2 class:	Not regulated as dangerous under transport regulations.
14.2.3 proper shipping name:	Not regulated as dangerous under transport regulations.
14.2.4 packing group:	Not regulated as dangerous under transport regulations.
14.2.5 Environmental hazards:	Not regulated as dangerous under transport regulations.

14.3 ICAO/IATA (air)	
14.3.1 UN number:	Not regulated as dangerous under transport regulations.
14.3.2 class:	Not regulated as dangerous under transport regulations.
14.3.3 proper shipping name:	Not regulated as dangerous under transport regulations.
14.3.4 packing group:	Not regulated as dangerous under transport regulations.
14.3.5 Environmental hazards:	Not regulated as dangerous under transport regulations.
14.4 Special precautions for user	
Not relevant.	
14.5 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
Not relevant.	
15 REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
Regulation (EC) No. 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilizers.	

15.2 Chemical safety assessment

Not applicable (the substance is not classified as dangerous).

16 OTHER INFORMATION

Abbreviations:
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No observed effect concentration.
LD50: Lethal Dose 50 %. The LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval.
LC50: Lethal Concentration 50 %. The LC50 corresponds to the concentration of a tested substance causing 50% lethality during a specified time interval.
EC50: Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50% changes in response (e.g. on growth) during a specified time interval.
BCF: Bioconcentration factor.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioccumulative.

Classification according GHS:
Mild irritant. Category 2B Eye irritation.
Label elements:
Symbol: No symbol.
Hazard statement: Causes eye irritation.
Signal word: Warning.