AGROPOLYCHIM

Extended SAFETY DATA SHEET
In accordance with Regulation (EC) 1907/2006 (REACH), Annex II, and amended with Regulation (EC) 2020/878

DIAMMONIUM PHOSPHATE (DAP)

Rev.7/ April 2022

1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY	
1.1 Product identifier	
Trade name:	Diammonum hydrogenorthophosphate
Other names:	Diammonium phosphate (DAP)
Chemical name:	Diammonum hydrogenorthophosphate
INDEX number as listed in Annex VI of CLP:	Not listed in tables under Appendix VI / CLP.
ID number of the C&L inventory:	Not listed in tables under Appendix VI / CLP.
CAS number:	7783 -28 -0
EC No	231-987-8
REACH registration no(s):	01-2119490974-22-0016
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Uses:	<u>Uses by workers in industrial settings:</u> 1: Manufacture of the substance, including loading and unloading, packaging, storage and laboratory agent. 2: Co-formulant in the manufacture of plant protection products. 3. Dissolution and / or formulation of a suspension. 4. Production of liquid, suspension or solid mineral fertilizer. 5. Seed processing. 6. Wastewater treatment: microorganisms growing in biofilters. 7. Oil purification. 8. Manufacture of fire retardants, ammonium polyphosphates; fire extinguishers. 9. Material for castings in dental technology. 10. Fermentation - nutrients. 11. Cigarettes - production of cigarette paper from tobacco waste products. 12. Production of paints and auxiliary chemicals, chemicals for textile fabrics. 13. Production of food products - pH regulator, precipitator. <u>Uses by professional workers:</u> 14: Agriculture: spreading on the surface or involvement in fertilizing open fields and / or forests, professional end use (fertilization of recreation areas: parks, public lawns, sports grounds, golf courses). Spraying on the surface of home gardens. 15: Fertilization of open fields: as liquid fertilizer. 16: Transfer from one container to another, loading / unloading of liquid and solid fertilizer by professional workers.

	17: Auxiliary material for the production of plant protection products. 18: As a fire extinguisher for fire extinguishers. 19: Mixing fertilizers, diluting fertilizers, including filling containers or transferring from one container to another. Consumer uses: 20: Agriculture: spraying on the surface or involvement in fertilization of open fields and / or forests, professional and consumer end use (fertilization of recreation areas: parks, public lawns, sports grounds, golf courses). Spraying on the surface of home gardens. 21: Co-formulant for plant protection products. 22: Extinguishing media.
Uses advised against:	No information available.
1.3 Details of the supplier of the safety data sheet	
Manufacturer/Importer/Supplier:	AGROPOLYCHIM AD BULGARIA Industrial zone 9160, DEVNYA Tel: +359 / 519 97 419 URL website: www.agropolychim.bg
Person responsible for the Safety Data Sheet (with e-mail address)	Eng. Miroslava Tsvetkova AGROPOLYCHIM AD BULGARIA Industrial zone 9160, DEVNYA Tel.: +359 / 519 97 419, mob: +359 885 897 661 Email: m.tsvetkova@agropolychim.bg
1.4 Emergency telephone number	
Emergency phone number in the company: Emergency phone number in Bulgaria – Toxicology Clinique “Pirogov” Medical Institute: International emergency phone number	Tel: + 359 / 519 97 530 (24 hours / day) on the production site +359 2 9154 233; +359 2 9154 409 (24 hours / day) Toxicology Clinique, Pirogov National Institute, Sofia 112

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance		
Classification in accordance with Regulation 1272/2008 (CLP)		
Hazard statement(s):	Not classified	---
2.2 Label elements		
Labelling in accordance with Regulation 1272/2008 (CLP)		

Hazard pictogram(s):		NA
Signal word		NA
Hazard statement(s):	Not classified	---
Precautionary statement(s):	Not classified	---
2.3 Other hazards		
PBT/vPvB criteria:		According to Annex XIII of Regulation (EC) № 1907/2006, it was not evaluated for PBT substances and vPvB was of inorganic origin.
Endocrine disrupting properties:		This substance does not have endocrine disrupting properties in relation to non-target organisms, as it does not meet the criteria set out in Section B of Regulation (EC) № 2017/2100.
Nanoforms:		This product does not contain nanoforms or nanoform-containing substances.
Other hazards:		Not identified.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance

According to the REACH Regulation, the substance diammonium hydrogen orthophosphate is a monocomponent (of inorganic origin). None of the constituent compounds are classified according to the CLP Regulation or on their own as a result of an assessment in the preparation of a Chemical Safety Report.

Chemical name	**CAS no.**	**EC no.**	**REACH Registration number**	**% Content**
Diammonium hydrogenorthophosphate	7783-28-0	231-987-8	01-2119490974-22-0016	~ 85 %
Ammonium dihydrogen orthophosphate	7722-76-1	231 -764 -5	01-2119488166-29-0020	~ 7 %
Ammonium sulfate	7783-20-2	231-984-1	01-2119455044-46-0172	~ 8 %

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Eye contact:	Flush/irrigate eyes with copious amounts of water for at least 15 minutes. Obtain medical attention if eye irritation persists.
Skin contact:	Wash the affected area thoroughly with soap and water. If necessary, remove clothing and wash the affected area thoroughly. If irritation persists, seek medical attention.
Ingestion:	If swallowed in large quantities, seek medical advice immediately. If possible, do not leave the victim unattended.

Inhalation:	Remove from source of exposure to dusts. Obtain medical attention if ill effects occur.
4.2 Most important symptoms and effects	
Acute effects	Not known
Delayed effects	Not known
4.3 Indication of any immediate medical attention and special treatment needed Note to physician: Inhalation of gases resulting from fire or decomposition containing ammonia may cause respiratory irritation. Delayed lung effects are also possible.	
5. FIRE-FIGHTING MEASURES	
5.1 Extinguishing media	
Suitable extinguishing media:	Use suitable extinguishing media. Avoid using too much water to prevent it from leaking into the sewer. Small fires: Water jet, foam, dry chemical or CO2. Large fires: Water jet, fog or foam.
Unsuitable extinguishing media:	Not known
5.2 Special hazards arising from the substance or mixture Heating above the decomposition point results in the formation of oxides of Nitrogen, Ammonia (NH3) and Phosphorus oxides.	
5.3 Advice for firefighters Use a self-contained breathing apparatus.	
6. ACCIDENTAL RELEASE MEASURES	
6.1 Personal precautions, protective equipment and emergency procedures Avoid walking on spilled product and exposure to dust. Avoid contact with eyes. Wear suitable protective clothing, including respiratory protection. Keep away from heat.	
6.2 Environmental precautions Take care to avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses.	
6.3 Methods and material for containment and cleaning up Any spillage of fertilizer should be cleaned up promptly, swept up and placed in a clean labelled open container for safe disposal, avoiding dusty conditions.	
6.4 Reference to other sections See section 8 for personal protective equipment and section 13 for waste disposal.	
7. HANDLING AND STORAGE	
7.1 Precautions for safe handling	
Technical measures/ Precautions:	Avoid excessive dust generation. Avoid unnecessary exposure to the atmosphere to prevent the absorption of moisture. Avoid contamination

	with combustible (eg diesel) and lubricants) and / or other incompatible materials. When carrying out loading and unloading activities for a longer period of time, use protective equipment such as gloves and respiratory protection. Carefully clean the equipment and facilities before handing them in for repair and / or inspection.
General occupation hygiene:	Do not eat, drink or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment when leaving contaminated areas.
7.2 Conditions for safe storage, including any incompatibilities	
Technical measures/ Storage conditions: Packaging materials:	Store in accordance with national and local regulations. Keep away from heat and flame. Keep away from combustible materials and substances listed in section 10. Make sure the product is not stored near hay, grain, straw, diesel fuel, etc. When stored loose, take the necessary measures to avoid mixing it with other fertilizers. Ensure high standards of storage in warehouses. Do not allow smoking and the use of open lights in storage areas. It is advisable to limit the size of the piles and to keep at least 1 m distance around the piles and packaged products. Any building used for storage must be dry and well ventilated. Plastic synthetic materials, steel and aluminum are suitable. Avoid use of copper.
RECOMMENDATIONS FOR THE USERS	Minimum time for a person to stay in the warehouses!
Incompatible products:	Bases, strong acids, copper and its alloys.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION	
8.1 Control parameters	
Regulated occupational exposure limit values:	Not known
Recommended exposure limits for the general public and consumers (as a result of the chemical safety assessment).	

Exposure pattern	**Derived No Effect Level (DNEL)**	
	Workers	**General population**
Oral[1]	---	0.42 mg / kg bw / day
Dermal[1]	8.3 mg / kg bw / day (systemic effect, long-term exposure)	4.17 mg / kg bw / day (systemic effect, long-term exposure)
Inhalation[1]	5.9 mg / m3 (systemic effect, long-term exposure)	1.45 mg / m3 (systemic effect, long-term exposure)

	[1]: As no acute toxicity hazard leading to the Classification and Labeling of the substance has been identified, the long-term DNEL is considered sufficient to ensure that no acute effects of the substance exposure occur (according to the ECHA Guidance on required information and chemical safety assessment). : Chapter R.8: Dose characterization [concentration] - for human health, May 2008 and Part C: Hazard Assessment, Draft new Chapter B.8 Scope of the Exposure Assessment, March 2010).
8.2 Exposure controls	
Appropriate engineering controls:	The use of adequate ventilation is good industrial practice. Avoid high dust concentrations and provide ventilation where necessary to maintain dust concentrations in accordance with national legislation.
Environmental exposure controls:	See section 6.
Individual protection measures, such as personal protective equipment	
Respiratory protection:	If dust concentration is high and/or ventilation is inadequate, use suitable dust mask or respirator if dust concentration with an appropriate filter (EN 143, 149, filters P2, P3).
Hands protection:	Wear suitable gloves (e.g. plastic, rubber or leather) when handling the product over long periods
Eye protection:	Safety glasses with side shields (EN 166).
Dermal protection:	Protective work clothes
Hygiene measures:	When handling the product do not eat, drink or smoke. Wash hands after handling and before eating, smoking and using the lavatory and at the end of the working period.
RECOMMENDATIONS FOR THE USERS	Machine fertilization with closed doors and windows of the machine cabin is recommended.
9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on basic physical and chemical properties	
Appearance:	White, grey or blackish crystals or granules.
Odour:	Odourless or slight ammonia odour
Melting / Freezing temperature:	Melting point 155ºC at 101.3 kPa, decomposing immediately after melting.
Boiling temperature:	Not applicable, decomposes before boiling
Flash point:	Not applicable.
Flammability:	Not applicable.
Explosive properties:	Non explosive
Oxidizing properties:	No known oxidizing properties
Vapour pressure at 20°C	0.0762 Pa
Relative density (D4 (20)):	1.62
Solubility in water:	>100 g/l at 20ºC
Partition coefficient	Not relevant as the substance is inorganic, considered to be low (based

n-octanol/water:	on high water solubility)
Viscosity:	Not applicable to solids
Specific conductivity:	No data
Auto flammability / self-ignition temperature:	Based on structure, use and transport information, not expected to be a self-heating substance.
Particle size distribution, 1 - 5 mm:	min 98%
Surface tension:	Not applicable (based on structure).

9.2 Other information

Molecular weight 132,06 (DAP); Inorganic, solid,. The substance is not classified as a physical hazard.

10. STABILITY AND REACTIVITY

10.1 Reactivity: Corrosivity

It can be corrosive to iron and mild steels, aluminum, zinc and copper.

10.2 Chemical stability

The product is stable under normal conditions of storage, handling and use (see section 7)

10.3 Possibility of hazardous reactions

Avoid welding work on equipment that may contain residues of the product before it is cleaned and washed.

10.4 Conditions to avoid

Heating above 155 °C (decomposes).

Contamination by incompatible materials.

Sources of heat or fire close to the product.

Heating under confinement.

Welding or hot work on equipment or plant which may have contained fertilizer without first washing thoroughly to remove all fertilizer.

10.5 Incompatible materials

Bases, strong acids, copper and its alloys.

10.6 Hazardous decomposition products

For fire situation: see Section 5

Ammonia is released upon reaction with strong bases or when heated. (See also Section 2 and 9)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects - about two thirds of the ingested phosphates are absorbed from the gastrointestinal tract in adults. Absorbed phosphates are almost completely excreted in the urine.

ACUTE TOXICITY	
Acute oral toxicity:	LD50 rat: > 2000 mg/kg lw (OECD guideline 425)
Acute dermal toxicity:	LD50 rat: > 5000 mg/kg lw (OECD guideline 402)
Acute inhalation toxicity:	LC50 rat:> 5000 mg / m3 (OECD 403, EC B.2 and EPA guidance)
CORROSION / SKIN IRRITATION	

Skin irritation:	Not scientifically justified due to the availability of adequate data from in vivo skin irritation tests. No irritating effects were observed.
Serious eye damage / Eye irritation:	Not scientifically justified due to the availability of adequate data from in vivo irritation tests. No irritating effects were observed.
Respiratory irritation:	No study available
RESPIRATORY AND SKIN SENSITIZATION	
Skin sensitization:	Not scientifically justified due to the availability of adequate data from in vivo irritation tests. No irritating effects were observed. It is not a sensitizing substance.
Respiratory sensitization:	No study available
REPRODUCTIVE TOXICITY	
Effect on fertility:	NOAEL in rats (P and F) ≥ 1,500 mg / kg bw / day, reproductive toxicity; Human - oral exposure: no adverse effects were observed; dermal and inhalation exposure - no information available.
Effect on development:	NOAEL in rats (P and F) ≥ 1,500 mg / kg bw / day, reproductive toxicity; Human - oral exposure: no adverse effects were observed; dermal and inhalation exposure - no information available.
TOXICITY - REPEATED DOSE	
System effects:	Oral exposure: NOAEL (systemic, 90 days) = 250 mg / kg bw / day, rats (OECD Guideline 422), with effects on dental plaque at higher exposure levels. Dermal exposure: no studies available. Inhalation exposure: no studies available.
Local effects:	Dermal exposure: no studies available. Inhalation exposure: no studies available.
OTHER ADVERSE EFFECTS	
Mutagenicity:	Negative (OECD Guideline 471), in vitro Negative (OECD Guideline 476), in vivo
Carcinogenicity:	It is not carcinogenic
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
Fish (acute):	LC50:**>** 100 mg / l (OECD Guideline 203)
Fish (long-term):	No data available.
Daphnia carinata (acute):	72-h LC 50: 1790 mg / l (based on mortality) 72-h LC 50: 1825 mg / l (based on mortality) for fresh water
Daphnia carinata (long-term):	No data

Algae: Observed NOEC concentration level:	EC50/LC50 fresh water: >100 mg/L EC10/LC10 or NOEC fresh water: 100 mg/L
12.2 Persistence and degradability	
Biodegradation:	Easily degradable by microorganisms.
Photolysis:	Does not photodegrade.
12.3 Bioaccumulative potential	
Octanol-water partition coefficient (K_{ow}):	Not relevant as the substance is inorganic, but considered to be low (based on high water solubility)
Bioconcentration factor (BCF):	Not applicable
12.4 Mobility in soil	
Adsorption coefficient:	Low adsorption potential (based on the properties of the substance).
12.5 Results of PBT and vPvB assessment As Diammonium phosphate is an inorganic substance, no assessment is required for PBT (resistance, bioaccumulation and toxicity) and vPvB (high resistance and bioaccumulation) according to Annex XIII.	
12.6. Endocrine disrupting properties There is no clinical evidence, that shows that DAP has endocrine disrupting properties..	
13. DISPOSAL CONSIDERATIONS	
Waste from residues:	Depending on degree and nature of contamination dispose of by use as fertilizer on farm, as raw material for liquid fertilizer, or to an authorised waste facility. Do not empty into drains; dispose of this material and its container in a safe way and in accordance with all applicable local and national regulations. See chapters 06 03 and 06 10 of the list of wastes (Commission Decision 2000/532/EC)
Packing / bags:	Empty the bag by shaking to remove as much as possible of its contents. If approved by local authorities, empty bags may be disposed of as non-hazardous material or returned for recycling.
14. TRANSPORT INFORMATION	

UN Number:	ADR/RID: Non classified ADN/ADNR: Non classified IMDG: Non classified ICAO/IATA: Non classified
Proper shipping name:	Diammonum hydrogenorthophosphate
Transport hazard classes:	Not classified
Rev06 ☐ Maritime transport of goods in bulk (MARPOL 73/78; IMO)	Not classified
Packaging group:	Not applicable
Special precautions:	Not identified

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture:	Regulation EC 1907/2006 (REACH) European Regulation on fertilizing products
15.2 Chemical safety assessment:	The substance is not classified as dangerous according to the criteria of Regulation 1272/2008/EU on Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) and therefore according to Clause 14 (4)) of the REACH Regulation does not require exposure and chemical safety assessment.

16. OTHER INFORMATION

The information provided in this safety data sheet is accurate, using our best knowledge, beliefs and information as of the date of its publication. This information is provided only as a guide for the safe handling, use, processing, storage, transportation, disposal and discharge, and cannot be considered as a guarantee or quality specification. The information relates only to the specified specific material and may not be valid for such material used in combination with any other materials or derivatives, unless specified in the text.

Classification according to Regulation 1272/2008 as described in Annex VI:
The substance is not classified as dangerous according to Regulation on Classification, Labeling and Packaging of Substances and Mixtures CLP (1272/2008 / EU).

Classification according to Regulation 1272/2008, own classification based on the performed Chemical Safety Assessment CSA:
Not classified separately according to CSA.

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