AGROPOLYCHIM

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

COMPLEX MINERAL FERTILIZER NPK 15-40-10; NPK 15-15-15 (10S); NPK 16-16-8 (12S); NPK 9-25-25 (1S); NPK 12-24-12 (S)

Revision 4/ Nov,2023

1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

1.1 Product identifier

Trade name:	NPK 15-40-10; NPK 15-15-15 (10S); NPK 16-16-8 (12S); NPK 9-25-25 (1S); NPK 12-24-12 (S)
Other names:	Complex mineral fertilizer
Chemical name:	Not applicable
INDEX number as listed in Annex VI of CLP:	Not applicable
ID number of the C&L inventory:	Not listed/ not applicable
CAS number:	Not applicable/ reaction mixture
EC number:	Not applicable/ reaction mixture
REACH registration no(s): Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Ammonium chloride Diammonium sulphate Dipotassium hydrogen orthophosphate Potassium chloride	 01-2119488166-29-0020 01-2119490974-22-0016 01-2119489385-24-0036 01-2119455044-46-0172 01-2119493919-15-0019 Exemption, natural raw material

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

Uses:	<u>Uses by workers in industrial conditions:</u> 1: Production of the substance, including loading and unloading, packaging, storage and laboratory agent. 2: Formulation and synthesis (including transfer from vessel to vessel, formulation of goods and mixtures). 3: Formulation of fertilizers, including mixing, packaging, dilution, loading and unloading activities and addition of micronutrients. 4: For the production of solid / liquid fertilizers 5: Use as a laboratory chemical <u>Uses by professionals:</u> 6: Formulation of fertilizers, including mixing, packaging, dilution, loading / unloading and addition of micronutrients and / or additives. 7: Formulation and synthesis of all kinds 8: Use as a dietary supplement - for professional workers Consumption: 9: Consumer end use - use as solid fertilizer - surface spreading in

	garden areas 10: Consumer end use - dilution of liquid fertilizers - surface spreading in garden areas 11: Consumer end use - as a fertilizer in greenhouses (including for pH control of solutions of fertilizers in acids).
Uses advised against:	No information available.
1.3 Details of the supplier of the safety data sheet	
Manufacturer:	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 Email: m.tsvetkova@agropolychim.bg
1.4 Emergency telephone number	
Emergency phone number in Bulgaria – Toxicology Clinique “Pirogov” Medical Institute: International emergency phone number	+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 mixture

Complex mineral fertilizer NPK (S) are inorganic multicomponent reaction mixture, obtained by chemical reaction/synthesis.

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:	No information available. No endocrine disrupting properties are known.
Nanoforms:	This product does not contain nanoforms or nanoform-containing substances.
Other hazards:	Not identified.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

Type: Multi-composition mixture, complex mineral fertilizer containing nutrients Nitrogen, Phosphorus and Potassium in different proportions, which determines the type of NPK.

Chemical name	**CAS no.**	**EC no.**	**Classification acc. 1272/2008/EO**	**% content**
Ammonium chloride, (NH_4Cl)	12125-02-9	235-186-4	Acute toxicity, cat. 4 H302; Eye irritant, cat. 2 H319	below 1%
Diammonium sulphate	7783-20-2	231-984-1	Not classified	3 – 15 %
Ammonium dihydrogen orthophosphate	7722-76-1	231 -764 -5	Not classified	20 - 60%
Diammonium hydrogen orthophosphate	7783-28-0	231-987-8	Not classified	50 - 80%
Dipotassium hydrogen orthophosphate (K_2HPO_4)	7758-11-4	231-834-5	Not classified	5 - 10%
Potassium chloride	7447-40-7	231-211-8	Not classified	10 – 30%

Occupational exposure limits are given in Section 8. The full text of the hazard statements is described in Section 16.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Eye contact:	Wash thoroughly with plenty of water for at least 15 minutes. In case of eye irritation - seek specialized medical attention.
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:	In case of ingestion of large quantities, seek medical advice immediately. If possible, do not leave the victim unattended.
Inhalation:	Remove from source of exposure to dusts. In case of illness, seek medical attention.

4.2 Most important symptoms and effects

Acute effects	Not known
Delayed effects	Not known. Exposure to decomposition products may cause delayed effects.

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. To the emergency help: metamoglobinaemia.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	Use appropriate 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 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

Avoid contamination of water sources and drainage, inform the authorities in case of accidental contamination of water reservoirs.

6.3 Methods and material for containment and cleaning up

Any spillage of fertilizer product should be cleaned immediately, swept and collected in clean and labeled open containers for safe disposal, avoid dusting.

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. Synthetic plastic materials - PP / PPE bags and packaging. Avoid using 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).	There are no identified (measured) exposure limits for the reaction mixture. Based on the measured exposure limits and DNELs obtained on the population and consumers obtained from chemical safety assessments of the individual substances involved, no risk of acute toxicity leading to product classification and labelling has been identified.

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 so as 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 the dust concentration is high and / or the ventilation is inadequate, use suitable dust masks or a respirator with a suitable filter for the corresponding dust concentration (EN 143, 149, R / P filters).
Hands protection:	Suitable gloves (eg leather or rubber) when working with the product for a long time.
Eye protection:	Safety glasses with side shields (EN 166)
Dermal protection:	Protective work clothes
Hygiene measures:	Do not eat, drink or smoke while handling the product. Wash your hands after handling the product and before eating, smoking or using the toilet, as well as at the end of the working day.
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 to grey crystals or granules.
Odour:	Odourless or slight ammonia odour
Melting temperature:	Depending on the composition, it may decompose before melting.
Boiling temperature:	Not applicable, decomposes before boiling
Flash point:	Not applicable. Do not ignite
Flammability:	Not applicable.
Explosive properties:	Non explosive
Oxidizing properties:	No known oxidizing properties
Vapour pressure at 20°C	< 1.47 x 10-3 Pa
Relative density:	950-1150 kg/m^3

pH (10% water solution)	7.2
Solubility in water:	100%; easily soluble in water
Partition coefficient n-octanol/water:	Not relevant as the substance is inorganic, considered to be low (based 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:	Over 98 %
Surface tension:	Not applicable (based on structure).

9.2 Other information

Not known

10. STABILITY AND REACTIVITY

10.1 Reactivity: Corrosivity

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

10.2 Chemical stability

Stable under recommended storage and handling conditions. Decomposes at 190 ° C.

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 190 ºC leads to decomposition. Contamination with incompatible materials. Sources of heat and fire nearby.

10.5 Incompatible materials

Bases, strong acids, copper and its alloys.

10.6 Hazardous decomposition products

Ammonia and oxides of nitrogen and phosphorus are released by reaction with strong bases or by heating to high temperatures (see sections 2 and 9).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

ACUTE TOXICITY	
Acute oral toxicity:	Based on data from the substances involved in the reaction mixture, the product is considered non-toxic or slightly toxic
Ammonium dihydrogen orthophosphate	LD50 rats:> 2000 mg / kg bw (OECD Guideline 425)
Diammonium hydrogen orthophosphate	LD50 rats:> 2000 mg / kg bw (OECD Guideline 425)
Ammonium chloride	LD50 rats:> 1410 mg / kg bw (OECD Guideline 425)

Dipotassium hydrogen orthophosphate	LD50 rats:> 2000 mg / kg bw (OECD Guideline 425)
Acute dermal toxicity: Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Ammonium chloride Dipotassium hydrogen orthophosphate	Based on data from the substances involved in the reaction mixture, the product is considered non-toxic or slightly toxic LD50 rats:> 5000 mg / kg bw (OECD Guideline 402) LD50 rats:> 5000 mg / kg bw (OECD Guideline 402) LD50 rats:> 2000 mg / kg bw (OECD Guideline 402) LD50 rats:> 2000 mg / kg bw (OECD Guideline 402)
Acute inhalation toxicity: Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Ammonium chloride Dipotassium hydrogen orthophosphate	Based on data from the substances involved in the reaction mixture, the product is considered non-toxic or slightly toxic LC50 rats:> 5000 mg / m3 (OECD 403, EC B.2 and EPA guidelines) LC50 rats:> 5000 mg / m3 (OECD 403, EC B.2 and EPA guidelines) No available data LC50 rats (4 h) 830 mg / m³ air (OECD 403 and EPA OPP 81-3 of the manual)
CORROSION / SKIN IRRITATION	
Skin irritation:	Based on data from the substances involved in the product, there are no indications of irritant effects.
Serious eye damage / Eye irritation:	Based on data from the substances involved in the product, there are no indications of irritant effects.
Respiratory irritation:	Based on data from the substances involved in the product, there are no indications of irritant effects.
RESPIRATORY AND SKIN SENSITIZATION	
Skin sensibilization	Based on studies and scientific data on the substances involved in the reaction mixture, there are no indications of adverse effects. No negative effects were observed. Not considered to be sensitizing.
Respiratory sensitization	No available information
REPRODUCTIVE TOXICITY	
Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Effect on fertility: Effect on development:	 NOAEL in rats (P and F) ≥ 1,500 mg / kg lw / day, reproductive toxicity**;** Human - oral exposure: no adverse effects were observed; dermal and inhalation exposure - no information available. NOAEL in rats (P and F) ≥ 1,500 mg / kg lw / day, reproductive toxicity**;** Human - oral exposure: no adverse effects were observed; dermal and inhalation exposure - no information available.

Dipotassium hydrogen orthophosphate Effect on fertility and development:	NOAEL in rats (P and F) ≥ 1000 mg / kg lw / day, reproductive toxicity**;** Human - oral exposure: no adverse effects were observed; dermal and inhalation exposure - no information available.
TOXICITY - REPEATED DOSE	
System effects: Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Ammonium chloride Dipotassium hydrogen orthophosphate Local effects:	 Dermal exposure: NOAEL: 255.6 mg / kg bw / day (rats) Inhalation exposure: NOAEC: 451.2 mg / kg bw / day (rats) Oral exposure: NOAEL 1695.6 mg / kg bw / day (rats) Inhalation exposure: NOAEL 322.88 mg / kg bw / day (dog) Dermal exposure: no studies available. Inhalation exposure: no studies available. Dermal exposure - no data available. Inhalation exposure: no data available.
OTHER ADVERSE EFFECTS	
Mutagenicity: Ammonium dihydrogen orthophosphate Diammonium hydrogen orthophosphate Ammonium chloride Dipotassium hydrogen orthophosphate	Based on studies and scientific data on the substances involved in the reaction mixture, there are no indications of adverse effects. in vitro: Negative (OECD Guidelines 473 and 471) in vivo: No genotoxicity tests are required, as all in vitro ones show the absence of genotoxic properties. No adverse effects on mutagenicity were observed No adverse effects on mutagenicity were observed
Respiratory irritation:	No data available.
Carcinogenicity:	No data available.
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
Fish (acute): Phosphates: Ammonium chloride	96-h LC50:> 100 mg / l (OECD Guideline 203) 96-h LC50> 100 mg / l (OECD Guideline 203)
Fish (long-term):	No data available.
Daphnia carinata (acute): Phosphates: Ammonium chloride:	Based on reliable studies performed with similar substances in the phosphate category, 48h-EC50 is> 100 mg /l. 48h-EC50 e >100 mg/l

Daphnia carinata (long-term): Ammonium chloride	NOEC (21 day): 14.6 mg/L
Algae: Phosphate: No Observed effect NOEC concentration level: Ammonium chloride:	EC50/LC50 fresh water: >100 mg/L EC10/LC10 or NOEC fresh water: 100 mg/L EC10 or NOEC marine water: 26.8 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 potential for adsorption (based on substance properties).
12.5 Results of PBT and vPvB assessment As Monoammonium 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, for endocrine disrupting properties.	
13. DISPOSAL CONSIDERATIONS	
Waste from residues:	Depending on the degree and type of pollution, treat either as a fertilizer for agriculture or as a raw material for the production of liquid fertilizer or treat in authorized facilities. Do not dispose of the material in the sewage system, treat the material and its packaging in a safe manner and in accordance with applicable local and national regulations. See classes 06 03 and 06 10 of the list of wastes (Commission Decision 2000/532 / EC)
Packing / bags:	Clean the emptied packages as well as possible by shaking them carefully. If permitted by local authorities, empty packages may be reused 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:	*Complex Mineral Fertilizer NPK 15-40-10; NPK 15-15-15 (10S); 16-16-8 (12S); 9-25-25 (1S)*
Transport hazard classes:	Not classified
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.

Hazard statements: (H-phrases):

H302- Harmful if swallowed

H319- Causes serious eye irritation

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

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