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| <b>TYPE DOCUMENT:</b> Working document<br><br><b>SAFETY DATA SHEET COMPLEX FERTILIZERS, NPK TYPE</b><br>(with higher than 70% ammonium nitrate content)<br><br>Code: FDS-BM-06-005-006 | Version      |
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According to EC Regulation no. 1907/2006 (REACH) / EC Regulation no. 1272/2008/ *Regulation no. 2020/878*.

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| <b>SECTION 1.</b> | <b>IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY</b> |
|-------------------|--|

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|--------------------------------|
| <b>1.1. Product identifier</b> |
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Name: COMPLEX FERTILIZERS NPK, NP OR NK TYPE (with higher than 70% ammonium nitrate content)

Other names: COMPLEX FERTILIZERS

Chemical formula: -

CAS number: -

EINECS number: -

ECHA reference number: for ammonium nitrate: 01- 2119490981- 27- 0064

ammonium sulphate: 01- 2119455044- 46- 0098

ammonium dihydrogenorthophosphate: 01- 2119488166- 29- 0047

diammonium hydrogenorthophosphate: 01- 2119490974- 22- 0044

potassium sulphate: 01- 2119489441- 34- 0029

calcium carbonate: 01- 2119486795- 18- 0070

calcium hydrogenorthophosphate: 01- 2119490064 - 41 - 0017

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| <b>1.2. Relevant identified uses of the substance or mixture and uses advised against</b> |
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Identified uses: chemical fertilizer

Uses advised against: none

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| <b>1.3. Details concerning the supplier of the Safety Data Sheet</b> |
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**Producer:**

Azomureș S.A.Tg.-Mureș, 300 Gheorghe Doja St., tel.0040-265 253 700, Romania

Fax: 0040-265 252 986, e-mail: [office@azomures.com](mailto:office@azomures.com), [www.azomures.com](http://www.azomures.com)

e-mail (competent person responsible for the SDS): [fds.azo@azomures.com](mailto:fds.azo@azomures.com)

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| <b>1.4. Emergency telephone number</b> |
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The institution responsible with providing information in case of a health emergency is The National Institute for Public Health, Department for the International Sanitary Regulation and Toxicological Information.

**Telephone: 0040-21.318.36.06, working hours: Monday – Friday from 8 a.m. to 3 p.m.**

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## SECTION 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

Complex fertilizers NPK, NP or NK type are inorganic, multi-constituent substances.

Complex fertilizers NPK, NP or NK type which have a higher ammonium nitrate content of 70% (ex.: 26-13-0; 27-13,5-0; 26-5-5; 27-6-6) are considered hazardous during transportation, according to ADR, RID and IMDG provisions.

The hazard of these sorts is given by the concentration of ammonium nitrate (higher concentration than 70%), also determining the CLP classification.

#### **Classification according to EC Regulation no. 1272/2008 (CLP)**

The classification according to CLP Regulation no. 1272/2008 is that for ammonium nitrate, as the concentration level exceeding 70% makes the 27-6-6; 26-5-5; 26-13-0; 27-13,5-0 sorts hazardous.

Hazard Classes/Categories: Oxidizing solid, Class 3

Serious damage of the eyes/irritation of the eyes, Class 2

Hazard statements H: H 272 - May intensify fire; oxidizer

H 319 - Causes serious eye irritation

#### **Human health hazard**

This product is not dangerous if handled accordingly.

Nevertheless, the following aspects will be taken into consideration:

Skin contact: may cause irritation in case of prolonged contact

Eye contact: may cause irritation in case of prolonged or repeated contact

Ingestion: no toxic effects in case of small quantities, in large quantities it may cause gastrointestinal disorders, and, in extreme cases (especially in children) it may cause methaemoglobinaemia, the "blue baby syndrome" and cyanosis (blueness around the mouth).

Inhalation: large quantities of dust containing this product may cause irritation of the nose and airways; the symptoms include sore throat and cough.

#### **Environmental hazards**

No environmental hazard assessment was conducted as ammonium nitrate presents little danger for aquatic organisms.

Due to the reduced hazardous potential on aquatic organisms, and its main effect, eutrophication, the substance is not considered dangerous for the environment, according to Community/national Regulations.

#### **Ignition or explosion hazard**

The fertilizer itself is not combustible, but it may sustain combustion even in the absence of air.

At approx. 170 °C the substance melts, slowly decomposing into ammonia and nitric acid.

At over 200 °C the decomposition is accelerated and the decomposition reaction may turn into a chain reaction if no immediate measures for cooling are taken, by spraying a maximum quantity of water (actual flooding). Decomposition products (nitrogen oxides) catalyze the reaction, causing an explosion.

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At high temperatures (over 400 °C) the fertilizer may ignite and burn, with simultaneous decomposition in nitrogen oxides. The decomposition may cause an explosion in case of contamination with incompatible materials, such as: fuels (gasoline, Diesel fuel), lubricants (petrolatum, oils), metallic powders and other materials specified in section 10.5.

## 2.2. Label elements

### Labeling according to CLP Regulation

Substance name: COMPLEX FERTILIZER CONTAINING AMMONIUM NITRATE

Producer:

Azomureș S.A.Tg.-Mureș, 300 Gheorghe Doja St., tel. 0040-265 253 700, Romania

Fax: 0040-265 252 986, e-mail: [office@azomures.com](mailto:office@azomures.com), [www.azomures.com](http://www.azomures.com)

Emergency telephone number: 0040-21.318.36.06, working hours: Monday - Friday from 8 a.m. to 3 p.m.

Hazard labels: symbols

GHS03 - flame over a circle

GHS07 - exclamation point

Warning word: Attention!



GHS03 - Oxidizer solid, class 3



GHS07 - Eye irritation, class 2

Hazard statements H: H 272 - May intensify fire; oxidizer

H 319 - Causes serious eye irritation

Precautionary statements: Prevention

P210 – Keep away from heat, *hot surfaces, sparks, open flames and other ignition sources*. No smoking.

P220 – Keep/Store away from clothing/combustible materials (lubricants, Diesel fuel, oil, paints etc.)

P 264 – Wash hands thoroughly after handling

P 280 – Wear protective gloves (heat resistant)/protective clothing (powder resistant overalls)/tight safety goggles/ face mask/ *hearing protection (earphones)*

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#### Intervention

P 370 + P 378 - In case of fire use plenty of water (flooding). Use dust or carbon dioxide extinguishers for cooling;

P 305+351+338 - If in eyes: Rinse cautiously with water for several minutes  
 Remove contact lenses, if present and easy to do. Continue rinsing.

P 337+ P313 – If irritation persists see the doctor

***"Acquisition, possession or use by the general public is restricted"***

#### **EU label** (according to ADR)

Substance name: COMPLEX FERTILIZER WITH HIGH CONTENT OF AMMONIUM NITRATE

Producer:

Azomureș S.A.Tg.-Mureș, 300 Gheorghe Doja St., tel.004-0265 253 700, Romania

Fax: 004-0265 252 986, e-mail: [office@azomures.com](mailto:office@azomures.com), [www.azomures.com](http://www.azomures.com)

Emergency telephone number: 021.318.36.06, working hours: Monday - Friday from 8 a.m. to 3 p.m.

Class 5.1 - oxidizing substances

Content: ammonium nitrate >70%AA - < = 98.5% AA

*The declared content for each nutrient : TOTAL NITROGEN (N), AMMONIACAL NITROGEN, NITRIC NITROGEN, TOTAL PHOSPHORUS PENTA OXIDE, WATER SOLUBLE PHOSPHORUS PENTA OXIDE, NEUTRAL AMMONIUM CITRATE SOLUBLE PHOSPHORUS PENTA OXIDE, as mass percentages.*

*The granulation*

*Instructions for use*

*Storage conditions*

Net weight of the fertilizer

*Production date*

Hazard symbol:



### **2.3. Other hazards**

According to Annex XIII of the EC Regulation no. 1907/2006, the PBT and vPvB assessment has not been conducted because ammonium nitrate is an inorganic substance.

Other hazards: not known.

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| <b>SECTION 3.</b> | <b>COMPOSITION / INFORMATION ON INGREDIENTS</b> |
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| <b>3.1. Substance</b> |
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**The product must be considered: Multi-constituent Substance**

COMPLEX FERTILIZERS WITH HIGH CONTENT OF AMMONIUM NITRATE - a multi-constituent substance

Composition: ammonium nitrate - CAS: 6484-52-2  
ammonium sulphate - CAS: 7783-20-2  
calcium hydrogenorthophosphate - CAS: 7757-93-9  
ammonium dihydrogenorthophosphate - CAS: 7722-76-1  
diammonium hydrogenorthophosphate - CAS: 7783-28-0  
potassium sulphate - CAS: 7778-80-5  
calcium carbonate - CAS: 471-34-1  
potassium chloride - CAS: 7447-40-7

Ammonium nitrate (hazardous in concentrations > 70%)

CAS number: 6484-52-2

EINECS number: 299-347-8

IUPAC name: ammonium nitrate

Molecular formula: H<sub>3</sub>N.HNO<sub>3</sub>

SMILES notation: [NH<sub>4</sub><sup>+</sup>].[O<sup>-</sup>] [N<sup>+</sup>](=O)[O<sup>-</sup>]

Molecular weight range: 80.0434

ECHA reference number: 01- 2119490981- 27- 0064

Typical concentration: >= 32% - <=75% (w/w)

**Chemical identification of impurities**

Calcium phosphate - CAS number: 10103-46-5

EINECS number: 233-283-6

Typical concentration: depending on the sort

Concentration limit: >=0 - <=1% (w/w)

Water - CAS number: 7732-18-5

EINECS number: 231-791-2

IUPAC name: water

Typical concentration: >=0.15% - <=0.45% (w/w)

Calcium fluoride - CAS number: 7789-75-5

EINECS number: 232-188-7

Typical concentration: depending on the so

Concentration limit: >=0 - <=7% (w/w)

*The content of contaminants in complex fertilizers NP/NK/NPK type is below the limits established in the new regulation 1009/2019, Annex 1, Part II.*

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## SECTION 4. FIRST AID MEASURES

### 4.1. Description of the first aid measures

4.1.1 First aid instructions are provided depending on the relevant exposure routes.

Skin contact: rinse the affected area with plenty of water. Remove contaminated clothing and shoes.

In case symptoms occur, seek medical advice.

Eye contact: rinse/irrigate eyes with plenty of water for 10 minutes; if irritation persists, seek immediately medical advice.

Ingestion: in case of ingesting the product, rinse mouth with water (only if the victim is conscious).

Do not induce vomiting. In case symptoms occur, seek medical advice.

Inhalation: in case of inhaling the product, remove victim to fresh air. In case symptoms occur, seek medical advice.

#### 4.1.2 Recommendations:

Remove the victim from the area contaminated with dust or gas, keep the victim at rest in a warm area, even in the absence of symptoms; administer oxygen, especially in case of blueness around the mouth; artificial respiration must be used only as a last resort, in case of prolonged exposure.

### 4.2. The most important symptoms and effects, acute as well as delayed

Keep under medical observation for at least 48 hours, in order to prevent the development of a pulmonary edema or methaemoglobinaemia.

### 4.3. Indications concerning any emergency medical assistance and necessary special treatments

Note for the attending doctor: methaemoglobinaemia

## SECTION 5. FIREFIGHTING MEASURES

### 5.1. Fire extinguishing means

#### Adequate extinguishing means

##### Small fires

The substance is not combustible. This product may sustain combustion. Use water to extinguish the fire.

##### Large fires

The substance is not combustible. This product may sustain combustion. Use water to extinguish the fire.

#### Inadequate extinguishing means

Do not use chemicals or foam to extinguish the fire, use sand or soil for emerging fires, if there is no water source available.

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## 5.2. Special hazards arising from the substance or mixture

### Unusual fire and explosion hazards

The substance may be explosive in contact with flammable or organic substances, or if it is confined during the fire.

### Hazardous decomposition products and combustion products

In case of fire, hazardous decomposition products may be generated, such as nitrogen oxides (NO, NO<sub>2</sub> etc.), ammonia (NH<sub>3</sub>), amines.

### Special procedures for fire extinguishing

Special measures are not necessary.

Wear adequate protection equipment. Use a self-contained breathing apparatus.

## 5.3. Advice for firefighters

### Special procedures for fire extinguishing

Special measures are not necessary.

Wear adequate protection equipment. Use a self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non - emergency personnel

##### (a) Protective equipment

###### Hand protection:

Protective gloves (heat resistant).

###### Eye protection:

Face protection equipment - tight safety goggles (plastic frame, polycarbonate lens) for chemical substances.

- face mask (polycarbonate) - in case of danger of nitrate splashes

###### Skin protection

Protective clothing:

Dust resistant overalls (breastplate duck overalls, coat).

Winter or summer shirt (natural fibers - duck)

Protective footwear:

Chemical and mechanical aggression resistant boots, with anti-static properties that allow usage in explosive environments (leather with rubber soles).

##### (b) Keep away from heat and fire sources

Use a self - contained breathing apparatus and adequate equipment for firefighting.

Open doors and windows to produce maximum ventilation of the room.

##### (c) Emergency procedures

In case of great danger, the surrounding area must be evacuated.

Avoid inhaling toxic fumes by standing up wind from the fire.



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### 6.1.2. For the personnel involved in emergency situations

The personnel involved in emergency situations must wear duck, dust resistant equipment, chemical aggression resistant boots and protection mask.

## 6.2. Precautions for the environment

Avoid contamination of the soil and groundwater courses.

## 6.3. Methods and material for containing fires and for cleaning

### Containment and cleaning method for the dispersed substance

#### Dispersion and leakage of small quantities

Vacuum or collect the product in special containers, marked as waste. Clean the contaminated area using a large quantity of water. In case the spilled substance reaches into watercourses, inform local authorities.

#### Dispersion and leakage of large quantities

Vacuum or collect the products in special containers, marked as waste. Recycle if possible. Clean the contaminated area with a large quantity of water. In case the spilled substance reaches into watercourses, inform local authorities.

#### Inadequate techniques for containment and cleaning

Do not contain the spilled product using sawdust or any other combustible material.

Do not use plugs made from organic materials, such as wood, in order to stop leakage.

## 6.4. Reference to other sections

Note: see chapter Exposure control / individual protection, for information concerning personal protection equipment and the section Disposal considerations.

## SECTION 7. HANDLING AND STORAGE

### 7.1. Precautions for safe handling

#### 7.1.1 Recommendations for safe handling

Use adequate ventilation. A local exhaust ventilation system must be provided. Avoid all possible ignition sources (spark or flame). Avoid contamination with any source, including metals, dust or organic substances.

#### 7.1.2 Recommendations concerning good general hygiene practices at the work place

- (a) Do not eat, drink or smoke in the working area. "NO SMOKING" signs are to be placed in the working area.
- (b) Wash hands thoroughly after each use.
- (c) Remove contaminated clothing and protection equipment before entering lunch areas.



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## 7.2. Safe storage conditions, including possible incompatibilities

The product should be stored temporarily only in packaged, protected and well-ventilated areas.  
The product should be stored away from sources of heat and fire.  
Not to be stored together with flammable or incompatible materials.  
Avoid contact with combustible substances and reducing agents.  
Smoking and open fire is forbidden in storage spaces.  
Fertilizers should not be stored together with other products.  
Stacking of bags should be made in such a way that any danger is avoided.

## 7.3 Specific end use (s)

Specific end uses - chemical fertilizer.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

No official limits are specified.

Values recommended by ACGIH (1995-1996) for inhalable particles:

TLV/TWA: 10mg/m<sup>3</sup>

Relevant DNEL / DMEL values and NOAEL values are provided in the CSA for ammonium nitrate depending on the type of exposure for workers in an industrial setting and for the general public.

As no acute toxicity hazard was identified, that would lead to the classification of the substance according to CLP Regulation, the long-term DNEL value is considered sufficient to ensure that no effects occur from acute exposure to the substance.

No local effects were observed after dermal and inhalation exposures and no DNEL value for local effects was derived.

#### Repeated dose toxicity

Long-term systemic effects - dermal - DNEL: 21.3 mg/kg bw/d

NOAEL: 255.6 mg/kg bw/d

- inhalation - DNEL: 37.6 mg/m<sup>3</sup>

NOAEC: 451.2 mg/m<sup>3</sup>

DNEL values for human exposure are derived according to ECETOC guideline (final draft).

a) Workers exposure - dermal - DNEL: 21.3 mg/kg bw/d

- inhalation - DNEL: 37.6 mg/m<sup>3</sup>

b) Exposure of the general public - dermal - DNEL: 12.8 mg/kg bw/d

- inhalation - DNEL: 11.1 mg/m<sup>3</sup>

- oral - DNEL: 12.8 mg/kg bw/d

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## 8.2. Exposure control

The information related to exposure control are provided in the Exposure Scenarios attached to the Safety Data Sheet.

### 8.2.1 Adequate technical controls

#### General measures at company level

The CSSM (The Committee for Work Health and Safety) was constituted at the company level, where the risk factors of professional injury and illness in the work place are assessed.

The evaluation of the risks of professional injury and illness at the work place was carried out by committees established by the management; preventive measures were taken to eliminate or to diminish the risks that cannot be avoided, having as purpose the work safety and health, reduction of work injuries and of professional illnesses.

#### The Chemical Plant:

- Risk evaluation when using dangerous chemical substances
- NPK Plant and ADEX NPK (operation – chemists, packing machinists)

As a result of the analysis and evaluation of the risks at the work place:

The plan for prevention and protection at company level was elaborated and approved

A record is held of the work places of great danger and imminent danger of injury

A situation of the hazardous chemical substances used in the work process is kept

The toxic gases, released by chemical substances at the work place, are monitored.

The health of the staff exposed to the action of chemical substances is supervised and monitored

The auditing of the safety and health at the work place is carried out, establishing the noncompliance with the law in force and taking measures to ensure compliance with such laws.

Statistics are drafted, referring to work accidents and professional illnesses caused by hazardous chemical substances.

Intervention teams in case of chemical accident with periodically instructed staff are organized at company level.

Authorized employees of the internal prevention and protection service perform the inspection of the work places according to the operational procedure.

The explosion protection document is elaborated according to Government Ordinance no. 1058/2006 for the following plants: Ammonia, Nitric Acid, and Ammonium Nitrate, NPK.

The equipment used in areas with danger of explosion is certified upon availability date.

Workers have access to personal instructions regarding the usage of dangerous chemical substances:

- The staff has individual protection equipment
- Measures of collective protection are ensured.

#### Collective protection measures for the source of risk – complex fertilizers NPK type

##### Technical Measures

Monitoring system of the main functioning parameters for the safety of the equipment (pressure, temperature, concentration, flow capacity, level etc), with acoustic and optical warning signals in case of malfunction.

Toxic gas, fire and explosion detectors

Protection devices – flange fenders on all the dangerous liquids layouts

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Ammonia and nitric acid layouts painted in conventional colors

Signaling for work safety health and according to Government Ordinance no. 971/2006 (safety, warning, interdiction, obligation marks, delimitation of danger zones)

Ventilation systems.

Rescue showers for the danger of splashing with corrosive substances.

Water sources with upward jet (for washing the eyes in case of splashing)

Periodical ISCIR inspections of under-pressure equipment.

Toxic gases level control

Organization and provision of individual insulating protection equipment

Endowment and organization of medical help trained in case of gassing.

#### **Administrative measures**

Manufacturing regulation, work instructions regarding work safety and health and fire prevention.

Safety data sheets for hazardous substances.

Organization of an information system for surveillance and intervention:

- Internal Emergency Plan (PUI).
- Evacuation action plan in emergency situations
- *The defense plan in case of a specific emergency situation caused by earthquakes and/or landslides*
- Action plan for safe road transport (PSTR).

Authorization for the job position, employees in the production sector, maintenance, repair (mechanic, electric, automation) in technological installations.

Work safety and health training for Azomures employees, in all stages (upon hiring, at work, periodically, supplementary) and work safety and health instruction for the employees from the companies that perform services based on contract and for the persons that are on the platform with the employer's permission, related to:

- risk of professional injury and illness at the work place
- minimal requests of health and safety of work, stipulated by legal regulations applicable to the specific activity at the work place
- tasks and responsibilities of the employees
- usage of work equipment and individual protection equipment
- prevention and protection measures, action plan in case of danger
- giving first aid to the injured at the work place

#### **Risk management measures for human health**

During ammonium nitrate manufacturing process, eyes might be exposed to dust in concentrations that cause irritations. If existing control measures are applied (technical control measures and personal protection equipment, based on the classification and labeling as H272 and H319), the substance is not hazardous for workers.

#### **8.2.2 Personal protection measures, such as personal protection equipment**

Technical measures: provide a ventilation system, where necessary.

Hygiene measures: do not eat, drink or smoke while handling the product. Wash hands after handling and before eating, smoking or using the toilet, as well as at the end of the working period.

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(a) Respiratory protection:

Personal protection during production activities - breathing apparatus  
 - protective mask

(b) Hand protection:

Protective gloves (heat resistant).

(c) Eye protection:

Face protection equipment - tight safety goggles (plastic frame, polycarbonate lens) for chemical substances.  
 - face mask (polycarbonate) – in case of danger of nitrate splashes

(d) Skin protection:

Protective clothing:

Dust resistant overalls (breastplate duck overalls, coat);

Winter or summer shirt (natural fibers - duck);

Protective footwear:

Chemical and mechanical aggression resistant boots, with anti-static properties that allow usage in explosive environments (leather with rubber soles).

### 8.2.3 Environmental exposure control

Recommendations on personal protection apply for high levels of exposure.

Select the personal protection equipment depending on the type of risk.

### Risk management measures for the environment

Due to the low toxicity of ammonium nitrate for aquatic organisms and its regulation by various European/national regulations, a risk and environmental exposure assessment is not considered necessary for ammonium nitrate.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information concerning the main physical and chemical properties

a) Physical state: granules

b) Color: white-gray

c) Odor: odorless

| No. | Physical and chemical properties of the substance / mixture | Unit  | Value for the substance /mixture | Remarks   |
|-----|---|-------|----------------------------------|---|
| d)  | Melting/ freezing point                                     | °C    |                                  | Depending on the composition; it may decompose before melting |
| e)  | Boiling point/ boiling temperature range                    | °C    | >210                             | Decomposes before boiling                                     |
| f)  | Flammability  | % vol |                                  | Nonflammable (based on molecular structure)                   |
| g)  | <i>Decomposition temperature</i>                            | °C    | >230                             |   |
| h)  | pH  |       | >4.5                             | In solution of 100g/L   |
| i)  | <i>Water solubility</i>                                     | g/L   | >100                             | At 20 °C  |

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| No. | Physical and chemical properties of the substance / mixture | Unit              | Value for the substance /mixture | Remarks   |
|-----|---|-------------------|----------------------------------|---|
| j)  | Partition coefficient n-octanol/water                       | Log Kow           |                                  | Not necessary as the substance is inorganic.  |
| k)  | Vapor pressure  | Pa                | Negligible                       | At room temperature   |
| l)  | Bulk density  | kg/m <sup>3</sup> | 950 -1150                        |   |
| m)  | Granulometry  |                   |                                  | Does not contain particles with an inhalable fraction (0% < 0.5mm).                           |
| n)  | Explosive properties  |                   |                                  | Non explosive   |
| o)  | Oxidizing properties  |                   |                                  | It has oxidizing properties   |
| p)  | Surface tension   |                   |                                  | No surface activity (based on molecular structure).   |
| r)  | Dissociation constant                                       |                   |                                  | Testing is not necessary, as ammonium nitrate is a salt that completely dissociates in water. |

## 9.2. Additional information

### 9.2.1. Information with regard to physical hazard classes

The concentration of ammonium nitrate (higher concentration than 70%), also determines the classification according to Regulation no. 1272/2008 (CLP).

Ammonium nitrate (nitrate) is classified in the physical hazard class as an oxidizing solid.

The communication of the danger is made having as labeling element the danger phrase H 272 - May aggravate a fire; oxidant.

Complex fertilizers NPK, NP type which have a higher ammonium nitrate content of 70% (ex.: 26-13-0; 27-13,5-0; 26-5-5; 27-6-6) are classified for transport Class 5.1. O2. PG III, ammonium nitrate fertilizers (UN2067) and are classified for oxidation properties.

### 9.2.2. Other safety characteristics

Complex fertilizers of NPK, NP type are classified on the basis of their composition, hazardous behaviour and complemented by testing for the ability to undergo self-sustaining decomposition (from the UN Recommendations on the Transport of Dangerous Goods, "Manual of Tests and Criteria", test S1), or for explosive properties.

## SECTION 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

Complex fertilizers react with combustible substances (e.g. Diesel fuel, lubricants etc.) and incompatible materials: reducing agents, acids, bases, chlorates, chlorides, chromates, nitrites, permanganates, metallic powders.

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Version

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**10.2. Chemical stability**

The product is stable in normal storage, handling and usage conditions.

In order to increase product stability, anti-caking agents are used.

Anti-caking - Additive of unknown composition

IUPAC name: additive of unknown composition

**10.3. Hazardous reactions potential**

If heated at very high temperatures, over 170 °C and over 200 °C, ammonium nitrate may cause an explosion at any moment, especially if contaminated with combustible substances, organic substances, coal, oil, or if ammonium nitrate is confined in closed spaces (pipes, containers, tankers with metallic walls).

The product is prone to chemical self-ignition when it comes into contact with readily oxidizing organic substances, finely divided metals, superphosphates.

**10.4. Conditions to avoid**

The product decomposes when heated. Avoid confined spaces.

**10.5. Incompatible materials**

Reducing agents, strong acids and bases, metallic powders, combustible materials, chromates, zinc, copper and its alloys, chlorates.

**10.6. Hazardous decomposition products**

Nitrogen oxides (NO, NO<sub>2</sub>) released during ammonium nitrate decomposition are highly toxic.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information in this section is derived from characterization of ammonium nitrate which is the constituent that gives danger sorts of NPK 26-13-0; 27-13,5-0; 26-5-5; 27-6-6.

**Toxicokinetics (absorption, metabolism, distribution and elimination)**

The results of the studies on absorption, metabolism, distribution and elimination:

Based on low MW, high water solubility, assumed low logPow high absorption is expected. However, the ion formation of the substance immediately when in contact with a fluid decreases the absorption. Therefore, 50% absorption is taken for oral, dermal and inhalation exposure.

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### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

The relevant hazard classes for which information is provided are:

- (a) Acute toxicity
- (b) Skin corrosion / irritation
- (c) Eye irritation / damage
- (d) Sensitization of the skin or the respiratory system
- (e) Mutagenicity germ cell
- (f) Carcinogenicity
- (g) Toxicity for reproduction
- (h) STOT (specific target organs of toxicity) – unique exposure
- (i) STOT (specific target organs of toxicity) – repeated exposure
- (j) Aspiration hazard

#### 11.1.1 Information for each hazard class

- (a) Acute toxicity - oral LD50 > 2000 mg/kg bw
  - dermal LD50 > 5000 mg/kg bw
  - inhalation LC50 > 88.8 mg/l
  - other routes – no available information

Ammonium nitrate does not have to be classified for acute oral, dermal or inhalation toxicity as all LD50/LC50 tested values exceed the highest value used for classification according to CLP Regulation.

#### Repeated dose toxicity

Oral 28 days - NOAEL ≥ 1500 mg/kg bw/d (with potassium nitrate)

52 weeks - 256 mg/kg bw/d (with ammonium sulphate)

Inhalation 2 weeks - NOAEL ≥ 185 mg/m<sup>3</sup> air

Dermal – no available studies

Value used for CSA (oral route): NOAEL: 256 mg/kg bw/d (with ammonium sulphate)

Value used for CSA (route: inhalation): NOAEC ≥ 185 mg/m<sup>3</sup> (2 weeks)

Based on available data, ammonium nitrate is not classified according to CLP Regulation for repeated dose toxicity.

#### (b) Skin corrosion/irritation

Ammonium nitrate does not cause skin irritations and is not corrosive.

#### (c) Serious eye damage / irritation

Ammonium nitrate is irritating for the eyes.

#### (d) Sensitizing of the airways and skin

No available data on sensitization of the respiratory system.

Ammonium nitrate is not classified according to CLP Regulation for skin sensitization.

Value used for CSA: not sensitizing for the skin

Value used for CSA: not sensitizing for the respiratory system.

#### (e) Mutagenicity

Based on the results of in vivo and in vitro studies, ammonium nitrate is not considered genotoxic.

Value used for CSA: genetic toxicity: negative.



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(f) Carcinogenicity

Not carcinogen (tests using ammonium sulphate).

(g) Toxicity for reproduction

Oral 28 days - NOAEL  $\geq$  1500 mg/kg bw/d (with potassium nitrate)

Ammonium nitrate is not classified according to CLP Regulation with regard to reproduction and developmental toxicity.

(h) STOT (specific target organs of toxicity) – unique exposure - conclusive but not sufficient for classification

(i) STOT (specific target organs of toxicity) – repeated exposure - conclusive but not sufficient for classification

(j) Aspiration hazard - there is no data available

**11.1.2** The data in this subsection apply to the ammonium nitrate in the form under which it is placed on the market – no data available.

**11.1.3 The results of *critical studies* used depending on the route of exposure**

The acute toxicity after oral administration – the studies were conducted on rats and mice.

For rat: LD50: 2950 mg/kg – key study; experimental result

LD50: 2800 mg/kg, LD50: 2462 mg/kg, LD50: 4500 mg/kg supporting studies

For mouse: LD50: 2085 mg/kg – supporting studies; experimental result

The acute toxicity after administration by inhalation - the studies were conducted on rats.

LC50: > 88,8 mg/L - supporting studies; experimental result

The acute toxicity after dermal administration - the studies were conducted on rats.

LD50: > 5000 mg/kg

Ammonium nitrate must not be classified for acute oral toxicity, dermal and inhalation toxicity, because all the values used for the LD50/LC50 tests are more than the highest value that is used in the classification of the CLP Regulation.

**11.1.4** For the following hazard classes: STOT – single exposure, STOT – repeated exposure, aspiration hazard – conclusive but not sufficient for classification.

**11.1.5** Information on the likely routes of exposure

The likely routes of exposure are ingestion (swallowing), inhalation or skin / eyes exposure - there are no known health effects.

**11.1.6** Symptoms related to the physical, chemical and toxicological characteristics

No data available.

**11.1.7** The known delayed and immediate effects and the chronic effects of long term exposure and short term exposure

The toxicological tests were made on rats, tests for skin irritation / eyes, the respiratory tract were made on rabbits.

There is no conclusive data on the effects of delayed or chronic of long term or short-term exposure.

**11.1.8** Interactive effects

No data available.

**11.1.9** Absence of specific data

No data available.

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## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

Ammonium nitrate has no endocrine disrupting properties.

### 11.2.2. Other information

No data available.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Aquatic compartment (including sediments)

##### Toxicity data

The main toxic component in ammonium salts is ammonia. Recent assessments concerning ammonia toxicity show that both ionized and un-ionized forms are toxic.

For this reason a common toxicity model is proposed, in which ammonia is more toxic at elevated pH values and ammonium ion contributes to toxicity at lower pH values.

##### Short-term toxicity for fish

Values used for CSA: LC50 for static water fish: 447 mg/L (at 48 hours).

##### Long-term toxicity for fish

No data available.

##### Short-term toxicity for aquatic invertebrates

Values used for CSA: EC50/LC50 for fresh water invertebrates: 490 mg/L

##### Long-term toxicity for aquatic invertebrates

There are no available long-term studies for aquatic invertebrates.

##### Algae and aquatic plants

Value used for CSA: EC50/LC50 for fresh water algae: >1700 mg/L

NOEC for fresh water algae: 1700 mg/L

##### Sediment organisms

The chemical safety assessment does not indicate the need for a study concerning the effects on sediment organisms.

##### Other aquatic organisms

No available information.

PNEC derivation - PNEC aqua (fresh water): 0.45 mg/L

PNEC aqua (marine water): 0.045 mg/L

PNEC aqua (intermittent releases): 4.5 mg/L

PNEC in sediments - PNEC values for sediments should be calculated using the equilibrium partitioning method (EPM) in EUSES, by using the PNEC aqua and the log Kow. For inorganic substances the PNEC value cannot be derived.

Due to the low toxicity of ammonium nitrate for aquatic organisms and its regulation by different European/national laws, the hazard and environmental exposure assessment is not considered necessary.

**Terrestrial compartment** - studies scientifically unjustified.

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**Atmospheric compartment** - no available data.

**Microbiological activity in STP**

Toxicity for aquatic micro-organisms

Value used for CSA: EC50/LC50 for aquatic micro-organisms: >1000 mg/L

NOEC aquatic micro-organisms: 180 mg/L

PNEC for STP: 18 mg/L

The Urban Wastewater Directive (1991) sets standards for the collection and treatment of wastewater from homes and some industrial sectors.

## 12.2. Persistence and degradability

Abiotic degradability

Ammonium nitrate completely dissociates in water. No additional information is requested/available.

Biotic degradability

Studies are not necessary as the substance is inorganic. The biodegradation rate in wastewater treatment plants is of 52 g N/kg dissolved solid/day at 20 °C.

In the anaerobic transformation of nitrate into N<sub>2</sub>, N<sub>2</sub>O and NH<sub>3</sub>, the biodegradation rate in wastewater plant at 20 °C is 70 g N/kg dissolved solid/day at 20 °C.

Hydrolysis - ammonium nitrate is completely dissociated into ions in water: NH<sub>4</sub><sup>+</sup> and NO<sub>3</sub><sup>-</sup>. Therefore, testing is considered not necessary.

Photolysis - in air, water, soil - no available data

Biodegradation - inorganic substances are not biodegradable (based on chemical properties).

## 12.3. Potential for bioaccumulation

The partition coefficient octanol - water (K<sub>ow</sub>): not relevant as the substance is inorganic, but it is considered low (based on high water solubility).

The bioconcentration factor (BCF) - low potential for bioaccumulation (based on substance's properties).

## 12.4. Mobility in soil

Adsorption/desorption

Adsorption coefficient - low potential for adsorption (based on substance's properties).

Volatilization - no available data.

Distribution modeling - no available data.

## 12.5. PBT and vPvB assessment results

In accordance with Annex XIII of the EC Regulation no. 1907/2006, PBT and vPvB assessments have not been conducted as ammonium nitrate is inorganic.

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## 12.6. Endocrine disrupting properties

*Ammonium nitrate has no endocrine disrupting properties.*

## 12.7. Other adverse effects

There is no information concerning other adverse effects on the environment.

## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### Disposal methods

Wastes must be disposed of in compliance with national and local regulations. Controlled biodegradation in wastewater treatment is possible.

#### **Relevant provisions of the harmonized EU legislation and domestic legislation regarding waste.**

##### National legislation in force:

OUG 92/2021 concerning wastes treatment.

Law no. 265/2006 – The Law on environment protection.

Law no. 249/2015 related to the packaging and waste packaging management.

GD no. 856/2002 - The evidence of wastes management, with subsequent modifications.

Law on labor security and health no. 319/2006, GD no. 1425/2006 on approving the Methodological Norms for the enforcement of the provisions set by the Law on labor security and health no. 319/2006, GD no.355/2007 on the surveillance of workers' health with subsequent modifications.

Decision no. 1061/2008 on transport of hazardous or non-hazardous wastes on Romanian territory, with subsequent modifications.

##### UE Legislation in force:

Regulation (EC) no. 1907/2006 of the European Parliament and of the Council regarding the Registration, evaluation authorization and restriction of chemicals (REACH), *with subsequent modifications*.

Regulation (EC) no. 1272/2008 of the European Parliament and of the Council on the classification, labeling and packaging of substances and mixtures, *with subsequent modifications*.

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

European Agreement concerning the International Carriage of Dangerous Goods by Rail (RID).

International Maritime Dangerous Goods (IMDG).

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| <b>SECTION 14.</b> | <b>TRANSPORT INFORMATION</b> |
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**Information concerning classification for:**

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|-----------------------------------|
| <b>Road transportation (ADR):</b> |
|-----------------------------------|

NPK complex fertilizers type: **26-13-0; 27-13.5-0; 26-5-5; 27-6-6**

14.1. UN number *or ID number*: 2067

14.2. UN name for dispatch: FERTILIZERS CONTAINING AMMONIUM NITRATE

14.3. Transportation hazard class (classes): hazard class 5.1 - oxidizing substances O2 (solids), hazard identification no. 50 label 5.1

14.4. Packaging group: Group III  
       Special provisions – Loading, unloading, handling – CV24  
       Bulk - AP6, AP7, VC1, VC2  
       Transport category / tunnel restriction code – 3 (E)

|                                   |
|-----------------------------------|
| <b>Rail transportation (RID):</b> |
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14.1. UN number *or ID number*: 2067

14.2. UN name for dispatch: FERTILIZERS CONTAINING AMMONIUM NITRATE

14.3. Transportation hazard class (classes): hazard class 5.1 - oxidizing substances O2 (solids), hazard identification no. 50 label 5.1, NHM code 310230,

14.4. Packaging group: Group III  
       Packaging instructions: P002, IBC08, LP02, R001  
       Special packaging provisions: B3  
       Special provisions – Loading, unloading and handling – CW24  
       Bulk – AP6, AP7, VC1, VC2  
       Transport category - 3

|   |
|---|
| <b>Marine transportation (IMDG/IMO Code):</b> |
|---|

14.1. UN number *or ID number*: 2067

14.2. UN name for dispatch: FERTILIZERS CONTAINING AMMONIUM NITRATE

14.3. Transportation hazard class (classes): hazard class 5.1, label 5.1  
       EmS Fire - F-H  
       EmS Spiel- S-Q

14.4. Packaging group: Group III  
       Special provisions - Stacking: category A

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| <b>14.5. Environmental hazards</b> |
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According to the criteria of the IMDG Code, ammonium nitrate is not pollutant for the environment and marine aquatic compartment.

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#### 14.6. Special precautions for users

Transportation of NK, NP or NPK complex fertilizers, with a higher ammonium nitrate content of 70% (ex.: 26-13-0; 27-13,5-0; 26-5-5; 27-6-6) is done according to the legislation in use for hazardous substances. RID, ADR and IMDG provisions shall be respected. Transportation and storage of the product is carried out at temperatures between -10 and +30 °C. Transportation means must be clean, dry and covered with waterproof covers, free of sharp edges that might cut or rip the bags. The product may also be transported in bulk, covered with a waterproof, nonflammable cover, or in TALS metallic wagons.

In case of bulk deliveries on sea, the ship storage areas must be clean and dry (they must not be contaminated with oil (grease), residues from previous transports). The walls must be free of detachable rust. The walls must not be covered with paper.

The product is packed in polyethylene bags or double bags (polyethylene and polypropylene). Polyethylene bags are closed by welding, plying or sewing together with polypropylene bags and the polypropylene bags are closed by sewing.

Each delivery is accompanied by the Conformity Statement. At the client's request, the product is accompanied by a Test Report.

Vehicles which transport packages (bags) with fertilizers containing ammonium nitrate (complex fertilizers NPK type 26-13-0; 27-13.5-0; 26-5-5; 27-6-6) should be signaled by applying **2** rectangular reflective **orange plates** (front and back), which indicate on the top hazard identification number and on the bottom UN number specific for dangerous substance, of dimensions specified in legislation in use (ADR), labeled so that in case of fire the markings must remain legible for at least 15 minutes (see figure 1).

For NPK complex fertilizers sorts 26-13-0; 27-13.5-0; 26-5-5; 27-6-6, for completing signaled plates will be applied **label plate**, exposed to view on the sides and in the back of the vehicle applied in such a manner that it cannot be removed, in this case **oxidizing** substances – conventional sign – flame over a black circle on a yellow background, the symbol "5.1" in the lower corner – figure 2.

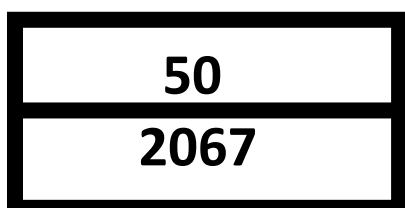


fig. 1



fig. 2

According to the provisions of EC Regulation no. 1272/2008, package labels will include the following legible specifications: substance name, producer's full name and address, nominal weight, product identifiers, hazard symbols, warnings, hazard statements (H), precautionary statements (P). All transports will be accompanied by the transport documents appropriate for transported goods, according to the legislation in use.

*Each delivery is accompanied by a Quality Certificate and/or Declaration of conformity. At the customer's request, the product is accompanied by a Test Report.*

*The tolerances are in accordance with the provisions of the European Regulation 1009/2019.*



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#### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

### SECTION 15. REGULATORY INFORMATION

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

##### Relevant information regarding the domestic legislation

Law on labor security and health no. 319/2006, GD no. 1425/2006 on approving the Methodological Norms for the enforcement of the provisions set by the Law on labor security and health no. 319/2006, GD no. 355/2007 on the surveillance of workers' health with subsequent modifications.

Law no. 265/2006 for the amendment of GEO no. 195/2005 on environment protection

Decision no. 1391/2006 for the approval of the Regulation concerning the application of Government Emergency Ordinance no. 195/2002 regarding traffic on public roads, with subsequent amendments and supplements.

ISCIR technical prescriptions in use.

Order no. 2737/17.12.2012 regarding the approval of the Procedure concerning the designation of the bodies in charge with the issuance of the aggregation certificates and of the prototype conformity certificates according to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), as well as with the inspection for the certification for maintaining the exploitation conformities for the specialized superstructures installed on the road vehicles for the carriage of dangerous goods and of packaging of dangerous goods transported on the road.

Law no. 59/2016 referring to the control of hazards in case of serious accidents involving dangerous substances.

*Law no. 49/2018 on explosives precursors, as well as for amending and supplementing some normative acts.*

Decision no. 1175/2007 for the approval of the Norms referring to the performance of road transportation activities for dangerous goods in Romania.

Law no. 360/2003 on dangerous substances and preparations republished in 12.03.2014.

Law no. 278/2013 on industrial emissions.

##### Relevant information regarding the EU legislation

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council regarding the Registration, evaluation authorization and restriction of chemicals (REACH), *with subsequent modifications.*

Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on the classification, labeling and packaging of substances and mixtures, *with subsequent modifications.*

Regulation (EU) No. 286/2011 by the Commission from 10.03.2011 amending Regulation (EC) No. 1272/2008.

*Regulation (EU) No. 2019/521 by the Commission from 27 March 2019 amending, for the purposes of its adaptation to technical and scientific progress Regulation (EC) No. 1272/2008.*



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*Regulation (EC) No. 2020/878 of 18.06.2020 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the registration, evaluation and restriction of chemicals (REACH).*

Directive No. 2012/18/UE of the European Parliament and of the Council from 4.07.2012 on the control of major-accident hazards including dangerous substances (SEVESO III).

*Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013.*

*Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003.*

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2021 edition.

Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition  
International Maritime Dangerous Goods (IMDG), 2020 edition.

*Emergency Ordinance 121/2022 regarding the establishment of measures to make some fertilizer products available on the market and for the amendment of Law no. 232/2010 regarding the import regime of fertilizer samples and fertilizers.*

#### Other regulations

***“Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point”.***

#### 15.2 Chemical safety assessment

A chemical safety assessment (CSA) was conducted and a chemical safety report (CSR) was elaborated for ammonium nitrate which makes the NPK sorts 26-13-0; 27-13.5-0; 26-5-5; 27-6-6 hazardous during transportation.

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| <b>SECTION 16.</b> | <b>ADDITIONAL INFORMATION</b> |
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| <b>a) A clear evidence of added, deleted or modified information</b> |
|--|

| Version (edition, revision) number | Date       | Page number         | Evolution of the information   |
|------------------------------------|------------|---------------------|--|
| edition 7<br>revision 0            | 12.02.2013 | 2, 3, 16, 17,18, 20 | At page 2 section 2, chapter 2.1 were introduced the NPK sorts 20-5-15 and 21-5-16.<br>At page 3 it was added the warning 24ers:attention and an intervention phrase, at section 2 chapter 2.2, elements for label.<br>At page16,section 14, chapter 14.6.1 were introduced the NPK sorts 20-5-15 and 21-5-16.<br>At page 17 section 14, chapter 14.6.2 it was mentioned the type of warning panels which are put up on vehicles, if transports packages (bags) or 24ersi in bulk.<br>At page 18 section 15, chapter 15.1, at page 20 section 16 b) and c) it was modified the ADR and RID edition number. |
| edition 7<br>revision 1            | 12.09.2013 | 2, 16               | At page 2 section 2, chapter 2.1 and page 16 section 14, chapter 14.6.1 were introduced the NPK sorts 21-7-12 and 21-7-13  |
| edition 8<br>revision 0            | 20.11.2013 | 10, 18              | At page 10, chapter 8.2.1. – Organizational measures, Monitoring and intervention plans were modified<br>At page 18 section 15.1 – information regarding national legislation was modified   |
| version 9                          | 28.11.2014 | 2, 4, 12, 16        | At page 2, section 2, chapter 2.1 and page 16, section 14, chapter 14.6.1 were taken several sorts of NPKand have made changes to some sorts with photassium sulphate.<br>At page 4, section 3, chapter 3.1 at ammonium nitrate composition changed typical concentration.<br>At page 12, section 10, chapter 10.2 at conditioning agents was added dolomite.  |
| version 10                         | 14.01.2015 | 7                   | At page 7, section 7, chapter 7.2 was modified the number of rows it is stored bags.   |
| version 11                         | 01.06.2015 | 1, 2, 15, 16        | At page 1, section 1.4 emergency telephone number was modified.<br>At page 2, section 2.1 it was removed classification in accordance with directive 67/548/ EEC.<br>At page 15, chapter 13.1 – Waste treatment methods national legislation was modified.<br>At page 16, section 14 they were added specials provisions for carriage.   |

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| Version (edition, revision) number | Date       | Page number           | Evolution of the information  |
|------------------------------------|------------|-----------------------|---|
| version 12                         | 01.02.2016 | 2, 7, 14, 19-20       | At page 2, section 2, chapter 2.1 were introduced the NPK new sorts.<br>At page 7, section 7, chapter 7.2 they were also 25ersión25 don the storage.<br>At page 14, section 1, they have introduced additional toxicological data.<br>At page 19-20 section 15.1 it was introduced Law 360/2003 republished and Regulation no.830/2015. |
| version 13                         | 09.05.2016 | 7, 20                 | At page 7, section 7.2 it was rephrased the provision referring to stacking storage.<br>At page 20, section 15 the legislation was amended SEVESO.  |
| version 14                         | 11.11.2016 | 2                     | At page 2, section 2, chapter 2.1 it has introduced the NPK new sort.   |
| version 15                         | 20.02.2017 | 17, 18, 20            | At page 17, in chapter 14.4 was introduced transport category / tunnel code.<br>At page 18, chapter 14.6 it changed the name of the hazard labels in label places, according to ADR 2017.<br>At page 20, chapter 15.1 it changed the edition number ADR, RID, IMDG  |
| version 16                         | 26.04.2017 |                       | Non-hazardous NPK sorts of transport were removed from the SDS content.   |
| version 17                         | 13.03.2018 | 2, 21                 | At page 2, section 2, chapter 2.1 and and on page 21, section 14.6, the phrases concerning the hazard of the sorts were rewored.  |
| version 18                         | 15.10.2018 | 8                     | At page 8, section 7.2 has changed in accordance with current legislation.  |
| version 19                         | 12.04.2019 | 8                     | At page 6, section 7.2 has been reformulated.   |
| version 20                         | 25.06.2019 | 20                    | At page 20, section 15.1 "Other regulations" have been introduced.  |
| version 21                         | 22.01.2021 | 3, 11, 12, 15, 20, 21 | Change of the drafting framework annex.<br>At page 3 section 2.2 changes due to legislation.<br>At page 11 and 12 section 9.1 new physical properties have been introduced.<br>At page 15 section 11.2 other hazards information was introduced.<br>At page 20 and 21, section 15.1 new legislation has been introduced.                |
| version 0                          | 09.02.2023 |                       | Conversion to new format and new codification   |
|                                    |            | 4, 5, 10, 20, 22      | Information on labeling (page 4), contaminant content (page 5), text introduced at Administrative measures (page 10) and information on tolerances (page 20).<br>On page 22, section 15.1 new legislation has been introduced.  |

## b) List of abbreviations and acronyms used throughout the Safety Data Sheet

|  |              |
|--|--------------|
| <b>TYPE DOCUMENT:</b> Working document<br><br><b>SAFETY DATA SHEET COMPLEX FERTILIZERS, NPK TYPE</b><br>(with higher than 70% ammonium nitrate content)<br><br>Code: FDS-BM-06-005-006 | Version      |
|  | 0/09.02.2023 |
|  | Original     |

|           |  |
|-----------|--|
| ACGIH     | - American Conference of Governmental Industrial Hygienists  |
| ADR       | - European Agreement referring to the International Carriage of Dangerous Goods by Road, 2021 edition  |
| b/w       | - body weight  |
| BCF       | - Bioconcentration factor  |
| CB        | - <i>Combustible solids (bulk shipping code from IMDG)</i>   |
| CSA       | - Chemical Safety Assessment   |
| CSR       | - Chemical Safety Report   |
| DMEL      | - Derived minimal effect level   |
| DNEL      | - Derived no effect level  |
| EC        | - European Commission  |
| EC50      | - Concentration of toxic material for which 50% of the tested organisms survive  |
| ECETOC    | - European Center for Ecotoxicology and Toxicology of Chemicals  |
| ECHA      | - European Chemicals Agency  |
| (FE) EFMA | - Fertilizers Europe (European Fertilizer Manufacturers Association)   |
| ES        | - Exposure Scenario  |
| ESIS      | - European Chemical Substances Information System  |
| EUSES     | - The European Union System for the Evaluation of Substances   |
| GESTIS    | - Information system on hazardous substances of the German Social Accident Insurance   |
| IBC       | - International Code for the Construction Equipment of Ships Carrying Dangerous Chemicals in Bulk  |
| IMDG      | - Regulations referring to the maritime transportation of hazardous Substances, 2020 edition   |
| IPPC      | - Integrated pollution prevention and control  |
| ISCIR     | - State Inspection for the Control of Boilers, Under-Pressure Vessels and Lifting Devices  |
| LC50      | - Lethal concentration for 50% of the tested population  |
| LD50      | - Lethal dose for 50% of the tested population   |
| LEV       | - Local ventilation  |
| SDS       | - Safety Data Sheet  |
| MARPOL    | - International Convention for the Prevention of Pollution From Ships  |
| NA        | - Not applicable   |
| NOAEC     | - No Observed Adverse Effects Concentration  |
| NOAEL     | - No observed adverse effect level   |
| OMI       | - <i>International Maritime Organization</i>   |
| PBT       | - Persistent, Bioaccumulative, Toxic   |
| PNEC      | - Predicted No Effect Concentration  |
| REACH     | - EC Regulation No. 1907/2006 of the European Parliament and Council concerning the registration, evaluation, authorization and restriction of chemical substances |

|  |              |
|--|--------------|
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|  | 0/09.02.2023 |
|  | Original     |

|            |   |
|------------|---|
| RID        | - Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition                                 |
| RMM        | - Risk Management Measures  |
| SEVESO III | - European Council Directive no. 2012/18/UE of July 4, 2012 on the control of major-accident hazards involving dangerous substances |
| STOT       | - Specific target organs of toxicity  |
| STP        | - Sewage Treatment Plant  |
| UN         | - United Nations  |
| VPvB       | - Very Persistent, very Bioaccumulative   |
| w/w        | - mass unit   |

### c) Bibliography

GESTIS Database - Material Safety Data Sheets

Amuliu Proca, Gabriel Stănescu - Substanțe și produse utilizate în industria chimică-pericol de incendiu - pericol de explozie – toxicitate (Substances and products used in the chemical industry-fire hazard-explosion hazard-toxicity), 1984

Studies according to the Chemical Safety Report

Guidance on safe use – The joint/individual ECHA Registration file for the substance

Official Journal of the European Union – EU Regulation no. 2020/878 of the European Council of 18.06.2020

EFMA - Guidance for the Compilation of Safety Data Sheets for Fertilizer Materials.

ESIS - European Chemical Substances Information System

Official Journal of the European Union – EC Regulation no. 1907/2006 of the European Parliament and Council concerning the registration, evaluation, authorization and restriction of chemical substances (REACH)

ADR - European Agreement referring to the International Carriage of Dangerous Goods by Road, 2021 edition

RID - Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition

IMDG - Regulations referring to the maritime transportation of hazardous substances, 2020 edition

### Relevant hazard statements / Relevant precautionary phrases

H 272 – May intensify fire; oxidizer

H 319 – Causes serious eye irritation

Precautionary statements: Prevention

P210 – Keep away from heat, *hot surfaces, sparks, open flames and another ignition sources*. No smoking.

P220 – Keep/Store away from clothing/combustible materials (lubricants, Diesel fuel, oil, paints etc.)

P 264 – Wash hands thoroughly after handling

**TYPE DOCUMENT:** Working document

Version

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P 280 – Wear protective gloves (heat resistant)/protective clothing (powder resistant overalls)/tight safety goggles/ face mask/ *hearing protection (earphones)*

Intervention

P 370 + P 378 – In case of fire use plenty of water (flooding). Use dust or carbon dioxide extinguishers for cooling;

P 305+351+338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P 337+ P313 – If irritation persists see the doctor.

**Note:**

The information included in this safety data sheet is based on the data available at the time of publication.

The client and the user assume all risks regarding usage, handling and storage of this product.

There are no guarantees for the product in case of improper handling, transport and storage of the product, not complying with the specifications of the Technical Specification and the Safety Data Sheet.