

FH-C20-039_V.12/ 25.06.2019

SAFETY DATA SHEET CALCIUM AMMONIUM NITRATE

According to EC Regulation no. 1907/2006 (REACH) / EC Regulation no. 1272/2008 / Regulation no. 830/2015.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1.1. Product identification

Name : CALCIUM AMMONIUM NITRATE
Other names: Ammonium Nitrate and Double Carbonate of Calcium and Magnesium
Chemical formula: $\text{NH}_4\text{NO}_3 + \text{CaMg}(\text{CO}_3)_2$
EINECS number: 229-347-8
CAS number: 6484-52-2
ECHA Registration number for ammonium nitrate: 01-2119490981-27-0064

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

Use by consumers: chemical fertiliser
Uses advised against: none

1.3. Details concerning the supplier of the Safety Data Sheet

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, www.azomures.com
e-mail (competent person responsible for the SDS): fds.azo@azomures.com

1.4. Emergency telephone number

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.

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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Calcium ammonium nitrate is an inorganic mixture of ammonium nitrate and dolomite (double carbonate of calcium and magnesium).

Not a classified (hazardous) mixture.

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

Not classified according to CLP.

Human health hazard

However, account shall be taken of the following aspects:

Skin contact: may cause irritation upon extended exposure.

Eye contact: may cause irritation thereof upon extended or repeated contact.

Ingestion: in small quantities, it has no toxic effects; however in large quantities, it may cause gastrointestinal distress and, in extreme cases, in particular with children, the occurrence of methemoglobinemia, referred to as the “blue baby” syndrome, and it may lead to the occurrence of cyanosis (identified by the blue colouration of lips).

Inhalation: high dust concentrations containing this product may cause irritation to the nose and airways, leading to symptoms such as sore throat and coughing.

Thermal decomposition products: intake of gases generated from thermal decomposition, which contain nitrogen oxides and ammonia, may cause irritation to the respiratory system.

Environmental hazards

Calcium ammonium nitrate is a nitrous fertiliser, therefore substantial spreading is likely to have a negative impact on the environment, contaminating enclosed water surfaces and affecting eutrophy, or contaminating lands, running waters or the underground water with nitrate.

2.2. Labelling

Labeling according to CLP Regulation

The mixture is not classified as hazardous in accordance with CLP Regulation No. 1272/2008/EC.

EU label

Mixture name: CALCIUM AMMONIUM NITRATE

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

EINECS number: 229-347-8

Manufacturer:

Azomureș S.A. Tg.-Mureș, 300 Gheorghe Doja Street, Romania,

tel.: 0040-265-253700, fax: 0040-265252986, email: office@azomures.com, www.azomures.com

Emergency telephone number: 0040-21.318.36.06, working hours: Monday-Friday from 8 a.m to 5 p.m.

Composition

Fertiliser net weight

2.3. Other hazards

An evaluation in respect of compliance with PBT or vPvB in accordance with Annex XIII of Regulation (EC) No 1907/2006 has not been carried out because the mixture comprises inorganic substances.

Other hazards: not known.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

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3.1. Chemical identity of the substance

The product must be considered: Mixture

CALCIUM AMMONIUM NITRATE - is a mixture of ammonium nitrate and dolomite (CaCO₃+MgCO₃)
It contains water, monoammonium phosphate, ammonium sulphate and additives as impurities.

Ammonium nitrate - EINECS number: 229-347-8

CAS number: 6484-52-2

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

IUPAC name: ammonium nitrate

Molecular formula: H₃N.HNO₃

Typical concentration: > = 77 - < = 79% (w/w)

SECTION 4. FIRST AID MEASURES

4.1. Description of the first aid measures

4.1.1 First aid instructions shall be provided by relevant routes of exposure.

Skin contact: the exposed area shall be washed with water and soap.

Eye contact: cleanse / flush with plenty of water for at least 10 minutes; if irritations remain, call the healthcare service.

Ingestion: do not induce vomiting; for drinking, supply water or milk; if a larger quantity has been swallowed, call the healthcare service.

Inhalation: move the contaminated person from the dusty area; if, however, the effect remains, call the healthcare service remove the exposed person from the area contaminated with gases; the injured person shall be put to rest in a warm area even if no visible symptoms have occurred.

4.1.2 Recommendations:

Give oxygen, particularly if the person has a blue coloration of lips; rescue breathing must be applied as a last resort.

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

Upon extended exposure, medical monitoring for at least 48 hours is recommended in order to prevent the potential occurrence of pulmonary edema.

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

Not available.

SECTION 5. FIREFIGHTING MEASURES

5.1. Fire extinguishing means

Adequate extinguishing means

If the fertiliser is not directly involved in the fire:

The most efficient available methods shall be used to extinguish fire.

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If the fertiliser is directly involved in the fire:

Flush with water.

Use suitable safety mask and equipment for fire extinction.

Open the doors and windows in order to ensure maximum ventilation in the room.

Unsuitable Extinguishing Agents

Do not use extinguishers containing chemical substances or foams to put out the fire, but try with sand or earth.

5.2. Special hazards caused by the substance or mixture

The product is not flammable. No special measures required.

5.3. Advice for firefighters

No special measures required. Wear protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1 For personnel not involved in emergency situations

(a) Protective Equipment

Hand protection: Impervious safety gloves (nitrile rubber, croscnitril, cotton-lined), 6th grade permeability resistance.

Eye protection:

Tight protection glasses (plastic casing, polycarbonate lens).

Eye shield (polycarbonate) - against danger of splashing with nitrate.

Skin protection

Protective gear:

Protective dust-proof outfit (duck overalls - breast-plate trousers, coat).

Winter shirt, summer shirt (natural duck material).

Protective shoes:

Protective boots with resistance against corrosive chemical agents (rubber, PVC).

Ankle boots against chemical attack, mechanical stress with antistatic properties enabling use in extreme environments (leather with rubber sole).

Respiratory protection

Dust mask with specific powder-retention efficiency.

(b) To be kept away from any source of heat and fire.

Use individual breathing equipment and proper equipment for fire extinction. Open the doors and windows in order to ensure maximum ventilation in the room.

(c) Emergency Procedures

In the event of increased danger, the surrounding area must be evacuated.

Avoid inhaling toxic gases; move to the direction at right angles to the wind.

6.1.2 For the personnel involved in emergency situations

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The staff acting in emergency cases must wear duck powder-proof protective gear, ankle boots resisting chemical attack and a protective mask.

6.2. Precautions for the environment

Avoid spilled product contact with soil and prevent discharging in aboveground water streams. Any quantity of discharged fertiliser shall be immediately and fully cleaned and shall be stored in a clean place.
Avoid contaminating water streams and sewers, and in the event of accidental contamination, please notify local authorities.

6.3. Methods and material for containing fires and for cleaning

Not available.

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 proper ventilation. Local ventilation system must be ensured. Avoid potential ignition sources (sparks or flames). Avoid producing excessive dust.

Avoid useless exposure in the environment to avoid piling up.

Use protective gloves and glasses for longer handling.

Avoid contamination, particularly with incompatible substances: flammable materials and lubricants, oxidising agents, acids, bases, sulphides, chlorates, chlorines, chromates, nitrates, permanganates; Metal powders, e.g. copper, nickel, cobalt, zinc and their alloys).

7.1.2 Recommendations concerning good general hygiene practices at the work place

(a) No smoking, eating or drinking in the work area. "NO SMOKING" warning signs shall be provided in the work area.

(b) Wash hands well after use.

(c) Remove contaminated clothing and the protective equipment before entering eating areas.

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.

Do not expose the substance to temperatures above 50 °C.

Smoking and open fire are prohibited in the storage areas.

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Stacking of bags should be made in such a way that any danger is avoided.

7.3 Specific end use (s)

Not applicable.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

No official limits indicated.

Values recommended by ACGIH (1995-1996) for particles which may be inhaled: TLV/TWA: 10 mg/m³.

8.2. Exposure control

8.2.1 Appropriate Engineering Controls

General Measures at Unit Level

The CSSM has been set up at unit level (Board for Security and Safety at Work) and its meetings debate on the assessment of risk factors for accidents and occupational diseases at work.

An assessment has been made in respect of risks of accidents and occupational diseases by committees established under the management decision; as a result thereof, preventive measures have been put in place in order to remove risks or mitigate unavoidable risks, with the purpose of ensuring safety and health at work, reducing accidents at work and occupational diseases.

Workers have individual instructions available on the use of hazardous chemical agents.

- The staff is provided with personal protective equipment.
- Collective protective means have been provided.

Collective Protection Measures at the Risk Source - CALCIUM AMMONIUM NITRATE

Technical Measures

Monitoring system for the main operating parameters under safe conditions for equipment (pressure, temperature, concentration, flow rate, level etc.) with the possibility of acoustic and/or visual warning of their failure.

Protective devices - guards in flanges on all the routes with hazardous fluids.

Signalling system for safety and health at work in accordance with Government Decision No 971/2006 (security marks for warning, prohibition, obligation, restriction to danger zones).

Ventilation systems.

Water sources with ascending spraying (to wash eyes in the event of splashing).

Control of toxic gases level.

Organisation and provision of insulating personal protective equipment.

Provision and organisation of specialised medical attendance in the event of gas intake.

Organisational Measures

Manufacturing regulation, Work instructions and HSW-FF. Safety data sheet for hazardous substances.

Organisation of informational surveillance and emergency system:

Action plan in case of fire

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Internal Emergency Plan (PUI).

Evacuation action plan in emergency situations

Action plan in case of earthquake

Action plan for safe road transport (PSTR).

Job / position authorisation for workers carrying out activities relating to operation, maintenance and repairs (mechanical, electrical, automation) to technological equipment.

HSW training of workers in Azomures at all stages (upon employment, at work, regularly, additionally) and HSW training of workers of contract-based services companies or persons inside the factory with the employer's permission, with regard to:

- Risks of job-specific accidents and occupational diseases;
- Minimum safety and health requirements, as provided for in the applicable legal rules with relevance for the job-specific activity;
- Duties and responsibilities of workers at work;
- Use of work equipment, personal protective equipment;
- Preventive and protective measures, method of operation in the event of danger;
- Giving first aid in the event of accidents at work.

Measures for Health Risks Management

No necessary measures for risk management have been identified.

8.2.2 Personal Protection Measures and Personal Protective Equipment

Hands protection: Impervious safety gloves (nitrile rubber, crosnitril, cotton-lined), 6th grade permeability resistance;

Eyes protection:

Tight protection glasses (plastic casing, polycarbonate lens)

Eye shield (polycarbonate) - against danger of splashing with nitrate

Skin protection

Protective gear:

Protective dust-proof outfit (duck overalls - breast-plate trousers, coat);

Winter shirt, summer shirt (duck natural fiber);

Protective shoes:

Protective boots with resistance against corrosive chemical agents (rubber, PVC).

Ankle boots against chemical attack, mechanical stress, with antistatic properties enabling use in extreme environments (leather with rubber sole).

Respiratory protection

Dust mask with specific powder-retention efficiency.

Protective dust-proof outfit (duck overalls - breast-plate trousers, coat); winter shirt, summer shirt (natural duck material).

8.2.3 Environmental exposure controls

No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information concerning the main physical and chemical properties

a) Appearance of substance / mixture

Physical state: grains

Colour : whitish

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b) Odour

Odourless

c) pH in the solution (100 g/l): > 4.5

d) Melting point: 60- 170 °C (depending on composition)

e) Boiling point: > 210 °C (with decomposition)

f) Flammability: the fertiliser is highly resistant to detonation; this resistance is lower in the presence of contaminants or at high temperatures. Heating at high temperatures in enclosed areas, e.g. pipes, etc., may lead to violent reaction or explosion, in particular if the fertilisers are contaminated with hazardous substances, as indicated in section 7.1.1.

g) Oxidising properties: none, according to EC No. 1272/2008 Regulation (CLP); under certain conditions (high temperature or in the presence of flammable substances), it may sustain combustion.

h) Explosive properties - Product is not explosive.

g) Self-inflammability – Products is not self-igniting.

h) Bulk density: 900-1,100 kg/m³

i) Water solubility: ammonium nitrate is highly soluble

CaCO₃/MgCO₃ weak solubility

j) Hygroscopy: hygroscopic

9.2. Additional information

No other data available.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Under normal conditions of storage, handling and use, the product is stable.

10.3. Hazardous reactions potential

Hazardous reactions: not known.

10.4. Conditions to avoid

High temperatures (above 60 °C) - constituents decompose and toxic gases of nitrogen oxides and ammonium are released.

High pressures (heating of closed recipients leads to increased pressure within). Product evaporation or drying.

10.5. Incompatible materials

Flammable materials and lubricants.

Oxidising agents, acids, bases, sulphides, chlorates, chromates, nitrates, permanganates. Metal powders (e.g. copper, nickel, cobalt, zinc and their alloys).

10.6. Hazardous decomposition products

The product does not decompose if instructions for use are followed. In contact with alkaline materials, it may release gas ammonia.

The fertiliser is not flammable alone, however it can sustain combustion even in the absence of air. It melts at high temperature, and it decomposes at very high temperatures, releasing toxic gases containing nitrogen oxides and ammonia.

Highly resistant to detonation.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics (Absorption, Metabolism, Distribution and Removal)

No information.

11.1. Information on toxicological effects

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

LD₅₀ (orally, rats): >2,000 mg /kg

Above the admissible limit, it may cause methemoglobinemia.

(b) Irritation

No data available.

(c) Corrosiveness

No data available.

(d) Sensitisation

No data available.

(e) Toxicity upon repeated doses

No data available.

(f) Carcinogenicity

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No data available.

(g) Mutagenicity

No data available.

(h) Reproductive toxicity

No data available.

(h) STOT – unique exposure – no data available

(i) STOT – repeated exposure – no data available

(j) Aspiration hazard - no data available

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

11.1.3 The results of experimental studies by route of exposure - no data available.

11.1.4 For the following hazard classes: STOT – single exposure, STOT – repeated exposure, aspiration hazard – no data available

11.1.5 Information on the likely routes of exposure

The likely routes of exposure are ingestion (swallowing), inhalation or skin / eyes exposure - no data available

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

No data available

11.1.8 Interactive effects

No data available.

11.1.9 Absence of specific data

No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Aquatic compartment (including sediments)

Low toxicity for aquatic life.

TLM 96 between 10 and 100 ppm

Terrestrial compartment - No data available

Atmospheric compartment - No data available

12.2. Persistence and degradability

Both ammonia nitrogen and nitric nitrogen are essential for plants nutrition; the ammonium ion is likely to oxidise in time turning to nitrate ion and possibly lead to soil acidification.

12.3. Potential for bioaccumulation

The fertiliser does not cause bioaccumulation.

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12.4. Mobility in soil

Absorption/desorption

Ammonium nitrate is highly soluble in water. The NO₃ ion is mobile. The NH₄ ion is absorbed by the soil.

Limestone and dolomite are regarded as insoluble in water. They are present in nature.

Volatility - not applicable to inorganic substances.

Distribution modelling - no data available

12.5. PBT and vPvB assessment results

In accordance with Annex XIII of Regulation (EC) No 1907/2006, the PBT and vPvB assessment was not made, since calcium ammonium nitrate is a mixture of inorganic substances.

12.6. 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

Waste must be disposed of in accordance with national and local regulations. Controlled biodegradation as part of waste water treatment is possible.

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

National legislation in force:

Law no. 211/2011 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).

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

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

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

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SECTION 14. TRANSPORT INFORMATION

Calcium ammonium nitrate is not classified according to UN Orange Book, RID, ADR, and IMDG; the product is not considered hazardous in transport (Section 39 of the Manual of Tests and Criteria, Part III, Figure 39.1 (c)).

Chapters 14.1; 14.2; 14.3; 14.4 are not applicable.

14.5. Environmental hazards

No available information.

14.6. Special precautions for users

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.

Each delivery is accompanied by the Conformity Statement.

Marking is consistent with the regulations in force.

All shipments must be accompanied by the relevant transport document for the transported goods, in accordance with the legislation in force.

The product is not classified as ADR, RID, IMDG for transport.

14.7. Bulk transport, according to Annex II to MARPOL convention and IBC Code

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.

Government Ordinance no. 651/2003 for the modification and completion of Government Decision no. 716/2001 for establishing trading conditions for chemicals fertilizers coming from domestic production and import.

Law no. 278/2013 on industrial emissions.

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Departmental normative on the design of ammonium nitrate storages - PD -103 - 72, Ministry of Chemical Industry, Bucharest 1972.

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).

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

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

Regulation (EC) no. 830/2015 of the Commission from date of 28.05.2015 amending Regulation (EC) no. 1907/2006.

EC no. 2003/2003 regulation of the European Parliament regarding fertilizers with its subsequent amendments relating to EN standards drawn up by the European Committee for Standardization.

Regulation (EU) No 98/2013 of the European Parliament and of the Council of 15 January 2013 on the marketing and use of explosives precursors.

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2019 edition.

Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2019 edition
International Maritime Dangerous Goods (IMDG), 2017 edition.

Other regulations

“This product is not subject to Regulation (EU) 98/2013, but all suspicious transactions, disappearances and thefts shall be reported to the relevant authority.”

15.2 Chemical safety assessment

Not applicable.

SECTION 16. ADDITIONAL INFORMATION

a) A clear evidence of added, deleted or modified information

Version (revision, edition), number	Date	Page number	Information evolution
edition 5, revision 0	06.01.2014	7, 12	At page 7 chapter 8.2.1. - Organizational measures, Monitoring and intervention plans were modified At page 12 section 15.1 – information regarding national legislation was modified.
version 6	06.01.2015	3, 6	At page 3, section 3 chapter 3.1 was modified as updating the registration dossier of ammonium nitrate.

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Version (revision, edition), number	Date	Page number	Information evolution
			At page 6, section 7, chapter 7.2 was modified the number of rows it is stored bags.
version 7	01.06.2015	1, 2, 10	At page 1, section 1.4 emergency telephone number was modified. At page 2, in section 2.1 it was removed classification in accordance with directive 67/548/ EEC. At page 11, chapter 13.1 - Waste treatment methods national legislation was modified.
version 8	13.10.2015	10	At page 10, section 14.6 introduced the optimal temperature range for transport et and storage.
version 9	09.05.2016	5, 8, 11	At page 5, section 7.2 it was rephrased the provision referring to stacking storage. At page 8, section 11 they have introduced additional toxicological data. At page 11, section 15.1 it was introduced Regulation no. 830/2015.
version 10	15.10.2018	6	At page 6, section 7.2 has changed in accordance with current legislation.
version 11	12.04.2019	6, 12	At page 6, section 7.2 has been reformulated. At page 12, section 14 additions were made in accordance with to ADR 2019.
version 12	25.06.2019	13	At page 13, section 15.1 "Other regulations" have been introduced.

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

SDS	- Safety Data Sheet
ECHA	- European Chemicals Agency
EC	- European Commission
ESIS	- European Chemical Substances Information System
FE (EFMA)	- Fertilizers Europe (European Fertilizer Manufacturers Association)
REACH	- Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals
LD50	- Lethal dose for 50% of tested population
STOT	- Specific target organs of toxicity

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TLV/TWA	- Threshold limit value for short/medium term exposure, weighted by time, without adverse effects
TLM	- Acute toxicity in fish
PBT	- Persistent, Bioaccumulative, Toxic
vPvB	- very Persistent, very Bioaccumulative
GD	- Government Decision
GEO	- Government Emergency Ordinance
HSW	- Health and Safety at Work
PSI	- Security and Fire Extinction
ADR	- European Agreement concerning the International Carriage of Dangerous Goods by Road, 2019 edition
RID	- Regulation concerning International Carriage of Dangerous Goods by Rail, 2019 edition
IMDG	- Regulation concerning International Maritime Hazardous Goods, 2017 edition
MARPOL	- International Convention for the Prevention of Pollution from Ships
IBC	- International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
w/w	- mass unit

c) Bibliography

Official Journal of the European Union – EU Regulation no. 830/2015 of the European Council of 28.05.2015

EFMA - Guidance for the Preparation of Safety Data Sheets

ESIS - European Chemical Substances Information System

Official Journal of the European Union - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

GESTIS Data Bank - Material Safety Data Sheets

Laurențiu Filipescu - Physical and Chemical Properties of Granulate Fertilizers, edition M.I.Ch., Bucharest, 1987

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.