Revision date: 2026.02.28
Version No. 13.0
Revision No. 0
Issuing date: 2026.02.28

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

1.1 Product identifier

Trade name of mixture: ammonium nitrate solution
Other means of identification: Unique formula identifier of the product according to the Regulation (EU) 2020/11 UFI: 676F-9AG7-2668-2411.

1.2 Relevant identified uses of the mixture and uses advised against

1.2.1 Uses:
Industrial use:
- Industrial use [SU8, SU9]: Manufacturing of the substance, including handling, storage and quality control.
- Industrial use [SU3, SU10]: Industrial manufacturing products used as intermediate or final product in industrial activities (PC1, PC11, PC12, PC19, PC37).

1.2.2 Uses advised against: None.

1.3 Details of the supplier of the safety data sheet

Manufacturer: AB Achema
Full address: Jonalaukio k. 1, Jonavos sen., LT-55296
Country: Lithuania
Tel. Nr.: +370 349 56736
Manufacturer's website: www.achema.lt
Person responsible for the Safety Data Sheet (with e-mail address): Mindaugas Vaidila, m.vaidila@achema.com

1.4 Emergency telephone number

Please contact: Poison Information and Control Office in the Republic of Lithuania by phone +370 52362052, cell phone +370 687 53378, on site http://www.apsinuodijau.lt/information-in-english/ or by the Common emergency Center by 112.
Helpdesk services work 24 hours a day, 365 days a year.
Other remarks (language in which assistance is provided): assistance is provided in Lithuanian.

Poison Control Centers in Europe are available on site http://www.who.int/pcs/poisons/centre/directory/euro/en/.
Telephone numbers of poison control centers in the European Economic Area: **IRELAND** (Dublin) +353 1 8379964; **AUSTRIA** (Vienna) +43 1 406 43 43; **BELGIUM** (Brussels) +32 70 245 245; **BULGARIA** (Sofia) +359 2 9154 409; **CZECH REPUBLIC** (Praha) +420 224 919 293; **DENMARK** (Copenhagen) 82 12 12 12; **ESTONIA** (Talinn) 112; **GREECE** (Athens) +30 10 779 3777; **ICELAND** (Reykjavik) +354 525 111, +354 543 2222; **ITALY** (Rome) +39 06 305 4343; **LATVIA** (Ryga) +371 704 2468; **MALTA** (Valletta) 2425 0000; **NORWAY** (Oslo) 22 591300; **NETHERLANDS** (Bilthoven) +31 30 274 88 88; **FRANCE** (Paris) +33 1 40 0548 48; **FINLAND** (Helsinki) +358 9 471 977; **SWEDEN** emergency cases 112; in less acute cases +46 040 456 6700; **HUNGARY** (Budapest) 06 80 20 11 99; **GERMANY** (Berlin) +49 30 19240.

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance

2.1.1. Classification in accordance with Regulation No. 1272/2008 [CLP]:
Oxidising Solids 3, H272;
Eye Irrit. 2, H319.
Hazard statement(s): H272

2.2 Label elements

2.2.1. Labelling in accordance with Regulation No. 1272/2008 [CLP]:

Hazard pictogram(s):

Signal word: WARNING

Hazard statement(s):
H272 – May intensify fire; oxidiser.
H319 – Causes serious eye irritation.
Precautionary statement(s):
P210 – Keep away from heat/ sparks/open flames/hot surfaces. — No smoking.
P220 – Keep/Store away from clothing/combustible materials.
P221 – Take any precaution to avoid mixing with combustibles, reducing agents, acids, alkali, sulphur, chlorates, chlorides, nitrates, permanganates, powder of metals and materials containing metals as follows: copper, nickel, cobalt, zinc and their alloys.
P370+P378 – In case of fire: Use water for extinction.
P264 – Wash hands thoroughly after handling.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards

According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate solution is inorganic mixture.
Other hazards: The product may explode if it is contaminated or mixed with incompatible materials. The product is non-flammable, but, in contact with combustible materials, increases the risk of ignition and can significantly increase the existing fire. May cause acute deterioration (see subsection 4.1 of this SDS).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

According to the Regulation (EC) No. 1907/2006 the product is a multi-constituent.

Identity of the components of the mixture.

CAS no.	EC no.	Index No. in accordance with Regulation (EB) No. 1272/2008	REACH registration no.	The mass (volume) of %	IUPAC name	Classification in compliance with Regulation (EC) No. 1272/2008
6484-52-2	229-347-8	Not applicable	01-2119490981-27-XXXX	91	Ammonium nitrate	Oxid. Solids 3, H272 Eye Irrit. 2; H319
7664-41-7	231-635-3	007-001-00-5	01-2119488876-14-XXXX	≤ 0.2	Ammonia	Flam.Gas Cat. 2, H221, Acute Tox Cat. 3, H331 Skin corr. / irritation Cat. 1B, H314 Acute aquatic hazard Cat. 1, H400 Chronic aquatic hazard Cat. 2, H411 EUH071. Specific concentration limits: 1) C ≥ 25 % : Skin corrosion / irritation Cat 1B; Specific target organ toxicity - single exposure Cat. 3, H335; Acute aquatic hazard Cat. 1, H400; Chronic aquatic hazard Cat. 2, H411. 2) C ≥ 5 % C < 25 %: Skin corrosion / irritation Cat. 1B; Specific target organ toxicity - single exposure Cat. 3, H335; Chronic aquatic hazard Cat. 3, H412. 3) C ≥ 2,5 % C < 5 %: Skin irritation Cat. 2; Chronic aquatic hazard Cat. 3, H412. 4) C ≥ 1 % C < 2,5 %: Skin irritation Cat. 2

SECTION 4. FIRST-AID MEASURES

4.1 Description of first aid measures

4.1.1 General information

The material can get through: inhalation, skin, eyes and mouth.

Inhalation: remove the victim from exposure into fresh air immediately if adverse effects (e.g. dizziness, drowsiness or respiratory irritation) occur. If victim is not breathing, use mouth-to-mouth respiration. Or if breathing is difficult, give oxygen and seek medical advice.

Skin contact: Wash affected skin area with plenty of water and soap for at least 15 minutes thoroughly while removing contaminated clothing and shoes. Seek medical advice if irritation develops and persists.

Eye contact: Immediately wash eyes with plenty of running water for at least 15 minutes. Remove contact lenses if present and easy to do. Seek medical advice if irritation develops and persists.

Ingestion: seek medical advice if the victim feels unwell. Wash out mouth with plenty of water and give plenty of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical advice if symptoms occur.

4.1.2. Individual protection measures recommended for first-aiders: Comply with general hygiene

requirements. Wear suitable protective clothing and gloves. Avoid contact with eyes, skin, and clothing.

4.2 Most important symptoms and effects

If inhaled: irritation of the respiratory tract.
If on skin: skin irritation.
If in eyes: eye irritation, and pain.
If swallowed: may cause burns or irritation of the gastrointestinal tract.
Delayed effects: none.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician: Fire extinguishing gas or ammonium nitrate thermal decomposition products (nitrogen oxides, ammonia) can cause respiratory irritation and damage by inhalation. Pulmonary damage may not occur immediately, but after a certain period of time. Give oxygen to breath, especially when the blues around the mouth.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: if product is not directly involved in the combustion process, use any best available measures. If product is directly involved in combustion process, use large quantities of water. In the case of a small/large fireplace, because the product is non-combustible, it can withstand burning, extinguishing with water.
Unsuitable extinguishing media: Do not use chemical or powder extinguishers. Do not attempt to suppress the fire with steam or sand.

5.2 Special hazards arising from the substance or mixture

May be explosive in contact with flammable or organic substances and at confinement during fire. May undergo detonation if heated under confinement causing pressure build up and/or if subjected to strong shocks. Contamination of ammonium nitrate with combustible substances could cause an explosion.
In case of fire, may produce hazardous decomposition products such as nitrogen oxides (NO, NO_2 etc.), ammonia (NH_3), amines.

5.3 Advice for firefighters

Special measures: open windows and doors, do not inhale smoke (which is toxic), stand upwind of the fire, ensure that fertilizers are not contaminated with lubricants or flammable materials. Wear appropriate protective clothes. Wear personal protective equipment (safety boots, protective work clothing, protective gloves, eye, face protection, respiratory protection) according to LST EN 469. Use compressed air breathing apparatus if necessary.

5.4. Additional information

The water used for extinguishing which has been contaminated must be collected. Do not empty into drains or sewers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For personnel not involved in emergency situations: Avoid contact with eyes, skin, and clothing.

For respiratory protection use a respirator according to LST EN 149 or a mask with filter A2B2E2K2P3 according to LST EN 405. For eye protection, if a mask is not used, use chemically resistant goggles according to LST EN ISO 16321-1 and LST EN ISO 16321-3.

6.1.2. For the personnel involved in emergency situations: keep the collected product away from sources of ignition. Prevent the formation of dust by blowing wind. Avoid walking on the spilled product, avoiding dust. For respiratory protection use a respirator according to LST EN 149 or a mask with filter A2B2E2K2P3 according to LST EN 405. For eye protection, if a mask is not used, use chemically resistant goggles according to LST EN ISO 16321-1 and LST EN ISO 16321-3. In case of fire, wear protective clothing in accordance with LST EN 469. If necessary, use self-contained breathing apparatus.

6.2. Environmental precautions

Prevent the material from contact with soil, entering surface water or sanitary sewer system. Do not discharge directly to a water source. If accidental spillage or washings enter drains or watercourses contact local authority.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep up and place into suitable labelled containers for recovery or disposal. Clean up affected area with a large amount of water. Do not collect spilled material in sawdust or other combustible material. Prevent formation of dust clouds. Residual trace can be wiped away.

6.4. Reference to other sections

See section 8 for personal protective equipment and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

7.1 Precaution for safe handling and protective measures

Technical measures/ Precautions: Premises and sites where ammonium nitrate solution is poured must be equipped with supply-exhaust ventilation in accordance with STR 2.09.02.

Avoid contact with eyes, skin and clothing. Prevent the formation of splashes when wind blows. Keep away from sources of ignition. Avoid contamination by any source including metals, dust and organic materials. Keep away from moisture.

General occupation hygiene: Do not eat, drink or smoke in working areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/ Storage conditions: Keep in the original container. Keep container tightly closed in a cool, dry, well-ventilated place. Keep product away from heat, sparks, flame and other sources of ignition, out of direct sunlight and away from combustible and reducing materials and other incompatible materials.

Unless there are stricter requirements for that country, it is allowed to store up to 1249 tons of product at a time in a warehouse. Larger amounts of product can be stored in facilities where according to the Resolution of the Government of the Republic of Lithuania No.16.08.2004. 966 "On the Approval of the Description and Listing of Criteria for the Listing and Classification of Substances, Mixtures or Preparations of Hazardous Substances in Hazardous Substances" (Official Gazette, 2004, No. 130-4649), as well as subsequent amendments and supplements Requirements for hazardous objects.

It is allowed to store 1250 tons up to 5000 tons of product at a time in a warehouse if the object complies with the requirements of the lower level according to the qualifying quantity of the stored product. It is allowed to store more than 5000 tons of product, if the object complies with requirements of the higher level according to the qualifying quantity of the stored product.

The maintenance of stationary containers of the product in Lithuania is performed in accordance with the

amendment of the Order No. A1-178 of the Ministry of Social Security and Labour of Republic of Lithuania of 30 May 2008 "On approval of the rules for maintenance of stationary non-pressurized containers of hazardous substances and mixtures", Order No. A1-1132 of the Ministry of Social Security and Labour of the Republic of Lithuania.
When storing the product in Lithuania in stationary containers with a volume of more than 50 m^3, these containers must be registered with the state register management institution in accordance with the Chief State Labor Inspector of the Republic of Lithuania order No. 1-178 of 1st of August 2006 "On the Approval of the List-Classification of Potentially Dangerous Equipment to be Registered in the State Register, Indicating Their Parameters". When storing the product in other countries, the storage requirements in force in those countries must be complied with.
The product is subject to the restrictions and obligations laid down in Regulation (EU) 2019/1148 for precursors to restricted explosives. It's provided in sub-section 15.1 of this SDS.
Incompatible products: combustible and reducing materials.
Suitable packaging materials: stainless steel, for example: (304), synthetic materials.
Non suitable packaging materials: zinc, copper.

7.3 Specific end use(s)

The product is used for the manufacturing of explosives used in mining.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Chemical, worker exposure limit value in air: none.
Long-term exposure limit (IPRD): Not applicable in Lithuania to ammonium nitrate according to hygiene norm HN 23; 14 mg / m^3 or 20 ppm (applicable in Lithuania according to hygiene norm HN 23).
Short-term exposure limit (TPRD): Not applicable in Lithuania to ammonium nitrate according to hygiene norm HN 23; 36 mg / m^3 or 50 ppm (applicable in Lithuania according to hygiene norm HN 23).
Limit value (NRD): Not applicable in Lithuania to ammonium nitrate and ammonia according to hygiene norm HN 23.
Occupational exposure limit (s) according to Directive 98/24/EC: not applicable for ammonium nitrate.
Occupational exposure limit (s) according to Directive 2004/37/EC: not applicable for ammonium nitrate.
Any other national occupational exposure limits: ammonia
United Kingdom (IPRD): 18 mg/m^3; United Kingdom (TPRD): 25 mg/m^3;
France (IPRD): 7 mg/m^3; France (TPRD): 14 mg/m^3.

Non-limiting value (s) (DNEL):
The product is concentrated ammonium nitrate water solution. The assessment of the safe use of the substance was carried out in a qualitative way. The main toxic effect of this substance is eye irritation, for which the DNEL can not be determined, since the critical dosage is unknown. Since the minimal known systemic effects have been determined using a high amount of substance that is never exposed to human exposure (see DNEL), quantitative exposure assessment is not necessary.
The physicochemical properties of the DNEL product, which could have the greatest negative effect, are provided.

Workers exposure

Exposure mode	Exposure type	Hazardous	Physicochemical property that could have the greatest negative effect
Inhalation	Systemic effect –	DNEL: 36 mg/m³	Toxicity ingested

	long lasting		
Inhalation	Systemic effect - acute	The hazard is not known	
Inhalation	Local effect – long lasting	The hazard is not known	
Inhalation	Local effect – acute	The hazard is not known	
Dermal	Systemic effect – long lasting	DNEL: 5,12 mg/kg bw/day	Toxicity ingested
Dermal	Systemic effect – acute	No hazard identified	
Dermal	Local effect – long lasting	The hazard is not known	
Dermal	Local effect – acute	No hazard identified	
If in eyes	Local effect	Low hazard	

Predicted inactive concentration(s) PNEC:

Section	Hazardous	Comments / Grounds
Fresh water		No effect was observed in all eco-toxicity studies with the highest recommended concentration of ammonium nitrate (nominal 100 mg / l). Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment", assessment of the impact of water bodies is not necessary and PNEC values are not derived.
See water		No effect was observed in all eco-toxicity studies with the highest recommended concentration of ammonium nitrate (nominal 100 mg / l). Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment ", assessment of the impact of water bodies is not necessary and PNEC values are not derived.
Freshwater sediment		No effect was observed in all eco-toxicity studies with the highest recommended concentration of ammonium nitrate (nominal 100 mg / l). No data on eco-toxicity in sediment organisms. In addition, it is considered that such data are not necessary. Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment ", assessment of the impact of water bodies is not necessary and PNEC values are not derived.
See water sediment	There is no probability of sediment exposure	No effect was observed in all eco-toxicity studies with the highest recommended concentration of ammonium nitrate (nominal 100 mg / l). No data on eco-toxicity in sediment organisms. In addition, it is considered that such data are not necessary. Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment ", assessment of the impact of water bodies is not necessary and PNEC values are not derived.
Microorganisms in sewage treatment system	PNEC STP: 18 mg/l	Exposure factor: 10 Extrapolation method: exposure factor. Available test data with sodium nitrate, which is similar in structure to ammonium nitrate, EC50> 1000 mg / l and NOx 180 mg / l. An assessment factor of 10 was used in accordance with the ECHA Guideline on Information Requirements and Chemical Safety Assessment. Section R.10.
Soil		No effect was observed in all eco-toxicity studies with the highest recommended concentration of ammonium nitrate (nominal 100 mg / l). No data on ecotoxicity to soil. In addition, it is considered that such data are not necessary. Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment ", assessment of the impact of water bodies is not necessary and PNEC values are not derived.
Air		No data available: It is proposed that the PNEC value should not be set.
Food chain	No bioaccumulation potential	According to Regulation (EC) No.1272/2008 hazard statements H373, H372, H360, H361 and H362 are excluded from the scope of Regulation (EC) No 1272/2008. The substance is highly water soluble and is therefore

		believed to have a low bioaccumulation potential. Therefore, on the basis of the ECHA document "Guidance on information requirements and chemical safety assessment Part B.7", exposure assessment for the food chain is not necessary and the values for PNEC in the mouth are not derived.

No additional material measurements / monitoring are required during product production, storage and product use. The product must be manufactured and used in a professional manner by the Minister of Social Security and Labor of the Republic of Lithuania and the Minister of Health of 2001 of 24 of July Order No. 97/406 „On approval of Regulations for the Protection of Workers from Chemical Agents at Work and for the Protection of Workers against the Exposure to Carcinogens and Mutagens at Work" (Official Gazette, 2001, No. 65-2396), with all the subsequent amendments and additions.

8.2 Exposure controls

8.2.1 Appropriate engineering controls: use proper supply-exhaust ventilation, install a shower. Store and dispose of the product properly.

8.2.2. Individual protection measures, such as personal protective equipment: The personal protective equipment must be used in accordance with good work-hygiene practices and must be used in conjunction with other control measures, including technical controls, proper supply-exhaust ventilation and isolation.
Additional good practices that can be carried out following a REACH risk assessment may include: additional appropriate restrictions; reducing the number of unprotected staff; isolation process; effective extraction, removal of contaminants; proper supply-exhaust ventilation; manual work reduction; avoiding contact with contaminated tools and objects; regular cleaning of equipment and workstation; management / supervision by verifying the correct use of RMMs in compliance with OCs; staff training on good practice; personal hygiene.
8.2.2.1. Eye (face) protection: chemical protective safety goggles or face shield according to LST EN ISO 16321-1 and LST EN ISO 16321-3.
8.2.2.2. Skin protection
Hand protection: adequate protection gloves according to LST EN 420, LST EN ISO 21420 due to chemical protection, LST EN 388 due to mechanical protection, LST EN 407 due to the heat protection. Protective gloves must be made of one of the materials listed in the table, at least as specified, for penetration of thickness and resistance.

Glove material	Glove thickness, mm	Penetration time, min
Butyl rubber - butyl	0.50	> 480
Nitrile rubber/Nitrile latex	0.35	> 480
Fluorocarbon rubber	n.m. 0.40	> 480
Polychloroprene	n.m. 0.50	> 480
Natural rubber/Natural latex	0.50	> 480
Polyvinyl chloride	0.50	> 480

* - Time of penetration of glove material is the time that the product in contact with the glove penetrates through it completely. The shorter the penetration time, the glove material is less resistant to the product.

The suitability and durability of gloves depend on the frequency and duration of contact with the product, the material used to manufacture gloves, chemical resistance, gloves, functional use. It is recommended to use glove material with a penetration time of less than 480 minutes when working with the product continuously. When working with the product, gloves may not be used for longer than the penetration time.
Skin protection creams do not adequately protect from the product.
Please note that the penetration time of the glove material in this section has been set at 22 °C and using pure ammonium nitrate. When working at a higher than 22 °C temperature, the resistance of the glove material may be considerably lower, and in such cases, the permitted life of the glove must be shortened. We recommend that when you start using a new type or other manufacturer's gloves, make sure that they are chemically and mechanically resistant to working conditions. If you have any questions about the suitability

of the gloves, please contact the manufacturers / suppliers of gloves.
The inside of the gloves should not contain powders which can cause hand skin allergies.
Before using the gloves, please always make sure there are no tears, cracks, or other defects.
When the work is finished, the gloves must be cleaned and washed thoroughly before they are dry. After work, care must be taken to the hand skin.
Other protective equipment: to wear full body working clothes in accordance with LST EN ISO 13688, wear working boot in accordance with LST EN ISO 20345 for the purpose of product packaging.
8.2.2.3. Respiratory protection: If there is an ammonia smell, wear a half mask or a mask with filter A2B2E2K2P3 that meets the requirements according to LST EN 14387.
8.2.2.4. Thermal protection: adequate protection gloves according EN 407, heat-resistant work suit, working boots.
Hygiene measures: do not eat, drink or smoke while using the product. Strictly keep the product out of the skin, eyes or clothing. Keep away from food, drink and animal feed. Wash your hands every time you finish working with the product, and at the end of the day. After the work is done, take a shower. Remove contaminated clothing immediately. Do not breathe dust, vapors or aerosols.

8.2.3 Environmental exposure controls: ammonium nitrate washings in Lithuania must be disposed of in accordance with the Lithuanian Republic Law on Waste Management, in other countries – in accordance with national legislation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

(a) Physical state: colorless liquid at a temperature of 135 °C ÷ 145 °C and a pressure of 1013 hPa.
(b) Color: colourless.
(c) Odor: mild ammonia odor could be felt. The product contains not more than 0,2% free ammonia.
(d) Melting and solidifying temperature: The crystallization temperature of the product is 91 – 110 °C. The melting point of pure solid ammonium nitrate is equal to 169.6 – 169.7ºC (according to handbook).
(e) Boiling point or initial boiling point and boiling range: (142 ÷150) °C.
(f) Flammability: non-flammable (based on molecular structure).
(g) Upper and lower explosion limits: the product does not meet the criteria for classification as explosive in accordance with Regulation (EC) No. 1272/2008. Risk of explosion may be caused by heating the product. The heated product decomposes.
(h) Flash-point: for noneflamable liquids in accordance with Column 2 of REACH Annex VII, flash point does not need to be conducted.
(i) Auto-ignition temperature: not applicable.
(j) Decomposition temperature: >210 °C decomposition starts.
(k) pH: pH water solution (10 % w/w) 3,5-6,0.
(l) Kinematic viscosity: 2 mm^2/s (at 140 °C).
(m) Solubility: in water >100 g/l at 20ºC (according to handbook). Highly soluble in water: 1198 g/l at 0 ºC; 1497 g/l at 10 ºC; 1872 g/l at 20 ºC. When dissolving ammonium nitrate, the temperature of the solution decreases significantly, therefore, in order to accelerate the dissolution of the ammonium nitrate, the solution must be warmed up.
(n) Partition coefficient: n-octanol/water (logarithmic value): not relevant as the substance is inorganic, considered to be low (based on high water solubility).
(o) Vapor pressure: no data available.
(p) Density and / or relative density: (D4 (20)): (1370-1400) kg/m^3 at 140 °C.
(q) Relative vapor density: no data available.
(r) Fraction properties: Not applicable as the product is a liquid.

9.2 Other information

Temperature of product for loading and transportation: (135 ÷ 145) °C.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable at (135 ÷ 145) °C temperature, under recommended storage and handling conditions (see section 7 according to handling and storage).

10.2 Chemical stability

Stable at (135 ÷ 145) °C temperature, under recommended storage and handling conditions (see section 7, according to handling and storage).

10.3 Possibility of hazardous reactions

The product may explode if it is contaminated or mixed with the following materials: alkyl esters, aluminum (powder), aluminum chloride, oils , ammonia, coal, barium nitrate, chlorates, chlorine, cyano-guanidine, sugar, flammable substances, dinitrotoluene, formamide, iron (III) chloride, hydrocarbonates, calcium chloride, potassium permanganate, potassium, urea, carbides, wood flour, metal powder, mineral oil, sodium hypochlorite, sodium nitrate, sodium perchlorate, organic matter, reducing agents, rust, sulfur, antimony (powder)), antimony trisulfate, alkali metals, trinitroanisole, trinitrotoluene, water, copper-iron (II) sulphide, copper oxide, waxes.
The product may explode if it is contaminated or mixed with the following chemical mixtures: 1) acetic anhydride + nitric acid; 2) aluminum powder + calcium nitrate + formamide; 3) ammonium salts + acids; 4) potassium + ammonium sulfate; 5) metal oxides + carbon; 6) superphosphate + organic material + heat.
Explosion hazards can be caused by heating the product. The heated product breaks down.
The product may react dangerously in contact with acetic acid (if heated additionally), ammonium dichromate, phosphorus (even if it is low in quantity),potassium dichromate, metal nitrite, sodium chloride.

10.4 Conditions to avoid

Avoid heating above 170 °C (split into gases), contact with incompatible materials, keeping it away from hot surfaces or flames, heating in a closed container (in a closed container, breakage may pass into explosion). In places where the product is stored / used, do not perform welding work.

10.5 Incompatible materials

Flammable substances, chlorates, chlorides, chromates, substances containing copper, nickel, cobalt, zinc and their alloys, metal powders, nitrites, permanganates, reducing agents, acids, sulphur, alkalis. Also, all materials listed in subsection 10.3 of this SDS.

10.6 Hazardous decomposition products

When strongly heated, it melts and decomposes releasing toxic fumes (e.g. NO, NO_2, ammonia). When in contact with alkaline material such as lime, may give off ammonia gas. Chemical decomposition of ammonium nitrate may be caused by contact with the following substances: flammable substances, reducing substances, acids, chlorides, chlorates, nitrites, permanganates, metal powders (especially zinc and its alloys).

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity:

Practical experience / human information: no available data.
Effects on animals: ammonium nitrate

	Exposure dose / concentration	Routes	Method	Symptoms / delayed effects	Notes
Acute oral toxicity	LD50: 2950 mg/kg bw	Female/Male rats	OECD 401	Negative effects have not been established	Direct ATE Validation for Trusted Data
Acute dermal toxicity	LD50: > 5000 mg/kg bw	Female/Male rats	OECD 402	Negative effects have not been established	Direct ATE Validation for Trusted Data
Acute inhalation toxicity (vapour)	LC50: > 88,8 mg/kg bw	Rats		Negative effects have not been established	Direct ATE Validation for Trusted Data

Other information: data not available.
Assessment/Classification: Based on the available data, the product does not meet this hazard criteria in accordance with Regulation (EC) No 1272/2008.
Skin irritation or/and sensitization: Based on the available data, the product does not meet this hazard criteria in accordance with Regulation (EC) No 1272/2008. Justification. Studies on rabbits (OECD 404 analytical method) showed no evidence of skin irritation after 72 h (source: ammonium nitrate registration dossier under REACH).
Serious eye damage / irritation: Irritates eyes. In accordance with Regulation (EC) No 1272/2008 is classified as eye irritation cat. 2. Justification. Studies on rabbits (OECD 405 analytical method) have shown that ammonium nitrate is irritating to the eye (source: ammonium nitrate registration in REACH dossier).
Sensitizing of the airways or skin: have no sensitizing effects. In compliance with Regulation No. 1272/2008 preparation is not classified as sensitizing. Justification. Studies conducted with ammonium nitrate are not available. Investigations performed on a substance of similar structure – nitric acid ammonium calcium salt (calcium nitrate double salt) (OECD 429 analysis method) showed that this substance does not have a sensitizing effect. Based on this result, it has been found from the REACH documentation for registration of ammonium nitrate that ammonium nitrate has no sensitizing effect.
Mutagenicity: The product does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008 (OECD 471, 473, experiments performed on structure-like compounds with nitric acid ammonium calcium salt; OECD 476, tests performed on a structurally similar compound – potassium nitrate) (source: ammonium nitrate registration in REACH dossier).
Carcinogenicity: not carcinogenic, the product does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008 (OECD 453, experiments performed on structure-like compound with ammonium sulfate) (source: ammonium nitrate registration in REACH dossier).
Reproductive toxicity: The product does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008 (studies were carried out using OECD 422 method with a structurally similar substance - potassium nitrate). Studies result: oral 28-day NOAEL ≥ 1500 mg/kg bw/day (source: ammonium nitrate registration in REACH dossier).
Specific toxicity for particular organ (STOT) (one time effect): The product does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008.
Specific toxicity for particular organ (STOT) (repeated effect): The product does not meet the criteria for classification in accordance with Regulation (EC) No. 1272/2008.
Aspiration hazard: none.
Sub-acute toxicity:
Oral 28-day NOAEL ≥ 1500 mg/kg bw/day (EBPO 422, with potassium nitrate);
Oral 52-week NOAEL = 256 mg/kg bw/day (EBPO 453, with ammonium sulfate);
Inhalation 2-weeks NOAEL ≥ 185 mg/m^3 (EBPO 412).

11.2. Information on the other hazards

11.2.1. Endocrine disrupting properties: No data available.

11.2.2. Other information: None.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

According to the available data, the product does not meet the criteria for classification as dangerous for the environment in accordance with Regulation (EC) No. 1272/2008.
Fish (short-term): 48-h LC_{50}: 447 mg/l (no guideline followed).
Fish (long-term): No data available.
Daphnia magna (short-term): 48-h EC_{50}: 490 mg/l (no guideline followed, with potassium nitrate).
Daphnia magna (long-term): No data available.
Algae: 10-d EC_{50}: > 1700 mg/l (seawater, no guideline followed, performed with potassium nitrate).
Inhibition of microbial activity: 3-h EC_{50}: >1000 mg/l, NOEC: 180 mg/l (OECD 209, with sodium nitrate).

12.2 Persistence and degradability

Biodegradation: Standard test is not applicable as the substance is inorganic. In addition, in the anaerobic transformation of ammonium, one group of bacteria oxidizes ammonium to nitrite while another group oxidizes nitrite into nitrate. The average biodegradation rate in wastewater plant at 20 ºC is 52 g N/kg dissolved solid/day. Nitrate degradation is fastest in anaerobic conditions. In the anaerobic transformation of nitrate into N_2, N_2O and NH_3, the biodegradation rate in wastewater plant at 20 ºC is 70 g N/kg dissolved solid/day.
Hydrolysis: No hydrolysable group is present, will completely dissociate into ions.

12.3 Bio accumulative potential

Octanol-water partition coefficient (K_{ow}): Not relevant as the substance is inorganic, but considered to be low (based on high water solubility).
Bio concentration factor (BCF): Low potential for bioaccumulation (based on substance properties).

12.4 Mobility in soil

Adsorption coefficient: Low potential for adsorption (based on substance properties).

12.5 Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate is inorganic.

12.6 Endocrine disrupting properties:

Not specific to the product .

12.7 Other side effects:

None.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues. Ammonium nitrate solution waste according to Regulation (EC) No. 1357/2014 is classified as hazardous waste by **HP 2** „Oxidising" hazard statement code H 272 „May intensify fire; oxidizer", **HP 4** „Irritant – skin irritation and eye damage" and **HP 15** „Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste" hazard statement EUH044 „Risk of explosion if heated under confinement. Product waste must be handed over to waste management companies. It is recommended not to encourage product disposal with wastewater. Product waste in Lithuania must be managed in accordance with the Law on Waste Management of the Republic of Lithuania, in other

countries - in accordance with the requirements of national legislation. The final waste code of the product is assigned by the waste holder / manager.
Waste product packaging: Containers should be cleaned by appropriate method and then re-used or disposed by in accordance with local and national regulations. Product packaging waste must be handed over to waste management companies. Dispose of package waste in a safe way and in accordance with all applicable local and national regulations. Do not remove label, prepared according to Regulation (EC) No. 1272/2008, until package is thoroughly cleaned.

SECTION 14. TRANSPORT INFORMATION

14.1 UN Number or ID Number
2426

14.2 UN proper shipping name
Ammonium nitrate solution (hot concentrated solution).

14.3 Transport hazard classes
5.1

14.4 Packaging group
None.

14.5. Environmental hazards
None.

14.6. Special precautions for users
None.

14.7. Transport in bulk cargoes by sea in accordance with IMO measures
The product is packed in packaging for carriage and therefore is not subject to MARPOL 73/78 Annex II and the IBC Code.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

EU legislation:

-Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (published in the Official Journal of the European Union L 396/1, 2006) with all subsequent amendments and additions;

- Commission Regulation No. (EU) 2020/878 amending Regulation of the European Parliament and of the Council Annex II to Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (published in Official Journal of the European Union L 203 of 26 of June 2020);

- Commission Regulation (EC) No 552/2009 amending Regulation (EC) No 1907/2006 of the European Parliament and

of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII (published in the Official Journal of the European Union L 164, 2009), with any subsequent amendments and additions;

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (published in the Official Journal of the European Union L353/1 2008), with any subsequent amendments and additions;

- Commission Regulation (EC) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (published in the Official Journal of the European Union No L365/89, 2014), with any subsequent amendments and additions;

- Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (published in the Official Journal of the European Union L197/1, 2012), with any subsequent amendments and additions;

- Regulation (EU) 2019/1148 of the European Parliament and of the Council 20th of June 2019 on trade in and use of explosives precursors and amending Regulation (EC) No. 1907/2006 and repealing Regulation (EU) No. 98/2013 (published in the Official Journal of the European Union L 186/1, 2019) as subsequently amended and supplemented;

- Council Directive 98/24/EC of April 7 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC) (published in the Official Journal of the European Union L 131/11, 1998), with any subsequent amendments and additions;

- Council directive 2014/28 / EU of the European Parliament and of the Council February 26 2014 on the approximation of the laws of the Member States relating to the making available on the market and supervision of explosives for civil uses (new version), with any subsequent amendments and additions;

- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (Official Gazette, 2001, No 91-3349, identification code of the Register of Legislation 103T001SUTARG031675), with any subsequent amendments and additions;

- Regulations concerning the International Carriage of Dangerous Goods by Rail (RID);

- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code) (the IBC Code), with any subsequent amendments and additions;

- International Maritime Dangerous Goods Code (IMDG);

- 1973 International Convention for the Prevention of Pollution from Ships (Official Gazette, 2004, No 138-5030, identification code of the Register of Legislation: 073T001KONVRG731618), with any subsequent amendments and additions;

- Guide on safety data sheets and exposure scenarios (European Chemicals Agency, 2018. Reference: ECHA-18-G-07-LT), with all subsequent amendments and additions.

- European Inventory of Existing Commercial Chemical Substances (EINECS) (published in Official Journal of the European Union C 146 A, 1990).

- "European List of Notified Chemical Substances (ELINCS)" (EUR 22543 EN, Office for Official Publications of the European Communities, 2006, ISSN 1018-5593) with all subsequent amendments and additions.

National legislation (Lithuania):

- The Law of the Republic of Lithuania on Chemical Substances and Preparations (No. VIII-1641 of 18 April 2000) (Official Gazette 2000, No. 36-987; TAR identification code 1001010ISTAIII-1641) with any subsequent amendments and additions.

- The Law of the Republic of Lithuania on the Transport of Dangerous Goods by Road, Railway and Inland Waterways

(Official Gazette, 2001, No. 111-4022, TAR identification code 1011010ISTA00IX-636) with any subsequent amendments and additions.

- The Law of the Republic of Lithuania on Waste Disposal (16 June 1998, No VIII-787) (Official Gazette, 1998, No 61-1726, identification code of the Register of Legislation: 0981010ISTAVIII-787), with any subsequent amendments and additions.

- Law of the Republic of Lithuania on Package and Package Waste Handling (25 September 2001, No IX-517) (Official Gazette, 2001, No 85-2968, identification code of the Register of Legal Acts 1011010ISTA00IX-517), with any subsequent amendments and additions.

- Law of the Republic of Lithuania on the Supervision of Toxic Substances (No. IX-456 of 12 July 2001) (Official Gazette 2001, No. 64-2330; TAR identification code 1011010ISTA00IX-456) with all subsequent amendments and additions.

- Law of the Republic of Lithuania on the Control of the Circulation of Explosives No. IX-1315 amending law (No. XII-2527 of 29 June 2016) (TAR, 2016-07-13, No. 20285) with all subsequent amendments and additions.

- Order No 2017 of the Minister of Environment of the Republic of Lithuania of 14 July 1999 "On the Approval of Waste Management Rules" (Official Gazette, 1999, No 63-2065, identification code of the Register of Legislation: 099301MISAK00000217), with any subsequent amendments and additions.

- Order No V-824/A1-389 of the Minister of Health and the Minister of Social Security and Labour of the Republic of Lithuania of 1 September 2011 "On the Approval of Lithuanian Hygiene Standard HN 23:2011 'Indicative Occupational Exposure Limit Values of Chemical Substances. General Requirements for Measurement and Exposure assessment'" (Official Gazette, 2011, No 112-5274, identification code of the Register of Legislation: 1112250ISA4/A1-389), with any subsequent amendments and additions.

- HN36 Banned and Restricted Substances.

- Order No 97/406 of the Minister of Health of the Republic of Lithuania of 24 July 2001 "On the Approval of Regulations on Protection of Employees from Risks Related to Exposure to Chemical Agents at Work and Regulations on Protection of Employees from Risks Related to Exposure to Carcinogens and Mutagens at Work" (Official Gazette, 2001, No 65-2396, identification code of the Register of Legislation: 1012230ISAK0097/406), with any subsequent amendments and additions;

- Resolution No. 966 of the Government of the Republic of Lithuania of 17 August 2004 "On the Approval of the Provisions of the Prevention, Liquidation and Investigation of Industrial Accidents and of the List and the Description of Qualification Criteria for the Substances, Mixtures or Preparations Classified as Dangerous Substances in Dangerous Objects" with subsequent amendments and additions (Official Gazette, 2004, No. 130-4649; 2005, No. 131-4731; 2008, No. 109-4159; 2009, No. 90-3855; 2010, No. 59-2894; 2012, No. 61-3078) with any subsequent amendments and additions.

- Resolution No. 1272 of the Government of the Republic of Lithuania of 28 December 2016 "On the Government of the Republic of Lithuania of April 2013, resolution No. 387 "On Amendment to the Licensing Rules for the Production, Trade and Use of Explosives" (TAR, 2016-12-29, No. 29878) with all subsequent amendments and additions.

- Applicable Procedure of Safety Data Sheet Requirements and Supply thereof to Professional Users.

- Applicable Rules on Labelling of Items (Products) to be Sold in Lithuania and Referring Price thereof.

- LST EN 149 "Respiratory protective devices. Filtering half masks for protection against particles. Requirements, testing, labelling".

- LST EN 388 "Protective gloves against mechanical hazards";

- LST EN 405:2002+A1:2009 "Respiratory protective equipment. Valves with filter valves for protection against gas or gas and particles. Requirements, testing, marking";

- LST EN 407 "Protective gloves against thermal hazards (heat and / or fire)";

- LST EN 420 "Protective gloves. General requirements and testing methods".;

- LST EN 469 "Protective clothing for firefighters. Performance requirements for firefighting protective clothing";

- LST EN ISO 13688 "Protective clothing. General requirements (ISO 13688: 2013)";

- LST EN 14387 "Respiratory protective devices. Gas filters and composite filters. Requirements, testing, marking";

- LST EN ISO 16321-1 „Eye and face protection equipment for work". Part 1. General requirements (ISO 16321-1:2021)";

- LST EN ISO 16321-3 „Eye and face protection equipment for work". Part 3. Additional requirements for mesh guards (ISO 16321-3:2021)";

- LST EN ISO 20345 „Personal protective equipment. Safe footwear (ISO 20345: 2011)";

- LST EN ISO 21420 „Protective gloves. General requirements and test methods".

Additional information on the relevant Community provisions on safety, health and the environment for the product:
- The product may be sold only to a natural or legal person who has a license issued in accordance with the procedure established by the Law on the Control of Circulation of Explosives of the Republic of Lithuania or a written consent to carry out the activity licensed in the Republic of Lithuania.

The product is subject to the requirements of Directive 2014/28/EC. According to it, the user of the product must have the necessary license and permits to transport and use the product.

- The product is a dangerous substance, which is subject to the Government of the Republic Regulation No. 18.08.2004. 966 "On the Approval of the Description and List of Criteria for the List of Substances, Mixtures or Preparations Substances of Hazardous Substances in Hazardous Substances" (Official Gazette, 2004, No. 130-4649) with all subsequent amendments and supplements And listed in Part 2 of Annex I to Directive 2012/18/EU.

- The ammonia contained in the product (product contains not more than 0.5 %) is a toxic substance according to the Law of the Republic of Lithuania on the Supervision of Toxic Substances.

Restrictions on the product as regards Regulation (EU) No. 2019/1148: The acquisition, importation, holding 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 center. See https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en.

15.2 Chemical safety assessment

In accordance with Regulation No. 1907/2006 (REACH) Article 14, a Chemical Safety Assessment has been carried out for this substance. See Annex of this SDS.

SECTION 16. OTHER INFORMATION

Revision date: 2026.02.28
Version: 13.0
Revision No. 0
Issuing date: 2026.02.28

(i) A clear evidence of added, deleted or modified information:
The following changes were made to the safety data sheet as compared to the previous version:
- Headline of SDS: revision date, version number and issuing date of this safety data sheet has been changed;
- sub-section 1.3: Company's address has been changed;
- section 16: Revision date, version number and issuing date of this safety data sheet has been changed.

(ii) List of abbreviations and acronyms used throughout the Safety Data Sheet:
ATE – acute toxicity estimate;
ADR – European Agreement on Dangerous Goods by Road;
C&L – classification and labelling;
CLP – Classification, Labeling and Packaging Regulation; Regulation (EC) No 1272/2008;
CAS – Chemical Abstracts Service;
CSR – Chemical Safety Report;
DNEL – Derived No-Effect value;
EC – European Commission;
EN – European norm;
EU – European Union;
ECHA – European Chemicals Agency;
EC No. – EINECS ir ELINCS numbers;
EINECS – European List of Existing Commercial Chemical Substances;
ELINCS – European Register of Substances;
Eye Irrit. 2 – eye irritating 2 category;
GHS – Globally Harmonised System;
HS – Hygiene Standard;
IBC Code – International Code for the Construction and Equipment of Ships Carrying Bulk Hazardous Substances;
IMDG – International Maritime Organisation;
ĮST – Company Standard;
IMSBC – International Bulk Cargo Code;
IUCLID – International Database of General Information on Chemicals;
IUPAC – International Union of Pure and Applied Chemistry;
UN – United Nations;
Kow – octanol-water partition coefficient;
LC50 – Lethal concentration of 50% of tested population;
LD50 – Lethal dose for 50% of tested population;
LR – primary registrar;
LT – Lithuanian;
MARPOL 73/78 – International Convention for the Prevention of Pollution from Ships;
OJ – Official Journal;
Oxid. Solid 3 – oxidizing solids, 3 category;
Oxid. Liquids 3 – oxidizing liquids, 3 category;
PBT – Persistent, Bioaccumulative, Toxic;
PEC – predicted environmental concentration;
PNEC(s) – Forecast(-s) no effect(-s) concentration(-s);

PPE – personal protection equipment;
REACH Regulation – Registration, Evaluation, Authorisation and Restriction of Chemicals (EC) No 1907/2006;
RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail;
RV – limit value in the working environment;
RVP – risk management measures;
SCBA – self-contained breathing apparatus;
SDS – Safety Data Sheet;
SIEF – Substance Information Exchange Forum;
STOT – specific target organ toxicity;
(STOT) RE – repeated exposure;
(STOT) SE – single exposure;
SVHC – substance of very high concern;
(Q)SAR – (quantitative) structure-activity relationship;
vPvB – very Persistent, very Bio accumulative.

Explanation of the utilization sector (SU):
SU3 – Industrial use: the use of materials as such or in mixtures.
SU8 – Production of bulk, high-volume chemicals (including petroleum products).
SU9 – Production of small chemicals.
SU10 – Composition (mixing) and repackaging (except alloy) of items.

Product category (PC) explanation:
PC1 – Glues, sealants.
PC11 – Explosives.
PC12 – Fertilizer.
PC19 – Intermediate.
PC37 – Water treatment chemicals.

(iii) Bibliography:

1) Registration of Ammonium Nitrate under the REACH dossier, published on the website of the European Chemicals Agency;
3) ECHA Guidance on information requirements and chemical safety assessment. Part B: Hazard Assessment (2011) (Guidance on Information Requirements and Chemical Safety Assessment, Part B);
4) ECHA Guidance on information requirements and chemical safety assessment. Section R.10. (2011) (Guidance on information requirements and chemical safety assessment, Chapter R.10);
5) The Merck Index (12th ed.).
6) http://gestis-en.itrust.de/nxt/gateway.dll?f=templates&fn=default.htm&vid=gestiseng:sdbeng

(iv) Applicable classification and procedures used to determine the classification of mixtures in accordance with Regulation (EC) No. 1272/2008 [CLP Regulation]:

Classification in accordance with Regulation (EC) No. 1272/2008	Classification procedure
Eye irritation, cat. 2, H319	The product has been classified following assessment by the manufacturer in accordance with Regulation (EC) No 1272/2008 criteria for the classification of each hazard class or differentiation referred to in Parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008 in order to identify the hazards of the mixture. The product was classified as eye irritation, category 2, because its ammonium nitrate content exceeds the general concentration limit for category 2 as laid down in Regulation (EC) No 1272/2008, Annex I, Table

	3.3.3, and equals 10 %.
Oxid. Solid 3, H272; Eye Irrit. 2, H319.	The product is classified in the same way as pure ammonium nitrate. Based on the classification of ammonium nitrate in the REACH dossier for classification of pure ammonium nitrate and specific concentration limits (see 3.2 of this SDS).

(v) Relevant precautionary statements:
H221 – Flammable gas.
H272 – May intensify fire; oxidizer.
H314 – Causes severe skin burns and eye damage.
H319 – Causes serious eye irritation.
H331 – Toxic if inhaled.
H335 – May cause respiratory irritation.
H360 – May damage fertility or the unborn child.
H361 – Suspected of damaging fertility or the unborn child.
H362 – May cause harm to breast-fed children.
H372 – Causes damage to organs through prolonged or repeated exposure *exposure cause the hazard>*.
H373 – May cause damage to organs through prolonged or repeated exposure *exposure cause the hazard>*.
H400 – Very toxic to aquatic life.
H411 – Toxic to aquatic life with long lasting effects.
H412 – Harmful to aquatic life with long lasting effects.
EUH071 – Corrosive to the respiratory tract.
P210 – Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220 – Keep/Store away from clothing/reducing agents/acids/alkali/sulphur/chlorates/chlorides/ nitrates/permanganates/powder of metals and materials containing metals as follows: copper, nickel, cobalt, zinc and their alloys/combustible materials.
P221 – Take any precaution to avoid mixing with combustibles, reducing agents, acids, alkali, sulphur, chlorates, chlorides, nitrates, permanganates, powder of metals and materials containing metals as follows: copper, nickel, cobalt, zinc and their alloys.
P370+P378 – In case of fire: Use water for extinction.
P264 – Wash hands thoroughly after handling.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(vi) Training Advice:
To ensure the protection of people and the environment, people who manufacture, handle and use this product must be trained to work with hazardous substances, hazardous materials, nitrogen fertilizers with sulphur properties, have adequate hygiene skills, first aid principles and information on emergency procedures. This safety data sheet must be made available to those working with the product. Persons must be instructed before working with the product. Personnel involved in the sale of a product shall be made aware that the product is a precursor to a restricted use in accordance with Regulation (EU) No. 2019/1148 and shall have been instructed in relation to the obligations imposed in accordance with Articles 5 to 9 of this Regulation.

NOTE. The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.

Release info: This version replaces all previous documents.

ANNEX

Exposure scenarios:

1 **Manufacturing of the substance including handling, storage and quality controls;**
2 **Industrial use for formulation of preparations/articles, intermediate use and end-use in industrial settings;**

1 Exposure scenario (1) **Manufacturing of the substance including handling, storage and quality controls**	
Use descriptors related to the life cycle stage	SU8/9 PROC1/2/3/8a/8b/9/14/15 ERC1
Name of contributing environmental scenario (1) and corresponding ERC	1. Manufacturing of substances (ERC1)
List of names of contributing worker scenarios (2) and corresponding PROC	1. Use in closed process, no likelihood of exposure (PROC1) 2. Manufacturing in a closed continuous process, with occasional exposure (PROC2) 3. Use in closed batch process (synthesis or formulation) (PROC3) 4. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a) 5. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b) 6. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9) 7. Production of preparations* or articles by tabletting, compression, extrusion, pelletisation (PROC14) 8. Use as laboratory reagent (PROC15)
2.1 Contributing scenario (1) controlling environmental exposure	
Environmental release during manufacturing ERC1 An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.	
2.2 Contributing scenario (2) controlling worker exposure for manufacturing of the substance including handling, storage and quality controls	
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. PROC1/2/3/8a/8b/9/14/15	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Liquid
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for	Not applicable.

assessment of worker's exposure	
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	More than 4 hours per day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	Not applicable
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	1. Containment as appropriate 2. Good standard of general ventilation
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).	Not applicable
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	1. Chemical goggles
3 Exposure information and reference to its source	
Information for contributing scenario 1	
An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.	
Information for contributing scenario 2	
A qualitative approach was used to conclude safe use for workers. The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. As minimal systemic effects were only noted at such high levels of substance that humans are normally not exposed to (see DNELs), a quantitative assessment is not considered necessary.	
4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers.	
5 Additional good practice advice beyond the REACH CSA	

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets. Such as: - Containment as appropriate; - Minimise number of staff exposed; - Segregation of the emitting process; - Effective contaminant extraction; - Good standard of general ventilation; - Minimisation of manual phases; - Avoidance of contact with contaminated tools and objects; - Regular cleaning of equipment and work area; - Management/supervision in place to check that RMMs in place are being used correctly and OCs followed; - Training staff on good practice; - Good standard of personal hygiene.

1 Exposure scenario (2) **Industrial use for formulation of preparations/articles, intermediate use and end-use in industrial settings.**	
Use descriptors related to the life cycle stage	SU3/10 PC1/11/12/19/37 PROC1/2/3/5/8a/8b/9/13/15 ERC2/6a
Name of contributing environmental scenario (1) and corresponding ERC	1. Formulation of preparations (ERC2) 2. Industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a)
List of names of contributing worker scenarios (2) and corresponding PROC	1. Use in closed process, no likelihood of exposure (PROC1) 2. Use in closed, continuous process with occasional controlled exposure (PROC2) 3. Use in closed batch process (synthesis or formulation) (PROC3) 4. Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC5) 5. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC8a) 6. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b) 7. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9) 8. Treatment of articles by dipping and pouring (PROC13) 9. Use as laboratory reagent (PROC15)

2.1 Contributing scenario (1) controlling environmental exposure
Formulation of preparations (ERC2) and industrial use resulting in manufacture of another substance (use of intermediates) (ERC6a) An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.
2.2 Contributing scenario (2) controlling worker exposure for industrial use for formulation of preparations/articles, intermediate use and end-use in industrial settings.
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk

Management Measures (RMMs) are identical. PROC1/2/3/5/8a/8b/9/13/15	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Liquid
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	More than 4 hours per day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	Not applicable
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	1. Containment as appropriate 2. Good standard of general ventilation
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).	Not applicable
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if	1. Chemical goggles

relevant)	

3 Exposure information and reference to its source

Information for contributing scenario 1

An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.

Information for contributing scenario 2

A qualitative approach was used to conclude safe use for workers.

The leading toxicological effect is eye irritation (local endpoint), for which no DNEL can be derived as no dose-response information is available. As minimal systemic effects were only noted at such high levels of substance that humans are normally not exposed to (see DNELs), a quantitative assessment is not considered necessary.

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

No additional risk management measures, besides those that are mentioned above, are needed to guarantee safe use for workers.

5 Additional good practice advice beyond the REACH CSA

Additional good practices (Operational Conditions and Risk Management Measures) beyond the REACH Chemical Safety Assessment established within Chemical Industry are also advised and communicated through Safety Data Sheets. Such as:

- Containment as appropriate;
- Minimise number of staff exposed;
- Segregation of the emitting process;
- Effective contaminant extraction;
- Good standard of general ventilation;
- Minimisation of manual phases;
- Avoidance of contact with contaminated tools and objects;
- Regular cleaning of equipment and work area;
- Management/supervision in place to check that RMMs in place are being used correctly and OCs followed;
- Training staff on good practice;
- Good standard of personal hygiene;

The End of Safety Data Sheet.