


SAFETY DATA SHEET Compliant with Regulation (EC) No 1907/2006 AMMONIUM NITRATE		
Distribution date	Revision date	Version number
2010-12-01	2020-07-15	6.0


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


1.1 Product identifier	
Trade name:	Ammonium nitrate
1.2 Relevant identified uses of the substance or mixture and uses advised against.	
Identified uses:	Exposure scenario 1: industrial uses Exposure scenario 2: professional uses
Use advised against:	None
1.3 Details of the safety data sheet supplier.	
Manufacturer:	ANWIL S.A. ul. Toruńska 222, 87-805 Włocławek, Poland 0048 (24) 202 13-62 Sales Department (07 ⁰⁰ a.m. – 03 ⁰⁰ p.m.) on working days 0048 (24) 202 13 60 Sales Department Manager (07 ⁰⁰ a.m. – 03 ⁰⁰ p.m.) on working days Email address for commercial contact: nawozy@anwil.pl Contact address for remarks to the content of this sheet: reach@anwil.pl
1.4 Emergency telephone number	
Emergency:	Dispatcher of ANWIL (24 h): tel.: (54) 414 60 60 or (24) 202 17 17 In Poland: tel.: 998 or 112 (using a mobile phone)

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the mixture	
2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)	
Category code and class of hazard:	Ox. Sol. 3 Eye Irrit. 2
H phrases indicating the type of hazard	H272 H319
Additional codes of phrases indicating the type of hazard:	None

Remarks: None

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2.1.2 Explanations of H phrases in section 16.	
2.2 Label elements	
Marking according to Regulation (EC) No 1272/2008 (CLP)	
Pictogram(s):	
Hazard statement	NOTE
Phrases indicating the type of hazard	H272 H319
Additional codes of phrases indicating the type of hazard:	None
Safety use recommendations:	Prevention
	P210 Keep far away from heat sources, hot surfaces, sources of sparking, naked flame and other ignition sources. Do not smoke. P220 Keep/Store far away from clothing, flammable materials. P264 Wash hands thoroughly after handling. P280 Wear protective gloves, protective clothing, eye protection, face protection.
	Reaction:
	P370+P378 In the case of fire: use water for extinguishing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for a few minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Storage: -
2.3 Other hazards	Removal: See section 13

Other hazards:

The mixture does not meet the PBT and vPvB criteria contained in Annex XIII to REACH Regulation 1907/2006. Ammonium nitrate is a strong oxidant. As a source

**of oxygen
it sustains burning.**

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Ammonium nitrate is labile, while heating it decomposes from the starting temperature 210°C with generation of heat and toxic gases: NO_x, NH₃. Bismuth, cadmium, copper, molybdenum, lead, nickel, zinc are reducing the melted ammonium nitrate forming ammonium nitrite - a labile compound increasing the risk of explosion. Contaminated ammonium nitrate may lead to an explosion in extreme cases. Small amounts of the following are dangerous: mercury, chromates, permanganates, sulphides, chlorides. An additive of free ammonia increases the decomposition temperature by 50-60°C.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture

Composition of the mixture:

Main ingredient	concentration	CAS/EC No	Registration number	Classification in accordance with Regulation (EC) No 1272/2008	
				Category code and class of hazard:	H phrases indicating the type of hazard
Ammonium nitrate	95.4 - 98.9 %	6484-52-2/229-347-8	01-2119490981-27-0033	Ox. Sol. 3 Eye Irrit. 2	H272 H319

Explanations of H phrases in section 16


SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact:	Rinse with a large amount of water with an eyelid wide open for the period of at least 15 minutes, contact an eye-specialist.
Skin contact:	In case of skin contamination, in particular with hot solution, wash off with a large amount of water, next take off contaminated clothes, rinse again, pouring with the solution leads to thermal and chemical skin scalds due to pH of the solution, ensure medical help.
Swallowing:	If swallowed, rinse mouth, a conscious person should be provided with a large amount of water to

drink, immediately call the doctor.

Contact with respiratory	In the event of poisoning, which took place by inhalation of aerosols, when the injured person coughs and has a sore throat,
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track.	ensure flow of fresh air, rest, if necessary give artificial respiration, ensure medical help.	
Workplace:	In a workplace, use general and local ventilation. Workplaces must be equipped with a shower and eye washers.	
4.2 Most important symptoms and effects, both acute and delayed as well as effects of exposure:		
Symptoms of acute poisoning occur after 15-30 minutes and are characterized by stomach-aches, dizziness, cyanosis (blue blood colour), dyspnoea, fall of blood arterial pressure and collapse. Blood may occur in vomit, bowels and urine. Paralysis of peripheral blood vessels and related fall of blood pressure are characteristic symptoms, which in the case of people with developed arteriosclerosis may give rise to irreversible collapse. Children are particularly sensitive to poisoning.		
4.3 Indication of any immediate medical attention and special treatment needed		
No data available		
SECTION 5: FIREFIGHTING MEASURES		
Ammonium saltpetre is a granulated mixture of ammonium nitrate which is its main ingredient. A non-flammable product but it may contribute to increased flammability of other materials. After heating and difficult exchange of heat with environs, decomposition with generation of thermal energy may take place. Inform people around about fire, evacuate all people who do not take part in a rescue and extinguishing action from the area at risk, alarm the Company Rescue Service, Emergency Call Centre [CPR] (phone number: 112), State Fire Service (in Poland, phone number: 998) or Police (in Poland, phone number: 997).		
5.1 Extinguishing media:		
Water used in a large amount is the sole effective extinguishing medium. Water performs the role of a cooling and dissolving medium here. A fire-fighting action must be carried out from a long distance, use unmanned water cannons. Do not use: CO ₂ , extinguishing foam, extinguishing powders due to low effectiveness.		
In the case of fire of environs, it is allowed to use all extinguishing media 5.2		
Special hazards arising from the substance or mixture.		
When heated, the mixture melts, and long-lasting heating leads to its decomposition.		
Decomposition takes place at the temperature above 210 ⁰ C, at the temperature above 450 ⁰ C decomposition may be accompanied by a strong explosion. When decomposition takes place in confined spaces, there is a high risk of explosion.		

**In the case of fire, dangerous vapours of ammonia, nitrogen oxides are generated
- avoid inhalation of vapours**

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5.3 Advice for firefighters.

Remove bags, tanks and containers from the region of fire if this does not pose a hazard to rescuers. Terrain of fire should be flooded with water from a long distance or use maintenance-free cannons, if impossible, retreat to a safe distance and allow the substance to burn out. Do not stay in the zone of hazard without appropriate gasproof clothes protecting against chemicals and without a bottle air apparatus with compressed air.

Personal protective equipment for fire-fighters: use gasproof clothes and an individual breathing apparatus. Do not allow water to reach surface water or ground water after extinguishing fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Inform people around about failure.

Remove all people who do not take part in liquidation of the failure from the surrounding area, if necessary, order evacuation, call the Emergency Call Centre [CPR] (phone number: 112), State Fire Service (in Poland, phone number: 998) or Police (in Poland, phone number: 997).

6.1 Personal precautions, protective equipment and emergency procedures

In contact with the product, use acidproof protective clothes, safety gloves resistant to chemicals, use protective goggles, in the case of dusting - protect the respiratory track.

Within ad hoc precautions, it is necessary to isolate the spillage area within the radius of minimum 25 m, stay on the windward side from the place of failure.

6.2 Environmental precautions:

Prevent contamination of ground water, sewage and soil. Do not wash off to drainage wells.

6.3 Methods and materials for containment and cleaning up:

Carefully collect dry to properly prepared non-flammable, dry tanks and containers, hand-over for utilization.

6.4 References to other sections:

Rules on handling post-reaction waste in accordance with those specified in section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

**Preventing fires and explosions: Ensure an effective exchange of air (ventilation).
Use personal protective equipment. Do not allow contact with flammable substances.**

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Avoid contact with reducing substances.

Packaging materials: polythene bags, laid on pallets and polypropylene big-bags with polythene refill.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

<https://www.anwil.pl/PL/NaszaOferta/NawozyAzotowe/Strony/Strefa-Dystrybutora.aspx>

Due to low resistance of nitrogen fertilizers to direct impact of weather conditions, in particular to solar radiation, precipitation and changes of temperature, fertilizers should not be stored under shelters, on open storage sites, on open storage sites under canvass hoods or other temporary protections.

In the case of storing nitrogen fertilizers with other materials which are not fertilizers and which are flammable and chemically reactive, it is necessary to take special care. Flammable liquids such as: petrol, fuel oil and other oils and lubricants are examples of the aforementioned substances. Caustic liquids, acids and other reactive substances, such as: chlorides, hypochlorites, chlorinated organic compounds, bleaches, chromates, nitrates, copper and zinc salts, permanganates. Flammable liquid and solid products, such as: sulphur, powdered metals and substances of organic origin, such as: hay, straw, sawdust, crops and animal fodders.

Nitrogen fertilizers should be stored far from any sources of heat, e.g. heating installations, collectors with steam or hot water as well as electric network which emits heat.

Storage of fertilizers at a temperature below 30°C and air humidity: maximum up to 60% is a warranty of maintenance of high quality of fertilizers, with preservation of their performance properties (looseness).

Do not store saltpetre in quantities larger than 300 tons in one room.

Substance SEVESO: YES

Threshold quantities of the substance which decide about classification of the plant to:

- a plant with an increased risk of serious industrial failure: 1250 [Mg]
- a plant with a high risk of a serious industrial failure: 5000 [Mg]

7.3. Special final recommendations

Exposure scenario 1: industrial uses

Exposure scenario 2: professional uses

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SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

The Threshold Limit Value (TLV) was not specified in the workplace for the main ingredient of ammonium nitrate.

Chemical name	CAS No	TLV	TLV-STEL	TLV-CL
Ammonium nitrate	6484-52-2	Not specified	Not specified	Not specified

(*) Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the maximum permissible concentration and intensity of factors harmful to health in the working environment (OJ 2018 item 1286).

Assessment of hazards to human health DNEL (for the main ingredient of mixture: ammonium nitrate).

Route of exposure	Employees				Society			
	Acute, local	Acute general-system	Chronic local	Chronic general-system	Acute, local	Acute general-system	Chronic local	Chronic general-system
Skin	---	---	---	21.3 mg/kg mc.	---	---	---	12.8 mg/kg mc.
Inhalation	---	---	---	37.6 mg/m ³	---	---	---	11.1 mg/m ³
Alimentary	---	---	---	---	---	---	---	12.8 mg/kg mc.

Characteristics of the environmental risk (for the main ingredient of mixture: ammonium nitrate):

Characteristics of the environmental risk PNEC	Value	Unit
For fresh water ecosystem	0.45	mg/l
For fresh water sediment ecosystem	---	---
For sea water ecosystem	0.045	mg/l
For sea water sediment ecosystem	---	---
For ecosystem in the case of periodic release	4.5	mg/l
For microorganisms in sewage treatment plants	18	mg/l
For predators of the highest order	---	---
For ecosystem in soil	---	---
For ecosystem in air	---	---

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8.2 Exposure control

Appropriate engineering controls:	Lack of requirements: use of an appropriate ventilation within good industrial practice. Additionally, within it, it is necessary to have devices for rinsing eyes and water safety curtains in warehouses or utilization facilities
Individual protection measures, such as individual protection equipment	
Respiratory track protection:	Anti-dust half masks which meet requirements of EN 149
Hand protection:	Working gloves
Eye protection:	Tight safety glasses of goggle type or face protection which meet requirements of EN 166
Skin and body protection:	Protective clothes

Note:

Wash hands to forearms after contact with chemical products after each end of work. Relevant procedures should be carried out with reference to dirty clothes - washing before re-use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Solid body, granules, white to beige colour
Odour:	Without odour or odour of ammonia
pH	4.5 (ammonium nitrate)
Odour threshold:	No data available
Melting Point/Solidification Point	169.6°C (ammonium nitrate in normal pressure)
Initial boiling point and scope of boiling points	Not applicable
Flash point:	Not applicable
Evaporation rate:	No data available
Flammability:	Non-combustible
Upper/Lower flammability limits or Upper/Lower explosion limits:	No data available
Vapour pressure:	Not applicable
Relative density:	1.72g/cm ³

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Solubility:	It dissolves very well in water >100g/l (ammonium nitrate)
N-octanol/water partition coefficient:	Not applicable
Auto-ignition temperature:	Not applicable
Decomposition temperature:	210°C
Viscosity:	Not applicable (solid body)
Explosive properties:	Not applicable
Oxidising properties:	Oxidizable

9.2 Other information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

The main ingredient is a strong oxidant and reacts with flammable and reducing materials. Water solutions are weak acids. Over temp. 210°C it decomposes and toxic gases are generated - nitric oxides.

10.2 Chemical stability

A stable product in recommended storage and handling conditions (see section 7)

10.3 Possibility of hazardous reactions.

When heated over 210°C, it decomposes, thereby increasing the risk of explosion.

10.4 Conditions to avoid.

Temperatures over 210°C, naked flame, contact with organic materials and exposure to weather conditions (in particular insolation). It decomposes after heating. It is necessary to avoid tight closure.

10.5 Incompatible materials.

Materials to avoid: metals in the form of powder, steel, non-metals, alkaline metals, flammable substances, carbides, nitrites, lyes, acids, ammonium compounds, oxidizing factors, chlorates, aluminium in the form of powder, nitro organic compounds, sulphides, acid salts. Some metals, such as: Bi, Cd, Cu, Mo, Pb, Ni, Zn exert an influence on melted ammonium nitrate and as a result of reducing effect they lead to formation of ammonium nitrite NH_4NO_2 , a labile compound which considerably increases the risk of explosion.

10.6 Hazardous decomposition products.

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Ammonia NH₃ and nitric oxides NO_x

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Toxokinesis, metabolism, penetration.

Ammonium nitrate is well soluble in water dissociating into ions: NH₄⁺ and NO₃⁻. Both molar mass and well solubility increase absorption through skin, inhalation and oral absorption. There are no tests of absorption of the main ingredient of the mixture, however for toxicological modelling the extent of absorption through all the foregoing routes was assumed at the level of approx. 50%.

11.1.1 Acute toxicity during oral use:

Test of acute toxicity during oral use in accordance with OECD 401 methodology

Tested substance: ammonium nitrate

Animals: rats

Estimated dose: LD₅₀ = 2950mg/kg mc.

Conclusion: it does not meet the acute toxicity criteria during oral use.

11.1.2 Acute toxicity in contact with skin:

Test of acute toxicity during oral use in accordance with OECD 402 methodology

Tested substance: ammonium nitrate

Animals: rats

Estimated dose: LD₅₀ = 5000 mg/kg mc.

Conclusion: it does not meet the acute toxicity criteria in

contact with skin 11.1.3 Acute toxicity through inhalation:

Not applicable.

11.1.4 Skin caustic/irritating effect:

Tests of skin caustic/irritating effect (in accordance with OECD 404 methodology)

Tested substance: ammonium nitrate

Animals: rabbits

Observation time: 72h

Result of the test based on clinical observation: lack of skin irritating effect.

11.1.5 Eye irritating/caustic effect:

Tests of eye irritating effect (in accordance with OECD 405 methodology)

Tested substance: ammonium nitrate

Animals: rabbits

Observation time: 7-10 days

Result of the test based on clinical observation: eye irritating effect has been identified.

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11.1.6 Respiratory track irritating/caustic effect.

It does not meet the relevant criteria.

11.1.7 Skin allergen:

No data available. For estimation of skin allergen effect of ammonium nitrate, tests of substance with a similar structure were used: sodium nitrate, nitric acid and calcium nitrate. None of the foregoing substances showed the skin allergen effect.

11.1.8 Respiratory track allergen effect:

It does not meet the relevant criteria.

11.1.9 Germ cell mutagenicity:

No data available. For estimation of the risk of mutagenic effect, tests of substances with a similar structure were used: nitric acid; calcium nitrate salt and potassium nitrate. None of the foregoing substances showed the mutagenic effect.

Conclusion: The main ingredient of the mixture: ammonium nitrate does not have the mutagenic effect.

11.1.10 Carcinogenic effect:

Not applicable: ammonium nitrate (the main ingredient of the mixture) has been classified as such which does not have the mutagenic effect, which in accordance with Annex X to REACH Regulation provides a possibility not to conduct tests of carcinogenicity of the substance.

11.1.11 Reproductive toxicity:

11.1.11.1 Test of an impact on fertility:

No data available. For estimation of the risk of an impact on fertility, tests of substances with a similar structure were used (oral exposure route): potassium nitrate, ammonium sulphate. None of the foregoing substances showed an impact on fertility.

Conclusion: The main ingredient of the mixture: ammonium nitrate does not have a negative effect on fertility.


11.1.11.2 Test of an impact on embryo

No data available. For estimation of the risk of an impact on embryo, tests of substances with a similar structure were used (oral exposure route): potassium nitrate, ammonium sulphate. None of the foregoing substances showed an impact on fertility.

Conclusion: The main ingredient of the mixture: ammonium nitrate does not have a negative effect on embryo.

11.1.12 Specific Target Organ Toxicity - Single Exposure:

No data available

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11.1.13 Specific target organ toxicity - Repeated exposure:

No data available

11.1.14 Aspiration hazard:

No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

12.1.1 Acute toxicity for fish:

Tested substance: ammonium nitrate (the main ingredient of the mixture)
Species: Cyprinus carpio
Exposure time: 48h
Based on observations, the following value was estimated: LC₅₀ = 447 mg/L.

12.1.2 Acute toxicity for invertebrates:

Tested substance: potassium nitrate (substance with a similar structure)
Species: Daphnia magna
Exposure time: 48h
Based on observations, the following value was estimated: LC₅₀ = 490 mg/L

12.1.3 Toxicity to algae:

No data available. For estimation of toxicity to algae (increased inhibition of algae population), tests of a substance with a structure similar to ammonium nitrate were used: potassium nitrate.
Conclusion of the tests: the substance does not have an inhibition effect or has a very weak inhibition effect on population of algae.

12.1.4 Chronic toxicity to fish.

Not applicable: it has been proven that ammonium nitrate has a very weak toxic effect on fish (test of acute toxicity). Therefore, it is not necessary to carry out tests of chronic toxicity to fish.

12.1.5 Chronic toxicity to invertebrates.

Not applicable: it has been proven that potassium nitrate has a very weak toxic effect on aquatic invertebrates (test of acute toxicity). Therefore, it is not necessary to carry out tests of chronic toxicity to aquatic invertebrates.

12.1.6 Summary

Based on the available tests of ammonium nitrate or substances with a similar structure and chemical properties, a toxic effect on aquatic organisms is not identified.

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12.2 Persistence and degradability

12.2.1 Abiotic decomposition:

12.2.1.1 Hydrolysis: not applicable: ammonium nitrate dissociates in water into ions NH_4^+ and NO_3^-

12.2.1.2 Photolysis: no data available

12.3 Bioaccumulative potential:

12.3.1 Bioaccumulative in aquatic environment: does not meet the criteria

12.3.2 Bioaccumulative in soil: does not meet the criteria

12.4 Mobility in soil:

Not applicable

12.5 Results of properties assessment of PBT and vPvB:

It does not meet the PBT and vPvB criteria

12.6 Other adverse effects:

A local hazard limited to the contamination place with consequences arising from getting into ground waters (this mainly refers to ammonium nitrate in a water solution). Waters contaminated with ammonium nitrate are unfit to drink. Waters contaminated with ammonium nitrate, due to corrosive effect of solution, are characterized by reduced fitness for technical purposes.

After dilution and longer period of time, biological destruction of ammonium nitrate takes place - absorption by plants as a fertilizer.

Section 13. DISPOSAL CONSIDERATIONS


13.1 Waste treatment methods

13.1.1 Product/packaging neutralization

If the mixture is spilled, it is necessary to carefully collect the product to closed packages/containers. If the product has not lost its technical properties, use it again as a product.

If the product is contaminated with other substances, spillage (waste with code 16 07 09*) must be collected to packages, durably marked and next it must be stored in a place designated for this purpose on the premises of the plant / facility, it must be neutralized or subjected to recycling in own facilities based on held permits or it must be handed over directly to an authorized waste recipient to be neutralized or recycled.

Packaging waste (waste code 15 01 02) may also be formed from the waste management process.

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13.1.2 Waste processing - significant information:

The waste should be selectively stored to accumulate an appropriate amount in a storage place designated for this purpose, it must undergo neutralization or recycling in own facilities based on held permits or it must be handed over directly to an authorized waste recipient to be neutralized or recycled.

13.1.3 Discharge of sewage – significant information:

Do not allow sewage to reach soil, surface water or ground water.

13.1.4 Other recommendations on neutralization of waste:

No data available

SECTION 14: TRANSPORT INFORMATION

14.1	UN number:	UN 2067
14.2	Proper shipping name UN:	FERTILIZER BASED ON AMMONIUM NITRATE
14.3	Transport hazard class:	5.1
14.4	Packing group:	III (E)
14.5	Environmental hazards:	Not classified
14.6	Special precautions for users:	Avoid high temperatures Use naked flame. Avoid exposure to weather conditions. https://www.anwil.pl/PL/NaszaOferta/NawozyAzotowe/Stroyny/Strefa-Dystrybutora.aspx
14.7	Transport in bulk in accordance with Annex II to the MARPOL convention and the IBC code	Not applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental protection legal provisions, specific for the substance and mixture.
 Act of 25 February 2011 on chemical substances and mixtures thereof (OJ No 63, item 322), as amended.

European Parliament and Council (EC) Regulation No 1907/2006 of 18 December 2006 on the Registration, Evaluation, Authorisation and Restriction of

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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, as amended.

Regulation of the European Parliament and of the Council (EC) No 1272/2008 of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006, as amended.

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the registration, evaluation, authorization and restriction of chemicals (REACH), as amended.

Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the maximum permissible concentration and intensity of factors harmful to health in the working environment

Act of 27 April 2001 – Environmental Protection Law (consolidated text: OJ of 2016, item 672)

Act of 14 December 2012 on waste (OJ 2013 item 21, as amended).

Regulation of the Minister of the Environment of 9 December 2014 on the waste catalogue (OJ 2014 item 1923).

Act of 13 June 2013 on packaging and packaging waste management (OJ 2013 item 888).

Act on the transport of dangerous goods dated 19 August 2011 (OJ 2011, No 227, item 1367).

REGULATION OF THE MINISTER OF HEALTH of 25 August 2015 concerning the marking of places, pipelines, containers and tanks used for the storage of or containing potentially hazardous substances or mixtures.

Regulation of the Minister of Development of 29 January 2016 regarding the types and quantities of dangerous substances present at the plant which determine the classification of the plant as a plant with an increased risk or a plant with a high risk of occurrence of a serious industrial breakdown (OJ of 2016 item 138).

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

Act of 13 April 2016 on the safe trading in precursors of explosives.

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15.2 Chemical safety assessment.

No Chemical Safety Assessment for the mixture has been performed.

SECTION 16. OTHER INFORMATION

Information contained in this Sheet along with appendixes corresponds with our best knowledge as at the date of its preparation. The information contained in it must be treated only as guidelines with reference to the activities and processes forming the subject matter of individual sections of the Sheet, carried out exclusively in accordance with the stated conditions and in combination with specified materials.

The foregoing information is coherent with the CHEMICAL SAFETY REPORT drawn up for the main ingredient of the mixture: ammonium nitrate

The changes made in the current safety data sheet in relation to the previous version:

Section 1.3 Contact details of the safety data sheet supplier were changed.

Section 1.4 Telephone number to ANWIL's Dispatcher was updated.

Section 3.2 Composition of the mixture and concentration of ammonium nitrate were updated.

Section 4.1 Description of first aid measures in the case of swallowing was changed.

Section 6 CPR phone number 112 was added.

Section 7.2 Safe storage conditions were updated and link to the instruction for storage of fertilizer products was added.

Section 7.3 Exposure scenario 1: industrial use and exposure scenario 2: professional uses were added.

Section 8.1 Regulation of the Minister of Family, Labour and Social Policy on the maximum permissible concentration and intensity of factors harmful to health in the working environment was updated.

Section 8.2 Personal protective equipment for eyes, skin and body was changed.

Section 9.1 Boiling point was removed. The table was completed by initial boiling point and scope of boiling points. The following parameters were changed: melting/solidification point, solubility, viscosity.

Section 10.4 Decomposition conditions and storage recommendation were completed.

Section 10.6 Dangerous decomposition products were changed.

Section 14.6 Link to the transport instruction was added.

Section 15.1 Regulation of the Minister of Family, Labour and Social Policy on the maximum permissible concentration and intensity of factors harmful to health in the working environment was updated.

Explanation of H phrases

H272 May intensify fire; oxidizer.

H319 Causes eye irritation.

Explanation of abbreviations and acronyms used in the Safety Data Sheet Ox.Sol. 3 oxidising solid substance, category 3

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Eye Irrit. 2: eye irritating effect, category 2

TLV: Threshold Limit Value

TLV-STEL: Threshold Limit Value, Short Term Exposure Limit

TLV-CL: Threshold Limit Value - Ceiling

vPvB: Very Persistent, very Bioaccumulative (substance)

PBT: Persistent, Bioaccumulative and Toxic (substance)

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

NOAEL: No Observed Adverse Effects Level

LD₅₀: Empirical estimation of a dose causing death of 50% of specimen from tested population.

EC₅₀: concentration of a factor which generates a particular effect in a half of population

DNEL: Derived No-Effect Level

PNEC: Predicted No Effect Concentration

Additional information:

Classification and procedure used to classify the mixture in accordance with Regulation (EC) 1272/2008 [CLP]

Category code and class of hazard	H phrases indicating the type of hazard:	Classification procedure
Ox. Sol. 3	H272	Based on the results of tests
Eye Irrit. 2	H319	Based on the results of tests

The mixture's composition does not contain substances which are on the candidate list SVHC(*) in the amount higher than 0.1% of weight.

(*)Source: [http://www.anwil.pl/PL/REACH_CLP/Strony/Substancje-wzbudzajace-szczegolnie-duze-obawy-\(SVHC\).aspx](http://www.anwil.pl/PL/REACH_CLP/Strony/Substancje-wzbudzajace-szczegolnie-duze-obawy-(SVHC).aspx)

This version of the Safety Data Sheet replaces the version No 5.2 of 15 February 2020

END OF THE SAFETY DATA SHEET OF AMMONIUM NITRATE

EXPOSURE SCENARIO SN 1 AMMONIUM NITRATE



Distribution date	Revision date	Version number
01.12.2010	01.12.2011	2.0

1.0 Short title and number of Exposure Scenario	
Industrial uses of ammonium nitrate, the main ingredient of the mixture - SN 1	
1.1 Description of activities and processes covered by the Scenario	
Sector of use (SU)	SU10 Formulation (mixing) and/or repacking of preparations (excluding alloys)
Category of the process (PROC)	<p>PROC1 Use in a closed technological process, no probability of exposure</p> <p>PROC2 Use in a closed technological process with sporadic, controlled exposure</p> <p>PROC3 Use in a closed feedstock process (synthesis or generation)</p> <p>PROC5 Mixing in feedstock generation processes of preparations* or products (multi-stage and/or considerable contact</p> <p>PROC8a Transfer of substances or preparation (loading/unloading) to/from vessels/big containers in rooms not intended for this purpose</p> <p>PROC8b Transfer of substances or preparation (loading/unloading) to/from vessels/big containers in rooms intended for this purpose</p> <p>PROC9 Transfer of substances or preparation to small containers (by means of the filling line intended for this purpose along with weighing)</p> <p>PROC13 Treatment of industrial products by dipping or flooding</p> <p>PROC15 Using as laboratory reagents</p>
Product category (PC)	Not applicable
Article category (AC)	Not applicable
Category of release to the environment (ERC)	<p>ERC2 Generation (formulation) of preparations</p> <p>ERC6a Industrial use, as a result of which other substances are formed (using as an intermediate)</p>

This industrial use includes the use of ammonium nitrate as an intermediate for production of other substances as substances for generation of mixtures (explosives, adhesives, fertilizers, water treatment agents) and substances for production of goods. Part of these uses may also be referred to ammonium nitrate, in particular if the share of substances other than ammonium nitrate in the mixture does not have a larger influence on its properties.

2.0 Conditions of using substances causing the exposure - related exposure scenarios

The task of this Exposure Scenario (SN) is to provide the necessary minimum information to the manufacturer of the mixture with regard to operating conditions and risk control measures for the needs of safe use of the solid or liquid mixture by a further user. Both participants of the supply chain are obliged to mutually complete knowledge in this respect in order to improve this SN. A set of the operating conditions and risk control measures referring to the activities of an employee, related to the use of the substance, is referred to as the related scenario. A format of this Scenario is consistent with requirements of the European Chemicals Agency (ECHA), contained in part D of the Guide with reference to CSA/CSR issued in May 2010.

2.1 Related scenario (1) - environment exposure control

An assessment of an influence of the released substance on the environment, in the manner described in release categories ERC2, and ERC6A was not carried out because the substance (ammonium nitrate) does not meet the criteria of the substance that is dangerous to the environment

EXPOSURE SCENARIO SN 1 AMMONIUM NITRATE



Distribution date	Revision date	Version number
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2.2 Related scenario (2) - employee exposure control	All categories of the process
(PROC1/2/8a/8b/9/11/15/19) are covered by this related scenario because the operating conditions (OC) and risk control measures (RMM) for each category of the process are identical.	
Characteristics of the product	Section 9 of the Safety Data Sheet describes physical and chemical properties of the mixture in detail. The product in solid form, characterized by low dustiness, most often in the form of white granules. It has oxidizing properties; explosive properties neutralized by an additive of magnesium nitrate. Weight share of ammonium nitrate : > 99.0 %
Quantity used	Not applicable
Frequency / duration of use/exposure	Continuously :> 4h/shift; 220 days/year
Human factors without an influence on risk management	Good general state of health Other operating conditions having an influence on exposure of an employee Employees are adequately trained and informed about conditions for safe use of the mixture, mainly containing ammonium nitrate and know the rules on using personal protective equipment in conditions of normal conduct of the process and in the case of accidental release of the mixture in the working environment.
Conditions and technical measures at the level of the process, preventing the release	
Systems of transmission pipelines should be closed. In the case of processes carried out in devices located in closed rooms, it is necessary to support the natural ventilation with local forced ventilation installations characterized by adequate performance.	
Technical conditions for control of dispersion from the source towards an employee	
Not applicable	
Organizational measures which reduce / prevent the release from the place of use	
Well trained staff members within the scope of production equipment, fitted with personal protective equipment preventing the exposure (excessive dusting).	
Conditions and measures concerning personal protection, hygiene and health	
Regardless of the class of production devices, staff members may be exposed to contact with the mixture during operation of auxiliary equipment, in particular used for carriage or packaging&customizing. It is recommended to collect samples in closed loops with cutting off valves, and samplers must be sufficiently tight. In order to minimize the risk of exposure, personal protective equipment is used. In the case of spillage, it is necessary to wear dustproof clothing for intervention works and fresh air breathing apparatuses. Before repairs or maintenance works, production installations must be sufficiently cleaned to remove the mixture residue.	
3.0 Estimation of exposure and reference to its source	
Environmental exposure	
The assessment of an influence of the released substance / mixture on the environment, in the manner described in the release categories ERC2 and ERC6A was not carried out because the substance (ammonium nitrate), as the main ingredient of the mixture, does not meet the criteria of the substance that is dangerous to the environment. It is advisable to conduct a thorough analysis of section 13 of the Safety Data Sheet concerning the methods of management of packaging after the mixture, mixture waste and waste generated during breakdowns.	
Exposure of staff members	
The qualitative approach was the basis for determination of safe use of the substance by employees. Main toxicological effect - eye irritation, for which DNEL value cannot be determined because information concerning the dose-response relation is unavailable. Minimum effects of chronic exposure were <u>noted down only at very high levels of the substance content, people in normal conditions</u>	

EXPOSURE SCENARIO SN 1 AMMONIUM NITRATE



Distribution date	Revision date	Version number
01.12.2010	01.12.2011	2.0

of use of the substance are not at risk, thus the quantitative assessment is not required.

4.0 Guidelines for a further user to assess whether he works in accordance with the rules specified in this exposure scenario

A lack of additional guidelines for the risk control measures, apart from the ones described above, to guarantee safe use of the substance / mixture by an employee

Additional advice concerning the good industrial practice, regardless of the information arising from REACH and the Chemical Safety Assessment (CSA) for the main ingredient of the mixture

Based on the principles of the good industrial practice developed for the chemical industry, it is necessary to recommend and hand over the following suggestions with the use of the Safety Data Sheet:

- proceed in accordance with the procedures
 - minimize the number of staff members subject to exposure
 - reduction of emission processes
 - effective extraction of contaminants
 - efficient and effective general ventilation
 - minimization of manual operation stages
 - avoiding contact with contaminated tools and other objects
 - systematic cleaning of devices and cleaning of the workstation
 - management / local supervision to check whether the risk control measures are correctly used and whether the operating conditions are observed
 - training of crew in the good industrial practice
- good level of occupational health and safety amongst staff members

1.0 Short title and number of Exposure Scenario	
Professional end-uses of ammonium nitrate, the main ingredient of the mixture and in the formulation processes –SN2	
1.1 Description of activities and processes covered by the Scenario	
Sector of use (SU)	SU1 Agriculture, forestry, fishery SU4 Production of food articles SU10 Formulation (mixing) and/or repacking of preparations (excluding alloys)
Category of the process (PROC)	PROC1 Use in a closed technological process, no probability of exposure PROC2 Use in a closed technological process with sporadic, controlled exposure PROC8a Transfer of substances or preparation (loading/unloading) to/from vessels/big containers in rooms not intended for this purpose PROC8b Transfer of substances or preparation (loading/unloading) to/from vessels/big containers in rooms intended for this purpose PROC9 Transfer of substances or preparation to small containers (by means of the filling line intended for this purpose along with weighing) PROC11 Non-industrial dusting PROC15 Using as laboratory reagents PROC19 Manual mixing during which there is close contact with the substance. Only personal protective equipment is available.
Product category (PC)	Not applicable
Article category (AC)	Not applicable
Category of release to the environment (ERC)	ERC8b Widely dispersed use, in rooms, of substances reacting in open systems ERC8e Widely dispersed use, outside rooms, of substances reacting in open systems
This professional use includes the use of ammonium nitrate as a substance for production of mixtures (adhesives, fertilizers, water treatment agents) and substances for production of goods. Part of these uses may also be referred to ammonium nitrate, in particular if the share of substances other than ammonium nitrate in the mixture does not have a larger influence on its properties.	
2.0 Conditions of using substances causing the exposure - related exposure scenarios	
The task of this Exposure Scenario (SN) is to provide the necessary minimum information to the manufacturer of the mixture with regard to operating conditions and risk control measures for the needs of safe use of the solid or liquid mixture by a further user. Both participants of the supply chain are obliged to mutually complete knowledge in this respect in order to improve this SN. A set of the operating conditions and risk control measures referring to the activities of an employee, related to the use of the substance, is referred to as the related scenario. A format of this Scenario is consistent with requirements of the European Chemicals Agency (ECHA), contained in part D of the Guide with reference to CSA/CSR issued in May 2010.	
2.1 Related scenario (1) - environment exposure control	
The assessment of an influence of the released substance on the environment, in the manner described in the release categories ERC2 and ERC6A was not carried out because the substance (ammonium nitrate) does not meet the criteria of the substance that is dangerous to the environment.	
2.2 Related scenario (2) - employee exposure control	All categories of the process (PROC1/2/3/5/8a/8b/9/13/15) are covered by this related scenario because the operating conditions (OC) and risk control measures (RMM) for each category of the process are identical.
Characteristics of the product	Section 9 of the Safety Data Sheet describes physical and chemical properties of the mixture in detail.

<p>The product in solid form, characterized by low dustiness, most often in the form of white granules. It has oxidizing properties; explosive properties neutralized by an additive of magnesium nitrate. Weight share of ammonium nitrate : > 99.0 %</p>
<p>Quantity used</p>
<p>Not applicable</p>
<p>Frequency and duration of use/exposure</p>
<p>Continuously :> 4h/shift; 220 days/year</p>
<p>Human factors without an influence on risk management</p>
<p>Good general state of health</p>
<p>Other operating conditions having an influence on exposure of an employee Employees are adequately trained and informed about conditions for safe use of the mixture, mainly containing ammonium nitrate and know the rules on using personal protective equipment in conditions of normal conduct of the process and in the case of accidental release of the mixture in the working environment.</p>
<p>Conditions and technical measures at the level of the process, preventing the release Systems of transmission pipelines should be closed. In the case of processes carried out in devices located in closed rooms, it is necessary to support the natural ventilation with local forced ventilation installations characterized by adequate performance.</p>
<p>Technical conditions for control of dispersion from the source towards an employee</p>
<p>Not applicable</p>
<p>Organizational measures which reduce / prevent the release from the place of use Well trained staff members within the scope of production equipment, fitted with personal protective equipment</p>
<p>preventing the exposure (excessive dusting).</p>
<p>Conditions and measures concerning personal protection, hygiene and health Regardless of the class of production devices, staff members may be exposed to contact with the mixture during operation of auxiliary equipment, in particular used for carriage or packaging&customizing. It is recommended to collect samples in closed loops with cutting off valves, and samplers must be sufficiently tight. In order to minimize the risk of exposure, personal protective equipment is used. In the case of spillage, it is necessary to wear dustproof clothing for intervention works and fresh air breathing apparatuses. Before repairs or maintenance works, production installations must be sufficiently cleaned to remove the mixture residue.</p>
<p>3.0 Estimation of exposure and reference to its source</p>
<p>Environmental exposure The assessment of an influence of the released substance / mixture on the environment, in the manner described in the release categories ERC2 and ERC6A was not carried out because the substance (ammonium nitrate), as the main ingredient of the mixture, does not meet the criteria of the substance that is dangerous to the environment. It is advisable to conduct a thorough analysis of section 13 of the Safety Data Sheet concerning the methods of management of packaging after the mixture, mixture waste and waste generated during breakdowns.</p>
<p>Exposure of staff members The qualitative approach was the basis for determination of safe use of the substance by employees.</p>
<p>Main toxicological effect - eye irritation, for which DNEL value cannot be determined because information concerning the dose-response relation is unavailable. Minimum effects of chronic exposure were noted down only at very high levels of the substance content, people in normal conditions of use of the substance are not at risk, thus the quantitative assessment is not required.</p>
<p>4.0 Guidelines for a further user to assess whether he works in accordance with the rules specified in this exposure scenario</p>

A lack of additional guidelines for the risk control measures, apart from the ones described above, to guarantee safe use of the substance / mixture by an employee

Additional advice concerning the good industrial practice, regardless of the information arising from REACH and the Chemical Safety Assessment (CSA) for the main ingredient of the mixture

Based on the principles of the good industrial practice developed for the chemical industry, it is necessary to recommend and hand over the following suggestions with the use of the Safety Data Sheet:

- proceed in accordance with the procedures**
- minimize the number of staff members subject to exposure**
- reduction of emission processes**
- effective extraction of contaminants**
- efficient and effective general ventilation**
- minimization of manual operation stages**
- avoiding contact with contaminated tools and other objects**
- systematic cleaning of devices and cleaning of the workstation**
- management / local supervision to check whether the risk control measures are correctly used and whether the operating conditions are observed**
- training of crew in the good industrial practice**
- good level of occupational health and safety amongst staff members**