

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product trade name	Product code	Product trade name	Product code
NPK(S) 20-10-10(3)	2609436	NPK(MgO, SO ₃) 12-6-18(4, 17)	2609868
NPK 20-10-10	2605204	NP 12-52 MAP granulated	2603480
NP 20-20	2606412	NP 11-52 MAP granulated	2608668
NP(SO ₃) 20-20(7,5)	2609444	NPK(MgO) 8-16-24(2)	2605115
NPK 15-15-15	2607078	NPK 7-20-30	2609151
NPK(S) 15-15-15(5)	2603862	NPK(MgO, SO ₃) 7-14-21(2, 18)	2603105
NPK(S) 15-15-15(3)	2608901	NPK(SO ₃) 5-15-15(18)	2609800
NPK(MgO) 13-10-12(4)	2607191	PK 20-30	2608985
NPK(S) 13-10-12(4)	2608969	NPK(SO ₃) 15-15-15(18)	2608319

Product description: CE fertilising product

PFC: Compound solid inorganic macronutrient fertilis

PFC designation: 1(C)(I)(a)ii

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

Relevant identified uses: As fertiliser. Surface spreading or incorporation at open field and greenhouse crops fertilization.

Uses advised against: Not known.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier: Petrokemija, Plc. Fertilizer Company

Address: Aleja Vukovar 4,44320 Kutina, Croatia

Internet page: <http://petrokemija.hr/> **Telephone number:** +385 44 647 122

E-mail address of responsible person for SDS: safety.data.sheet@petrokemija.hr

1.4. Emergency telephone number

European emergency call number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. However a safety data sheet is being supplied for it upon request as it contains substances that meet the criteria for classification.

Additional information: Not known.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms: Not applicable.

Signal word: Not applicable.

Hazard statements: EUH210 — 'Safety data sheet available on request'.

Precautionary statements: Not applicable.

Supplemental Hazard information: Not applicable.

2.3. Other hazards

Product doesn't contain vPvB substances (vPvB = very persistent, very bioaccumulative) and doesn't meet criteria according annex XIII Regulation (EC) 1907/2006 (< 0,1 %).

Product doesn't contain PBT-compound (PBT = persistent, bioaccumulative and toxic) and doesn't meet criteria according annex XIII Regulation (EC) 1907/2006 (< 0,1 %).

Based on the available information, product doesn't contain endocrine disruptor potential substances (< 0,1 %).

Ammonium nitrate undergoes a hydrolysis reaction when mixed with water, which makes the solution acidic. This acidic solution can cause irritation to the eyes and skin.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Substance name	EC No. CAS No.	Index number in CLP Annex VI	REACH Registration No.	Classification according to Regulation (EC) No 1272/2008	Weight % content
Ammonium nitrate	229-347-8 6484-52-2	Not applicable	01-2119490981- 27-0048	Ox. Sol. 3, H272; Eye Irrit. 2, H319	≤ 55
Ammonium chloride	235-186-4 12125-02-9	017-014-00-8	01-2119489385- 24-0014	Acute Tox. 4, H302; Eye Irrit. 2, H319	< 15
Potassium nitrate	231-818-8 7757-79-1	Not applicable	01-2119488224- 35-0016	Ox. Sol. 3, H272	≤ 50

Additional information: Uniform mixtures containing not more than 55 % of ammonium nitrate mixed with dolomite and not more than 0,2 % total combustible/organic material calculated as carbon.

SECTION 4: First aid measures

4.1. Description of first aid measures

General notes: *Before providing first aid to injured people first protect yourself. Show this safety data sheet or label from the packaging to the doctor in attendance.*

Following inhalation: Remove from source of exposure to fresh air.

Following skin contact: Flush exposed area with tepid water.

Following eye contact: Flush eyes with running water keeping eyelids open.

Following ingestion: Not applicable.

Self-protection of the first aider: see Section 8.2.

4.2. Most important symptoms and effects, both acute and delayed

Following inhalation: Coughing.

Following skin contact: Redness, itching.

Following eye contact: Slight to important redness.

Following ingestion: Not applicable.

4.3. Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Water.

Unsuitable extinguishing media: Chemical extinguishers (dry or foam), steam, carbon dioxide. Do not use any kind of smothering agents (possibility of ammonium nitrate self-confinement).

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: Thermal decomposition of the product may give off toxic nitrous fumes and ammonia. The effects of inhalation may be delayed and lead to pulmonary oedema (excess fluid in the lungs). Any person who has inhaled fertiliser decomposition gases must be removed, made to lie down in shade, kept warm and made to rest even though no symptoms may be evident. Seek medical help.

Hot material may cause thermal and chemical burns to the skin. When heated strongly under confined conditions ammonium nitrate based fertilizers can decompose violently causing an explosion.

5.3. Advice for firefighters

Fire fighting

Fight the fire from protected locations or the maximum effective distance. Approach it from upwind side to avoid any possible toxic gases that may result from decomposition of the fertiliser. Prevent as much as possible the run-off from the extinguishing water from entering municipal drains.

Special protective equipment for firefighters

Wear EN 137 Type 2 Self contained breathing apparatus (SCBA) with EN 136 full face mask. Properties of protective clothing to wear in case of fire are defined in EN 469.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of dust. Use personal protection equipment where excessive levels of dust are present (see section 8.2).

6.2. Environmental precautions

Contain spillage from direct entering to the environment or drains. Inform appropriate authority (see subsection 1.4.) in case of accidental contamination of watercourses or soil.

6.3. Methods and material for containment and cleaning up

For containment

Collect immediately or isolate and cover with PE foil to protect spilled product and dust from spreading.

For cleaning up

Large spill: Wet the spillage and collect by mechanical means. Put collected material into clean container. Avoid generation of dust. Do not wash into water-courses or drains. Re-use or dispose according to national regulations. Clean spillages from conveyers, elevators and split bags can be collected and reworked.

Small spill: Collect and put into clean container. Clean up affected area and wash down with water.

6.4. Reference to other sections

For protective equipment see Section 8. For waste treatment see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures: Avoid the formation of dust. Adequately ventilate storage rooms and workplaces. Avoid heating of the product. Prevent heating under confinement and in equipment parts. Keep away from incompatible materials, heat, moisture and direct sunlight. The use of explosives to break up fertilizer, or adjacent heaps, that have caked in storage must be expressly forbidden. Caked product can be broken up by mechanical means. Avoid damaging the bags during handling. Damaged bags in storage should be removed from the stack in order to secure stack stability and prevent further spillage.

Measures to prevent fire: Forbid smoking, open fires, electrical heaters with exposed radiant coils/filaments and naked flames (except when authorised for maintenance).

Measures to prevent aerosol and dust generation: Regularly clean workplaces. If possible, cleaning should be wet or damp. Do not blow off dust deposits. Immediately dispose of waste in a dust-free manner.

Measures to protect the environment: Do not allow to enter directly into the environment or sewage drainage system.

Advice on general occupational hygiene: Wash hands with soap and water before eating, drinking and smoking. Do not eat, drink or smoke in the working and storage area. Cleaning of the work clothes may only take place by washing. Avoid shaking out or blowing off the dust with pressurized air. An effective and safe blowing off of dust of the entire work clothes from the shoulder to the shoes can be achieved by using an air-shower cabin.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in well ventilated, preferably covered storage area or storage building with adequate ventilation.

The recommended storage temperature is below 30 °C to maintain product quality.

Materials, which are thermally stable and known to be non-reactive with ammonium nitrate (e.g. diammonium phosphate - DAP, sodium nitrate and limestone) may be stored in the same storage area as the NPK/NP/PK fertilizers. Urea should not be stored in the same building as ammonium nitrate based fertilizers. If this is unavoidable, conditions should be such that neither fertilizer can affect the other in any circumstances, in particular in the case of a fire. Do not store fertilizers in the vicinity of explosives.

Ensure no stack or hip is closer than one metre to the roof beam or light fittings. Between stacks should be the passageway wide enough to provide vehicular access in the event of an emergency.

Packaging materials: Polyethylene (PE) and polypropylene/polyethylene (PP/PE) bags.

Requirements for storage rooms and vessels: Keep container tightly closed. The containers must be clearly and permanently marked. Stores should be adequately equipped with fire-fighting equipment which should include:

- a fire water supply via a typical water hydrant from a piped supply or a reservoir,
- a water supply capable of reaching all parts of the storage area, or an adequate supply of water extinguishers for fighting initial outbreaks of fire,
- chemical extinguishers for fires on equipment where fertilizers are not directly involved.

Further information on storage conditions:

Storage in bulk: Store bulk product in closed, dry and ventilated storing premises, with storage floor and heap covered with PE or PP/PE foil. When storing different fertilizer products and non-fertilizer materials in the same building they should be well separated to prevent cross-contamination.

Outside storage: Outside storage is generally suitable for packaged products. It is generally recommended that ammonium nitrate based fertilizers should not be stored in bulk outdoors. Bulk fertilizers should only be stored outside in closed bins, hoppers or silos.

For the NPK/NP fertilisers that contain 16 % or more of nitrogen in relation to ammonium nitrate: Outside storage area should be protected from access by unauthorised persons. „Do not enter. Authorised personnel only” notices should be displayed.*

The product should be protected from direct sunlight e.g. by white plastic sheeting. This can best be achieved by resting the sheet on a single layer of pallets above the stack (the layer of pallets provides a thermal insulating effect). Store the first layer of packages on pallets to prevent damage from ground projections and to minimize water ingress from surface water.

Stacking recommendations:

- bags with unit weights of up to 50 kg: vertical stack up to 2 m,
- loaded pallets stacking: 2 pallets in a vertical stack max.,
- big-bags with unit weights of up to 500 kg: 3 bags in a vertical stack max.,
- big-bags with unit weights of up to 1000 kg: 2 bags in a vertical stack max.

The maximum height of the stack should take into account stack stability, bag strength and safe handling when loading and unloading. Limit the size of stacks in accordance with national regulations, if any.

7.3. Specific end use(s)

Recommendations: None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure limit values

There is no occupational exposure limit proscribed for any mixture component. Supervise the concentration of total dust in the workplace. Exposure limit value for dust is 10 mg/m³.

Substance name	Ammonium nitrate			
EC No. 229-347-8		CAS No. 6484-52-2		
DNEL Workers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not applicable	Not known	Not known	21.3 mg/kg bw/day
Inhalation	Not known	Not known	Not known	37.6 mg/m ³
Dermal	Not known	Not known	Not known	21.3 mg/kg bw/day
DNEL Consumers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not known	Not known	Not known	12.8 mg/kg bw/day
Inhalation	Not known	Not known	Not known	11.1 mg/m ³
Dermal	Not known	Not known	Not known	12.8 mg/kg bw/day
PNEC				
Environmental protection target		PNEC values		
Fresh water		0.45 mg/L (Assessment factor 1000)		
Freshwater sediments		Not known		
Marine water		0.045 mg/L (Assessment factor 10000)		
Marine sediments		Not known		
Food chain		Not known		
Microorganisms in sewage treatment		18 mg/L (Assessment factor 10)		
Soil (agricultural)		Not known		
Air		Not known		



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Substance name	Ammonium chloride			
EC No. 235-186-4		CAS No. 12125-02-9		
DNEL Workers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not known	Not known	Not known	Not known
Inhalation	Not known	Not known	Not known	33.5 mg/m ³
Dermal	Not known	Not known	Not known	190 mg/kg bw/day
DNEL Consumers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not known	Not known	Not known	Not known
Inhalation	Not known	Not known	Not known	9.9 mg/m ³
Dermal	Not known	Not known	Not known	114 mg/kg bw/day
PNEC				
Environmental protection target		PNEC values		
Fresh water		1.2 mg/L (Assessment factor 10)		
Freshwater sediments		Not known		
Marine water		11.2 mg/L (Assessment factor 100)		
Marine sediments		Not known		
Food chain		Not known		
Microorganisms in sewage treatment		16.2 mg/L (Assessment factor 100)		
Soil (agricultural)		Not known		
Air		Not known		

Substance name	Potassium nitrate			
EC No. 231-818-8		CAS No. 7757-79-1		
DNEL Workers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not applicable	Not known	Not known	20.8 mg/kg bw/day
Inhalation	Not known	Not known	Not known	36.7 mg/m ³
Dermal	Not known	Not known	Not known	20.8 mg/kg bw/day
DNEL Consumers				
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not known	Not known	Not known	12.5 mg/kg bw/day
Inhalation	Not known	Not known	Not known	10.9 mg/m ³
Dermal	Not known	Not known	Not known	12.5 mg/kg bw/day
PNEC				
Environmental protection target		PNEC values		
Fresh water		0.45 mg/L (Assessment factor 1000)		
Freshwater sediments		Not known		
Marine water		0.045 mg/L (Assessment factor 10000)		
Marine sediments		Not known		

Food chain	Not known
Microorganisms in sewage treatment	18 mg/L (Assessment factor 10)
Soil (agricultural)	Not known
Air	Not known

8.2. Exposure controls

8.2.1 Appropriate engineering controls

Technical measures to prevent exposure: Provide adequate ventilation in work and storage areas. Use closed systems where possible. Local exhaust ventilation.

8.2.2 Personal protection equipment

Eye/face protection: Chemical safety goggles (EN 166).

Hand protection: Impervious chemical resistant safety gloves (EN 374).

Skin protection: Protective clothing (EN ISO 13982) and footwear (EN 13832, EN ISO 20347).

Respiratory protection: Half-mask for dust/particles (EN 149) or half-mask (EN 140) with filter type P3 or FFP3 for dust (EN 143).

Personal protection equipment should be used as additional risk management measures when other measures are insufficient to guarantee control of risks or, as sole risk management measures in particular cases (e.g. short term low frequency activities such as cleaning and maintenance, installation of new equipment or manual spraying outside industrial settings, or use by professionals).

8.2.3 Control of environmental exposure

Do not discharge into drains, sewage system or water-courses. See Section 6.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property	Unit	Value	Reference conditions
Appearance		Gray to beige granulas.	Temperature 20 °C, pressure 1013 hPa.
Odour		Odourless	Temperature 20 °C, pressure 1013 hPa.
Odour threshold	ppm	Not applicable.	Study scientifically unjustified.
Melting point/freezing point	°C	170	Ammonium nitrate 1013 hPa.
Initial boiling point and boiling range	°C	Not applicable.	The product decomposes before boiling.
Flash point	°C	Not applicable.	Test is relevant only for liquids.
Evaporation rate		Not applicable.	
Flammability (solid, gas)	°C	Non flammable.	Ammonium nitrate
Upper/lower flammability or explosive limits	%	Non flammable.	Ammonium nitrate
Vapour pressure	Pa	Not applicable.	The vapour pressure at room temperature is considered negligible.

Vapour density		Not applicable.	The vapour density at room temperature is considered negligible.
Relative density		Not applicable.	Study scientifically unjustified.
Solubility(ies)	g/l	> 100	Ammonium nitrate in water at 20 °C.
Partition coefficient: n-octanol/water	logPow	Not applicable.	Inorganic substance.
Auto-ignition temperature	°C	Not sensitive to self - ignition.	Between room temperature and melting point.
Decomposition temperature	°C	≥ 200	Ammonium nitrate
pH		> 4.5	pH water solution (10 g/100 mL).
Viscosity	mPas	Not applicable.	Viscosity is only relevant to liquids.
Explosive properties		Not applicable.	See section 16.
Oxidizing properties		Not classified.	See section 16.

9.2. Other information

Hygroscopic material.

SECTION 10: Stability and reactivity

10.1. Reactivity

Galvanized items should be avoided in the storage warehouses construction where zinc is known to react with the ammonium nitrate. See section 10.5.

10.2. Chemical stability

The mixture is stable under predicted storage and handling conditions (see Section 7).

10.3. Possibility of hazardous reactions

In contact with strong bases, gaseous ammonia and nitrogen oxides can occur.

10.4. Conditions to avoid

Avoid heating and contact with incompatible materials.

10.5. Incompatible materials

Strong acids and bases, chlorates, chlorides, chromates, nitrates, permanganates, metal powder of copper, nickel, zinc and their alloys.

Compatibility with various fertiliser materials

Urea: Incompatible. Mixture will quickly absorb moisture resulting in the formation of liquid or slurry. There could be safety implications.

Sulphur (elemental): Incompatible. Sulphur is combustible and can react with nitrates e.g. AN, KNO₃, NaNO₃.

Acidulated rock phosphate, single/triple rock phosphate: Limited compatibility. If free acid is present it could cause a very slow decomposition of AN, affecting, for example, the packaging.

Ammonium nitrate, calcium ammonium nitrate, ammonium sulphate nitrate, ammonium sulphate, potassium chloride: Limited compatibility. Consider the possibility of self-sustaining decomposition and the overall level of coating.

10.6. Hazardous decomposition products

Decomposes into gaseous ammonia and nitrogen oxides when heated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1. Acute toxicity

Classification: Based on available data, classification criteria are not met.

Substance name		Ammonium nitrate		EC No	229-347-8	CAS No	6484-52-2
Routes of exposure	Method	Species	Effective Dose LD ₅₀ /LC ₅₀	Exposure time	Results		
Oral	OECD 401	Rat (Wistar)	LD ₅₀ :2950 mg/kg bw	Not known	No acute toxicity (Hazleton, 1981).		
Inhalation	Not known	Not known	Not known	Not known	No acute toxicity (ICI International, 1985).		
Dermal	OECD 402	Rat	LD ₅₀ :>5000 mg/kg bw	Not known	No acute toxicity (Merkel, D.J. 2000).		
Substance name		Ammonium chloride		EC No	235-186-4	CAS No	12125-02-9
Routes of exposure	Method	Species	Effective Dose LD ₅₀ /LC ₅₀	Exposure time	Results		
Oral	OECD 401	Rat	LD ₅₀ :1410 mg/kg bw	Not known	Acute toxicity (BASF AG, 1983).		
Inhalation	Not known	Not known	Not known	Not known	Not known		
Dermal	EU Method B.3.	Rat	LD ₅₀ :>2000 mg/kg bw	Not known	No acute toxicity (Rösslerova, 2010).		
Substance name		Potassium nitrate		EC No	231-818-8	CAS No	7757-79-1
Routes of exposure	Method	Species	Effective Dose LD ₅₀ /LC ₅₀	Exposure time	Results		
Oral	OECD 401	Rat	LD ₅₀ :>2000 mg/kg bw	Not known	No acute toxicity (Merkel, D.J. 2000a).		
Inhalation	Not known	Not known	Not known	Not known	Not known		
Dermal	OECD 402	Rat	LD ₅₀ :>5000 mg/kg bw	Not known	No acute toxicity (Merkel, D.J. 2000b).		



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11.1.2. Skin corrosion/irritation

NPK/NP/PK fertilizers are not classified as "corrosive" or "irritant". Reason: Available skin irritation studies with ammonium nitrate (OECD 404).

Substance name Ammonium nitrate		EC No 229-347-8	CAS No 6484-52-2	
Method	Species	Exposure time	Results	Remarks
OECD 404	Rabbit	Not known	Not irritating for skin (J.R. Jones, 1983.).	

11.1.3. Serious eye damage/irritation

NPK/NP/PK fertilizers are not classified as "corrosive" or "irritant". Reason: Available eye and skin irritation studies with ammonium nitrate (OECD 404), the test results of NPK ammonium nitrate based fertilisers (OECD 405/EU, Method B.5).

Method	Species	Exposure time	Results	Remarks
OECD 405 / Method B.5	New Zealand rabbit	1-72 hours, 7-14 days	Not irritating to the eyes.	See section 16.

11.1.4. Respiratory or skin sensitisation

Not classified. Studies with inorganic nitrate substances (read-across from supporting substance, structural analogue or surrogate) that NPK/NP/PK fertilizers show no skin sensitisation.

Substance name Ammonium calcium salt		EC No 239-289-5	CAS No 15245-12-2	
Method	Species	Exposure time	Results	Remarks
OECD 429, EU Method B.42	Mouse (CBA)	Not known	No skin sensitisation.	C.G.M.Beerens-Heijnen (2010)

11.1.5. Germ cell mutagenicity

Product is not classified. There is no evidence on the mutagenicity of nitrate salts.

Substance name Potassium nitrate		EC No 231-818-8	CAS No 7757-79-1	
Method	Species	Exposure time	Results	Remarks
OECD 476, EU B.17.	Mouse <i>lymphoma</i>	3 hours, 24 hours	No effects on the cells.	C.M. Verspeek-Rip (2010b)

11.1.6. Carcinogenicity

There is no evidence on the carcinogenicity of ammonium nitrate salts.

11.1.7. Reproductive toxicity

There is no evidence on the reproductive toxicity of nitrate salts.

Substance name Potassium nitrate		EC No 231-818-8	CAS No 7757-79-1	
Method	Species	Effective dose	Results	Remarks
OECD 422	Rat (Wistar)	NOAEL: ≥ 1500 mg/kg bw/day	No oral effects. Analogy KNO_3	Product Safety Labs (2002b)

11.1.8. Specific target organ toxicity — single exposure

Based on available data, the criteria for classification are not met.

11.1.9. Specific target organ toxicity — repeated exposure

Based on available data, the criteria for classification are not met.

11.1.10. Aspiration hazard

Based on available data, the criteria for classification are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine-disrupting properties according to Article 57(f), the Regulations on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or more.

11.2.2. Other information

No other information.

SECTION 12: Ecological information

12.1. Toxicity

Because of the low toxicity of ammonium nitrate towards aquatic organisms and regulation within several European/National Laws, an environmental exposure and risk assessment for ammonium nitrate is not considered necessary. Remark: European standard for nitrates maximum concentration in running water is 50 mg/L.

Substance name		Ammonium nitrate		EC No. 229-347-8	CAS No. 6484-52-2	
Acute toxicity	Method	Species	Dose	Exposure time	Results	Remarks
Fish	Freshwater static	<i>Cyprinus carpio</i>	LC ₅₀ : 447 mg/L	48 hours	No effects	Dabrowska, H., Sikora, H. (1986.)
Crustacea	Not known	Not known	Not known	Not known	Not known	Not known
Algae/aquatic plants	Not known	Not known	Not known	Not known	Not known	Not known
Other organisms	Not known	Not known	Not known	Not known	Not known	Not known

Substance name		Ammonium nitrate		EC No. 229-347-8	CAS No. 6484-52-2	
Chronic toxicity	Method	Species	Dose	Exposure time	Results	Remarks
Fish	Not known	Not known	Not known	Not known	Not known	Not known
Crustacea (Daphnia)	Not known	Not known	Not known	Not known	Not known	Not known
Algae/aquatic plants	Not known	Not known	Not known	Not known	Not known	Not known
Other organisms	Saltwater	Invertebrates <i>Bullia digitalis</i>	EC ₅₀ : 555 mg/L	7 days	No effects.	Brown, A.C. Currie, A.B. (1973.)

Substance name		Potassium nitrate		EC No 231-818-8	CAS No 7757-79-1	
Acute toxicity	Method	Species	Dose	Exposure time	Results	Remarks
Fish	Not known	Not known	Not known	Not known	Not known	Not known
Crustacea	Freshwater	<i>Daphnia magna</i>	EC ₅₀ : 490 mg/L	48 hours	No effects/ analogy KNO ₃	Dowden, B.F., Bennett H.J. (1965.)
Algae/aquatic plants	Freshwater	Algae	EC ₁₀ /LC ₁₀ (NOEC): 1700 mg/L	Not known	No effects/ analogy KNO ₃	Admiraal W. (1977.)
Other organisms	Not known	Not known	Not known	Not known	Not known	Not known

Substance name		Potassium nitrate		EC No 231-818-8	CAS No 7757-79-1	
Chronic toxicity	Method	Species	Dose	Exposure time	Results	Remarks
Fish	Not known	Not known	Not known	Not known	Not known	Not known
Crustacea (Daphnia)	Not known	Not known	Not known	Not known	Not known	Not known
Algae	Saltwater	<i>Benthic diatoms</i>	EC ₅₀ : >1700 mg/L	10 days	No effects/ analogy KNO ₃	Admiraal W. (1977.)
Other organisms	Not known	<i>Not known</i>	Not known	Not known	Not known	Not known

12.2. Persistence and degradability

Abiotic Degradation: Ammonium nitrate dissociates completely in water.

Biodegradation: Because the product is inorganic, no standard biodegradability test system is applicable and necessary.

Physical- and photo-chemical elimination: Not known.

12.3. Bioaccumulative potential

The product does not have bioaccumulative potential. Simple inorganic salts dissociate completely in water.

12.4. Mobility in soil

Known or predicted distribution to environmental compartments: Nitrate ions (NO₃⁻) are mobile in the soil.

Surface tension: The product shows no surfactant properties.

Adsorption/Desorption: Because of solubility in water and other chemical properties the product shows no adsorption properties to soil and sediments.

12.5. Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6. Endocrine disrupting properties

The presence of endocrine disruptors was not determined.

12.7. Other adverse effects

Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

13.1.1 Product / Packaging disposal

Waste code/waste designation according to LoW:

EWC: 06 10 02*, EWC: 15 01 10*

13.1.2 Waste treatment-relevant information

Depending on the character/ contamination of waste, use as a fertilizer if possible or apply appropriate procedures in accordance to requirements of environmental protection (eg. dispose by an authorized company).

The possessor of waste packaging that is hazardous waste is required to hand over such waste packaging to the manufacturer or to an authorized waste disposal company.

Waste should not be disposed of by release to sewers.

13.1.3 Other disposal recommendations

Do not dispose of with other industrial waste (see section 10.5).

SECTION 14: Transport information

The product is not classified as hazardous according to transport regulations on hazardous substances.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

ADR/RID/ADN/ICAO: Non-hazardous for environment.

IMDG: The product is non-hazardous for marine environment (non-HME).

14.6. Special precautions for user

ADR Not applicable.	RID Not applicable.
ADN Not applicable.	IMDG Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No limits.

SECTION 15: Regulatory information

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

15.1.1 EU regulations

Regulation (EC) 1907/2006, SL L 396/2006, SL L 203/2020; Regulation (EU) 2015/830, SL L 132/2015; Regulation (EC) 1272/2008, SL L 353/2008; Regulation (EU) 2019/1148, SL L 186/2019; Regulation (EU) 2019/1009.

Authorisations: Not applicable.

Restrictions on use:

- Regulation (EU) 2019/1148:

Products marked in Section 16.5. with * are regulated by Regulation (EU) 2019/1148: **Acquisition, introduction, possession or use of this product by the general public is restricted. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.**

Products marked in Section 16.5. with ** are regulated by Regulation (EU) 2019/1148: **All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.**

Products marked in Section 16.5. with *** are not regulated by Regulation (EU) 2019/1148 but all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

15.1.2 European Directives

Directive (EU) 2017/164, SL L 27/2017; Directive (EC) 2000/39, SL L 142/2000; Directive (EC) 2006/15, SL L 38/2006; Directive (EU) 2009/161, SL L 338/2009; Directive (EC) 2008/68, SL L 260/2008; Directive (EC) 2008/98, SL L 312/2008.

15.1.3 National regulations

Not applicable.

15.1.4 International regulations

UN Recommendations on the transport of dangerous goods, 21th revised edition.

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for ammonium nitrate, ammonium chloride and potassium nitrate. CSA is documented in Chemical Safety Report. The relevant CSR exposure scenario information are integrated into the safety data sheet core sections.

SECTION 16: Other information

16.1 Indication of changes

Version 1: Second Edition. This safety data sheet is the successor to SDS No. 07-04-5-1000/0002, revision 0, 8/3/2021.

Revised according to Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Changes:

Product identifier (1.1.)

Other hazards (2.3.)

Information on other hazards (11.2.)

Endocrine disrupting properties (12.6.)

Safety, health and environmental regulations/legislation specific for the substance or mixture (15.1.)

16.2 Abbreviations and acronyms

ADN (*fr. Accord europeen relatif au transport international des marchandises Dangereuses par voies de Navigation interieures*) - The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways,

ADR (*fr. Accord europeen relatif au transport international des marchandises Dangereuses par Route*) - The European Agreement concerning the International Carriage of Dangerous Goods by Road,

CSA - Chemical Safety Assessment,

CSR - Chemical Safety Report,

CAS - Chemical Abstracts Service (American Chemical Society),

CLP - classification, labelling and packaging,

DNEL - derived no-effect level,

EC - European Community,

EC - effective concentration),

EC - European Commission,

EWC – European Waste Catalogue,

GHS - Globally Harmonized System of Classification and Labelling of Chemicals,

IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk,

ICAO - International Civil Aviation Organization,

IMDG - International Maritime Dangerous Goods code,

LC - lethal concentration,

LD - lethal dose,

MARPOL - International Convention for the Prevention of Pollution from Ships,

NOAEL - no-observed-adverse-effect-level,

NOEC - no observed effect concentration,

PBT - Persistent bioaccumulative and toxic,

PFC – Product function categories of EU fertilising products

PNEC - predicted no effect concentration,

REACH - Registration, Evaluation, Authorisation and restriction of Chemicals,

RID (*fr. Règlement concernant le transport international ferroviaire des marchandises dangereuses*) – Regulations Concerning the International Carriage of Dangerous Goods by Rail,

STOT - specific target organ toxicity,

vPvB - Very persistent and very bioaccumulative.

Full text of Hazard Class and Category Code

Ox. Sol. 3, H272 - Oxidising Solids, Hazard Category 3

Acute Tox. 4, H302 - Acute toxicity (oral), Hazard Category 4

Eye Irrit. 2, H319 - Serious eye damage/eye irritation, Hazard Category 2

16.3 Key literature references and sources for data

1. Chemical safety assessment: Ammonium nitrate 2010-09-20 CSR-PI-5.2.6, Ammonium chloride 2010-09-24 CSR-PI-5.2.6, Potassium nitrate 2010-09-26 CSR-PI-5.2.6
2. Assessment of acute eye irritation, Study No.: IO-OCDE-PH-12/0482, IO-OCDE-PH-12/0483, IO-OCDE-PH-12/0515, IO-OCDE-PH-12/0516, LAUS GmbH/ Phycher Bio Développement, 2012
3. Test O.1: Test for Oxidizing Solids (UN Manual of Tests and Criteria, Section 34.4.1); Certificates of Evaluation E11703-01, E11703-02, E11703-03, E11703-04, E11703-05, E11703-06, Inspectorate Estonia AS, 2012

4. Test S.1: Trough test for determination of the self-sustaining exothermic decomposition of fertilizers containing nitrate (UN Manual of Tests and Criteria, Section 38.2.4); Certificate of Evaluation EI2I94, EI2I94-02, EI2I94-03, EI2I94-04, EI2I94-05, Inspectorate Estonia AS, 2012
5. Recommendations (UN) on the transport of dangerous goods, 21th revised edition
6. GESTIS data base on hazardous substances, *IFA - Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung*
7. Guidance for the compatibility of fertilizer blending materials, EFMA – European Fertilizer Manufacturers Association, Brussels, June 2006
8. Guidance for the storage, handling and transportation of solid mineral fertilizers, EFMA – European Fertilizer Manufacturers Association, Brussels, April 2007.

16.5 Other information

Product trade name	Product code	Product trade name	Product code
NPK(S) 20-10-10(3)*	2609436	NPK(MgO, SO ₃) 12-6-18(4, 17)**	2609868
NPK 20-10-10*	2605204	NP 12-52 MAP granulated***	2603480
NP 20-20*	2606412	NP 11-52 MAP granulated***	2608668
NP(SO ₃) 20-20(7,5)*	2609444	NPK(MgO) 8-16-24(2)**	2605115
NPK 15-15-15**	2607078	NPK 7-20-30***	2609151
NPK(S) 15-15-15(5)**	2603862	NPK(MgO, SO ₃) 7-14-21(2, 18)**	2603105
NPK(S) 15-15-15(3)**	2608901	NPK(SO ₃) 5-15-15(18)***	2609800
NPK(MgO) 13-10-12(4)**	2607191	PK 20-30	2608985

* NPK/NP fertilizers that contain 16 % or more of nitrogen in relation to ammonium nitrate (restricted explosives precursor) according to Annex I of the Regulation (EU) 2019/1148.

** NPK fertilizers that contain potassium nitrate (reportable explosives precursor) according to Annex II of the Regulation (EU) 2019/1148.

*** NPK/NP fertilizers that do not contain explosive precursors according to Regulation (EU) 2019/1148.

Note:

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the product in terms of their safety precautions. However, it shall not constitute or imply a guarantee concerning composition, properties of performance and shall not establish a legally valid contractual relationship.