PJSC SUMYKHIMPROM **Safety Data Sheet** according to regulation (EC) Nr. 1907/2006 **Super*AGRO*** **Inorganic macronutrient fertilizer**		
Date : 06.10.2020	**Version: 2.8**	**Supersedes version: 2.7**

1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier	
Mixture name	Inorganic macronutrient fertilizer grades NPK, NP
Trade name	Super*AGRO*
ES No.	unavailable
IUPAC	unavailable
CAS No.	unavailable
Molecular formula	Unavailable
REACH pre-registration No	-
REACH registration No	see section 3
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Granulated holding nitrogen, phosphorus and potassium compound fertilizer. Is applied on soils of all types for general application and in rows, to nourish during vegetation, under all agricultural crops: in the event of grain crops sowing, under technical crops, when soil re-digging in autumn and spring, under perennial fruit trees when planting or for nutrition purposes in early spring and after flowerage, in hotbeds and greenhouses. May be utilized to prepare fertilizer mixtures.
Uses advised against	none
1.3 Details of the supplier of the safety data sheet	
Manufacturer	Public Joint-Stock Company SUMYKHIMPROM Kharkivska str., Sumy, Ukraine, 40003
Only representative	ZANGAS Hoch- und Tiefbau GmbH Polina Konstantinova Schwindgasse 5/1/4, м. Vienna, 1040, Austria E-mail P.Konstantinova@zangasgroup.com +43 1 274 16 366
Responsible person	Manufacturing Director Mr. O. V. Denschikov E-mail: stand@sumykhimprom.org.ua
1.4 Emergency telephone number	
+38(0542) 683-550, +38(0542) 674-260 – 24 hours	
Additional information	
If the emergency medical aid is necessary, turn to your local medical establishments	

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture		
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	**Self classification**	**Additional information**
-	-	-
Substances in the mixture do not meet the classification requirements of the current European legislation on classification and labelling № 1272/2008 (except for Calcium-Ammonium Nitrate (CAN)- class 2A (H319))		

Human Health effects	
Product is safe if its use guidance is observed. Low-hazard substance which doesn`t cause acute poisoning. It can be harmful in case of:	
Inhalation	Large doses may cause dryness of the mouth and respiratory disorder.
Eyes	Large doses may cause lachrymation (tears), heating and conjunctivitis.
Skin	Single exposure won't produce irritation. Prolonged exposure in some instances may cause dermatitis to develop.

Swallowing	Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

2.2 Label elements

No labeling required for the product

2.3 Other hazards

none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Ingredient name	EC No.	CAS No.	Concentration, range %	Classification	Pre-registration/ registration number	Index number
3.1 *Grade NPK 15:15:15 sulfur enriched*						
Ammonium Sulphate	231-984-1	7783-20-2	28-40	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	23-27	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	10-23	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	5-16	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	2-6	none	01-2119463277-33-0048	none
3.2 *Grade NPK 16:16:16 sulfur enriched*						
Ammonium Sulphate	231-984-1	7783-20-2	30-40	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	24-30	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	10-20	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	5-20	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	4-6	none	01-2119463277-33-0048	none
3.3 *Grade NPK 13:13:21*						
Ammonium Sulphate	231-984-1	7783-20-2	28-40	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	23-27	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	10-23	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	5-16	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	2-6	none	01-2119463277-33-0048	None
3.4 *Grade NPK 10:26:26*						
Potassium Chloride	231-211-8	7447-40-7	40 – 46	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none

Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	20 – 39	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	9 – 25	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	2 – 6	none	01-2119463277-33-0048	none
Ammonium Sulphate	231-984-1	7783-20-2	0 – 5	none	01-2119455044-46-0091	none
3.5 Grade NPK12:24:12 sulfur enriched						
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	30 – 45	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	25 – 35	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	17 – 22	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	5 – 15	none	01-2119490974-22-0042	none
3.6 ***Grade NPK 10:20:20 sulfur enriched***						
Potassium Chloride	231-211-8	7447-40-7	31-36	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	23-30	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	23-28	none	01-2119455044-46-0091	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	2-10	none	01-2119490974-22-0042	none
3.7 ***Grade NPK 8:24:24 sulfur enriched***						
Potassium Chloride	231-211-8	7447-40-7	38-42	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	32-40	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	10-18	none	01-2119455044-46-0091	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	2-8	none	01-2119490974-22-0042	none
3.8 ***Grade NPK 4:20:20 sulfur and calcium enriched***						
Potassium Chloride	231-211-8	7447-40-7	30 – 38	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Calcium sulfate	231-900-3	7778-18-9 10101-41-4	30 – 50	none	01-2119444918-26-0319	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	25 – 35	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	0 – 8	none	01-2119455044-46-0091	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	0 – 8	none	01-2119490974-22-0042	none
3.9 ***Grade NPK 8:19:29 sulfur enriched***						
Potassium Chloride	231-211-8	7447-40-7	45– 50	none	is exempt from obligation to register under REACH as a	none

					naturally occurring not modified substance	
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	20 – 25	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	10 – 20	none	01-2119455044-46-0091	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	5– 15	none	01-2119490974-22-0042	none
3.10 ***Grade NPK 5:16:36 sulfur and calcium enriched***						
Potassium Chloride	231-211-8	7447-40-7	55-62	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	15-25	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	5-15	none	01-2119488166-29-0044	none
Calcium sulfate	231-900-3	7778-18-9 10101-41-4	3-8	none	01-2119444918-26-0319	none
3.11 ***Grade NPK 14:18:18 sulfur and boron enriched***						
Ammonium Sulphate	231-984-1	7783-20-2	28-40	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	23-27	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	10-23	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	5-16	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	2 – 6	none	01-2119463277-33-0048	none
Boric acid	233-139-2	10043-35-3	1-2	Reproductive toxicity, Category 1B; H360FD	01-2119486683-25-0006	none
3.12 ***Grade NPK 14:23:14 sulfur and boron enriched***						
Ammonium Sulphate	231-984-1	7783-20-2	27-28	none	01-2119455044-46-0091	none
Potassium Chloride	231-211-8	7447-40-7	23-27	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	15-25	none	01-2119490974-22-0042	none
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	10-18	none	01-2119488166-29-0044	none
Carbonyldiamide (urea)	200-315-5	57-13-6	2 – 6	none	01-2119463277-33-0048	none
Boric acid	233-139-2	10043-35-3	1-2	Reproductive toxicity, Category 1B; H360FD	01-2119486683-25-0006	none
3.13 ***Grade NP 12:24 sulfur and calcium enriched***						
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	25-35	none	01-2119488166-29-0044	none

Ammonium Sulphate	231-984-1	7783-20-2	23-35	none	01-2119455044-46-0091	none
Calcium sulfate	231-900-3	7778-18-9 10101-41-4	23-53	none	01-2119444918-26-0319	none
Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	5-15	none	01-2119490974-22-0042	none
3.14 ***Grade NP 10:40 sulfur and calcium enriched***						
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	86-90	none	01-2119488166-29-0044	none
Ammonium Sulphate	231-984-1	7783-20-2	8-11	none	01-2119455044-46-0091	none
Calcium sulfate	231-900-3	7778-18-9 10101-41-4	5-7	none	01-2119444918-26-0319	none
3.15 Grade NPK 6:24:12 sulfur and calcium enriched						
Ammonium Dihydrogenorthophosphate	231-764-5	7722-76-1	30-40	none	01-2119488166-29-0044	none
Calcium Sulfate	231-900-3	7778-18-9 10101-41-4	25-30	none	01-2119444918-26-0319	none
Potassium Chloride	231-211-8	7447-40-7	18-22	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Ammonium Sulphate	231-984-1	7783-20-2	5-15	none	01-2119455044-46-0091	none
Diammonium Hydrogenorthophosphat	231-987-8	7783-28-0	5-12	none	01-2119490974-22-0042	none
3.16 ***Grade NPK 16:16:16***						
Calcium-Ammonium Nitrate *(a mixture of Ammonium Nitrate and Dolomite)*	*229-347-8* *240-440-2*	*6484-52-2* *16389-88-1*	29-50	H319	01-2119490981-27-0051	none
Potassium Chloride	231-211-8	7447-40-7	25-28	none	is exempt from obligation to register under REACH as a naturally occurring not modified substance	none
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	15-25	none	01-2119488166-29-0044	none
Diammonium Hydrogenorthophosphat	231-987-8	7783-28-0	10-20	none	01-2119490974-22-0042	none
Grade NP 18:20 sulfur enriched						
Ammonium Sulphate	231-984-1	7783-20-2	60-62	none	01-2119455044-46-0091	none
Ammonium dihydrogenorthophosphat	231-764-5	7722-76-1	38-40	none	01-2119488166-29-0044	none

4. FIRST AID MEASURES

4.1 Description of first aid measures	
General informations	Provide rest, warm conditions, comfort position, fresh air availability.
4.2 Most important symptoms and effects, both acute and delayed	

In case of inhalation	Take out to fresh air. If breathing is difficult, provide humid oxygen or carbogen; if not breathing, give artificial respiration.
In case of eye contact	Immediately wash the eyes with clean drinking water (within 15 minutes), lifting the upper and lower eyelids. Remove contact lenses, if any, prior to it. Turn to physician if the irritation persists.
In case of skin contact	Remove contaminated clothing, shoes and outfit. Flush the contaminated skin with running water until the skin is clean.
In case of ingestion	Never give anything by mouth to an unconscious person. Flush the oral cavity free of the substance, provide plenty of drinking, induce vomiting, and give charcoal, saline purge. Get medical attention.
Information to physician	Treat symptomatically and supportively.
First aid arsenal	Universal medical kit with a set of drugs (in consultation with the medical department of the enterprise).
4.3 Indication of any immediate medical attention and special treatment needed	
Immediate first aid attention is not expected	

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media	
Flammable properties	Non-flammable, non-explosive, see section 9.
Suitable extinguishing media	Use any means suitable for extinguishing surrounding fire.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams in case of large fire.
5.2 Special hazards arising from the substance or mixture	
Hazardous combustion products	Ammonia, phosphorus, nitrogen and sulphur oxides
Special protective equipment for fire-fighters	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus in case of large fire.
Advice for fire-fighters	During a fire, irritating gases may be generated by thermal decomposition or combustion. Mixture is noncombustible.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	
Personal precautions	Wear appropriate personal protective equipment as specified in Section 8 Do not touch or walk through spilled material.
Emergency procedures	Pick up spills and place in a suitable container for disposal, using a method that does not generate dust. Ventilate area of leak or spill. Keep unauthorized personnel away.
6.2 Environmental precautions	
Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.	
6.3 Methods and material for containment and cleaning up	
Sweep or vacuum up and place in an appropriate closed container. Avoid generating dust. Cover large powder spill with plastic sheet or tarp to minimize spreading. Clean up residual material by washing area with water and detergent. Collect washings for disposal.	
6.4 Reference to other section	
Information about personal precautions - see Section 8. Information about waste disposal - see Section 13.	

7. HANDLING AND STORAGE

7.1 Precautions for safe handling	
Precautions for safe handling	Avoid excessive generation of dust Avoid direct or prolonged contact with skin and eyes. Do not ingest.
Fire prevention	None, as product has no flammable properties. See section 5.
Aerosol and dust generation prevention	Use local exhaust ventilation or other appropriate engineering controls to maintain dust exposures below occupational exposure limit
Electrostatics prevention	As a matter of good practice take measures to prevent the build up of electrostatic charge, such as ensuring all equipment is electrically grounded.
Safe transporting	Adhere to the rules on the transport of goods, which operate for the appropriate type of transport. Not violate the integrity of packaging. During loading works execute instructions and rules for the appropriate works.
Advice on general occupational hygiene	Do not eat, drink and smoke in work 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 and storage conditions	Store in manufacturer's packaging in closed ventilated warehouses, at air temperature maximum 40 ºC or on the site, protected from direct sunlight and atmospheric precipitations, separated from incompatible products (see par.10).
Packaging materials	Package should exclude moisture penetration and guarantee the safety of the product during transportation and storage.
Requirements for storage rooms and vessels	Special requirements for storage structures are not established. The product is to be stored at normal humidity environment.
7.3 Specific end use(s)	
none	

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits

Limit value type (country of origin)	Substance name	EC-No.	CAS-No.	Occupational exposure limit value	
				Long term mg/m^3	Short term mg/m^3
OEL (European Union)	Ammonium Sulphate	231-984-1	7783-20-2	10	-
OEL (Ukraine)	Ammonium Nitrate	229-347-8	6484-52-2	5	-
OEL (Latvia)	Potassium Chloride	231-211-8	7447-40-7	5	-
OEL (Latvia)	Diammonium hydrogenorthophosphat	231-987-8	7783-28-0	6	-
OEL (European Union)	Ammonium dihydrogenorthophosphate	231-764-5	7722-76-1	6	-
OEL (Latvia)	Carbonyldiamide (urea)	200-315-5	57-13-6	10	-
France	Calcium sulfate	231-900-3	10101-41-4	10 inhalable aerosol	
Belgium	Boric acid	233-139-2	10043-35-3	2	6
Canada – Ontario				2 (1)	6(1)

Germany (AGS)				0,5	1(1)
OEL – GESTIS database (International limit values for chemical agents)					

DNELs (Derived No-Effect Level)				
Substance name	**DNEL/DMEL**	**Exposure route**	**Exposure frequency**	**Remark**
Ammonium Sulphate	11,167 mg/m^3	inhalation	Long-term exposure	
Ammonium Nitrate	37,6 mg/m^3	inhalation	Long-term exposure	
Ammonium dihydrogenorthophosphate	6,1 mg/m^3	inhalation	Long-term exposure	
Diammonium hydrogenorthophosphat	6,1 mg/m^3	inhalation	Long-term exposure	
Potassium Chloride	1064 mg/m^3	inhalation	Long-term exposure	
Carbonyldiamide (urea)	292 mg/m^3	inhalation	Long-term exposure	
Calcium sulfate	21,17 mg/m^3	inhalation	Long-term exposure	
Boric acid	8,3 mg/m^3	inhalation	Long-term exposure	

PNEC values:	
Substance name	**PNEC (Predicted No-Effect Concentration)**
Ammonium Sulphate	PNEC = 0.312 mg/L freshwater PNEC = 0.0312 mg/L marine water PNEC=0.53mg/L intermittent release PNEC=16.18 mg/L STP
Ammonium Nitrate	PNEC = 0.45 mg/L freshwater PNEC = 0.045 mg/L marine water PNEC= 4,5mg/L intermittent release PNEC=18 mg/L Sewage treatment plant
Ammonium dihydrogenorthophosphate	PNEC = 1.7 mg/L freshwater PNEC = 0.17 mg/L marine water PNEC=17 mg/L intermittent release PNEC=10 mg/L STP
Diammonium hydrogenorthophosphat	PNEC = 1.7 mg/L freshwater PNEC = 0.17 mg/L marine water PNEC=17 mg/L intermittent release PNEC=10 mg/L STP
Potassium Chloride	PNEC = 0.68 mg/L freshwater PNEC = 0.068 mg/L marine water PNEC= 6.8mg/L intermittent release PNEC=10 mg/L STP
Carbonyldiamide (urea)	PNEC = 0.047 mg/L freshwater PNEC = 0.047mg/L marine water
Calcium sulfate	PNEC=100 mg/L STP
Boric acid	PNEC =2.9mg/L aqua (freshwater) PNEC=2.9mg/L aqua (marine water) PNEC =10mg/L STP

8.2 Exposure controls	
Occupational exposure controls	
Appropriate engineering controls	Running drinkable water must be supplied to the production facilities. Storage of foodstuff and eating in the substance processing area are forbidden.

Respiratory protection	Use dust respirator according to the EN 149 equipped with the dust recovery filter according to the EN 143.
Hand protection:	Protective gloves according to EN 374.
Body protection	Cotton suit or another protective suit and protective footwear according to EN 344.
Eye/face protection	Wear dust-proof glasses according to the EN 166.
Skin protection	Use protective clothing.
General hygiene considerations	Emergency eyewash and safety shower should be in close proximity as a matter of good practice. Wash hands and face thoroughly with mild soap before eating and drinking.
Environmental exposure controls	
Measures to prevent exposure	The product won't produce toxic compounds in air and wastewaters in the presence of other substances or agents. The substance half-life - 30-7 days.
Consumer exposure controls	
Measures related to consumer uses of the mixture	Additional measures are not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	
Appearance	Granules of gray or light pink colour (as per the customer's requirements, may be of other colour).
Odour	weak specific
Odour threshold	Not determined
pH	6,5 (1 : 10 water solution)
Melting point/range (°C)	197 (DAP, MAP), 280 (Ammonium Sulphate), 772 (Potassium Chloride) 135 (CAN)
Initial boiling point/range (°C)	Could not be determined, decomposes immediately after melting.
Evaporation rate	not applicable
Flammability	not applicable
Upper/lower flammability or explosive limits	not applicable
Vapour pressure	does not form vapour in standard conditions.
Vapour density	does not form vapour in standard conditions.
Relative density	not applicable
Water solubility (20°C in g/l)	soluble in water
Viscosity	study technically not feasible
Explosive properties	non explosive
Oxidising properties	non oxidising
9.2 Other information	
No other information	

10. STABILITY AND REACTIVITY

10.1 Reactivity	The product is chemically inert.
10.2 Chemical stability	The product is stable in due conditions of utilization and storage.
10.3 Possibility of hazardous reactions	none
10.4 Conditions to avoid	Prevent from heating. Under the influence of external heat sources at

	over 1000C, diammonium phosphate and urea, included in the fertilizer, are decomposed with emitting of ammonia gas phase. The product is hygroscopic, absorbs atmospheric moisture from air.
10.5 Incompatible materials	Strong oxidizers, strong alkali.
10.6 Hazardous decomposition products	Ammonia; phosphorus, nitrogen and sulphur oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects.	
Toxicokinetics, metabolism and distribution	
Non-human toxicological data	Phosphates are absorbed from the gastrointestinal tract as orthophosphate. The transport of phosphate from the lumen is an active, energy-dependent process, and there are factors that appear to modify the degree of its intestinal absorption. Vitamin D stimulates phosphate absorption, and this effect has been reported to precede the action of the vitamin on transport of calcium ion. In general, about two thirds of the ingested phosphate is absorbed from the gastrointestinal tract in adults. Absorbed phosphate is almost entirely excreted into the urine. After ingestion, ammonium ions can be absorbed by diffusion of the unionized ammonia or by active transport of ammonium ion. After intestinal absorption, ammonium ions are converted to urea by the liver, and subsequently excreted in urine. In aqueous media, ammonium sulfate dissociates in the ammonium and sulfate ions (NH4 +, SO4 2-). These can be taken up into the body by the oral and respiratory routes. Absorbed ammonium is transported to the liver and there metabolized to urea and excreted via the kidneys. Ammonium is also an endogenous substance that serves a major role in the maintenance of the acid-base balance. Sulfate is a normal intermediate in the metabolism of endogenous sulfur compounds, and is excreted unchanged or in conjugated form in urine. It is highly probable that calcium sulfate particles that have reached certain tissues in the organism are eliminated after few weeks, since their solubility in the biological environment seems to be much higher than the solubility of, e.g., quartz.
Human toxikological data	No human information is available

Information on toxicological effects

Acute toxicity:

Substance name	Exposure	Value	Exposure time period	Species	Method
Ammonium sulphate	oral	LD50 >4250 mg/kg bw	acute	rat	OECD guideline 425
	dermal	LD50 >2000 mg/kg bw	acute	rat	OECD Guideline 402
	inhalation	LC50 = 1 mg/L air	acute	rat	Phalen et al., 1980
Ammonium Nitrate	oral	LD50>2950 mg/kg bw	acute	rat	OECD guideline 401
	dermal	LD50 >5000 mg/kg bw	acute	rat	OECD Guideline 402
	inhalation	LC50 > 88.8 mg/L air	acute	rat	Phalen et al., 1980
Ammonium dihydrogenorthophosphate	oral	LD50 >2000 mg/kg bw	acute	rat	OECD guideline 425
	dermal	LD50 >2000 mg/kg bw	acute	rat	OECD Guideline 402
	inhalation	LC50 = 5 mg/L air	acute	rat	OECD Guideline 403
Diammonium	oral	LD50 >2000 mg/kg bw	acute	rat	OECD guideline 425

hydrogenorthophosphate	dermal inhalation	LD50 >2000mg/kg bw LC50 = 5 mg/L air	acute acute	rat rat	OECD Guideline 402 OECD Guideline 403
Potassium Chloride	oral	LD50 =2600 mg/kg bw	acute	rat	OECD guideline 425
Carbonyldiamide (urea)	dermal	LD50 >14300 mg/kg bw LD50 >8200mg/kg bw	acute acute	rat rat	OECD guideline 425 OECD Guideline 402
Calcium sulfate	oral	LD_{50}>2000 mg/kg bw	acute	rat	OECD Guideline 420
Boric acid	oral dermal inhalation	LD50 >2600 mg/kg bw LD_{50}>2000 mg/kg bw LC50 >2.03mg/L air	acute acute acute	rat rat rat	OECD guideline 425 OECD Guideline 402 OECD Guideline 403

Irritation	**Skin**	Not irritating
	Eye	Not irritating
	Respiratory tract	No information available: not required. Based on available data, the substance should not be classified in accordance with Directive 67/548 / EC and the Order of the CLP for acute oral, dermal and inhalation toxicity.
Respiratory or skin sensitisation	Not sensitizing No reliable study with substances contained in the mixture is present. A reliable LLNA study showed no sensitisation of substances contained in the mixture.	
Germ cell mutagenicity	Negative No reliable Ames and chromosome aberration studies with substances contained in the mixture are present.	
Carcinogenicity	In accordance with column 2 of REACH Annex X, no carcinogenicity study needs to be proposed substances contained in the mixture is not genotoxic.	
Toxicity for reproduction	However, reliable data available on substances contained in the mixture shows a NOAEL for reproduction toxicity after oral exposure of rats of >1500 mg/kg bw/day. Based on the toxicity profile, the properties of the NH4+ and phosphate ions and the tolerable intake of phosphorus, the overall conclusion is that no additional studies are considered necessary.	
STOT-single exposure	No data available	

Repeated dose toxicity:				
Substance name	**Exposure**	**Value**	**Exposure time period**	**Species**
Ammonium sulphate	oral	NOAEL: 256 mg/kg bw/day	chronic	rat
	inhalation	NOAEC: 300 mg/ m³	subacute	rat
Ammonium dihydrogenorthophosphate	oral	NOAEL: 250 mg/kg bw/day	chronic	rat
	inhalation	NOAEC: 439.2 mg/ m³	subacute	rat
Diammonium hydrogenorthophosphate	oral	NOAEL: 250 mg/kg bw/day	chronic	rat
	inhalation	NOAEC: 439.2 mg/ m³	subacute	rat
Potassium Chloride	oral	NOAEL: 1820mg/kg bw/day	chronic	rat
Carbonyldiamide (urea)	inhalation	NOAEC: 3.504 mg/m³	chronic	rat
	oral	NOAEL: 2250 mg/kg bw/day	chronic	rat
Calcium sulfate	oral	NOAEL: 100 mg/kg/day	chronic	rat
Boric acid	oral	NOAEL: 100 mg/kg/day	chronic	rat
	inhalation	NOAEC: 470 mg/m³	chronic	rat
Ammonium Nitrate	oral	NOAEL: ≥ 1500 mg/kg bw/day	chronic	rat

	inhalation	NOAEC: ≥ 185 mg/ m³	subacute	rat
STOT-repeated exposure	No data available			

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Product dust may cause atmosphere contamination. Large quantities introduced into water may cause damage to aquatic organisms as well as cause their destruction.
It doesn't form other substances or toxic compounds factors in air and in sewage.

Aquatic toxicity:
No sufficient and reliable data for product hazards valuable valuation for water habitat, but there are fertilizers essential ingredients water toxicity study results:

Aquatic toxicity	Effect dose	Exposure time	Species
Ammonium sulphate			
Acute toxicity to fish	LC50 > 53 mg/L	96 hour	Oncorhynchus mykiss
Acute toxicity to aquatic invertebrates	EC50 =121.7 mg/L	48 hour	Daphnia
Acute toxicity to algae	EC50=2700 mg/L	18 days	Chlorella vulgaris
Ammonium Nitrate			
Acute toxicity to fish	LC50 > 447 mg/L	48 hour	Oncorhynchus mykiss)
Acute toxicity to aquatic invertebrates	EC50 =490 mg/L	48 hour	Daphnia
Acute toxicity to algae	LC50 > mg/L	10 days	Chlorella vulgaris
Ammonium dihydrogenorthophosphate			
Acute toxicity to fish	LC50 > 85.9 mg/L	96 hour	Oncorhynchus mykiss
Acute toxicity to aquatic invertebrates	EC50/LC50 = 1790 mg/L	72 hour	-
Acute toxicity to algae	EC50/LC50 > 100 mg/L, NOEC = 100 mg/L	72 hour	Selenastrum capricornutum
Diammonium hydrogenorthophosphat			
Acute toxicity to fish	LC50 =1700 mg/L	96 hour	-
Acute toxicity to aquatic invertebrates	EC50/LC50 = 1790 mg/L	72 hour	-
Acute toxicity to algae	EC50/LC50 > 100 mg/L, NOEC = 100 mg/L	72 hour	Selenastrum capricornutum
Potassium Chloride			
Acute toxicity to fish	LC50 =880 mg/L	96 hour	Pimephales promelas
Acute toxicity to aquatic invertebrates	EC50= 177 mg/L	48 hour	Daphnia
Acute toxicity to algae	EC50=1337 mg/L	120 hour	Nitzschia linearis
Carbonyldiamide (urea)			
Acute toxicity to fish	LC50 > 6810 mg/L	96 hour	-
Acute toxicity to aquatic invertebrates	EC50/LC50 = 10000 mg/L	72 hour	Daphnia
Acute toxicity to algae	EC50/LC50 > 100 mg/L, NOEC = 100 mg/L	72 hour	Selenastrum Capricornutum
Calcium sulfate			

Acute toxicity to fish	LC50 > 100 mg/L	96 hour	Oryzias latipes
Acute toxicity to aquatic invertebrates	EC50 > 100 mg/L	48 hour	Daphnia
Acute toxicity to algae	EC50 > 100 mg/L ,NOEC< 100 mg/L	72 hour	Selenastrum Capricornutum
Boric acid			
Acute toxicity to fish	LC50 =447 mg/L	96 hour	Oncorhynchus kisutch
Acute toxicity to aquatic invertebrates	EC50 = 319.8mg/L	24 hour	Daphnia
Acute toxicity to algae	NOEC>=10 mg/L	96 hour	Chlorella pyrenoidosa

12.2 Persistence and degradability

Abiotic Degradation

In accordance with REACH Annex XI, testing may be omitted if testing does not appear scientifically necessary. No hydrolysable group is present. Simple inorganic salts such as phosphates and sulphates are not susceptible to photo degradation.

Biodegradation	No data are available: not required and for inorganic substances not reliable to estimate

12.3 Bioaccumulative potential

Simple inorganic salts with high aqueous solubility will exist in a dissociated form in an aqueous solution. Such a substance has a low potential for bioaccumulation.

12.4 Mobility in soil

As inorganic compounds, traditional degradation studies are not applicable. Due to the water solubility and the ionic nature, the substances are not expected to adsorb or bioaccumulation, water is the main target compartment, and the substance will not volatilize from soil.

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 for inorganic compounds.

12.6 Other adverse effects:

none

13. ISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	
Appropriate disposal / Product	Waste disposal in strict correspondence with the state and local laws and regulations.
Waste codes / waste designations according to EWC / AVV	None, waste is not classified as hazardous according to the Commission Decision 2000/532/EC
Appropriate disposal /Packaging	Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

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	Not applicable
14.6. Special precautions for user	Not applicable
14.7 Transport in bulk according to Annex II of	Not applicable

MARPOL73/78 and the IBC Code	
14.8 Additional information	The product is transported by railway (RID), road (ADR), and sea (IMDG) transport. The cargo is classified as non-hazardous in compliance with the international rules of carriage. Obligatory mark «Keep dry».

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the mixture
EU regulation
- European Parlament and Council Regulation 1907/2006/EC, December, 2006, regarding registration, estimation, authorization and restriction of chemicals (REACH); - European Parlament and Council Regulation 1272/2008/EC (CLP) December, 16th, 2008 regarding substances and mixtures classification, marking and packing; - Standard EN 374; - Standard EN 149; - Standard EN 166 - Standard EN 143; - Standard EN 344.
Other regulations
This product is not classified according to Regulation (EC) No 1272/2008

16. OTHER INFORMATION

Relevant R- , H-, EUH-phrases	None
Abbreviation	PEL - permissible exposure limit OEL - occupational exposure limit REL - recommended exposure limit DNEL - derived no-effect level PNEC - predicted no effect concentration LD50 - lethal dose LC50 - lethal concentration EC50 - half maximal effective concentration NOAEL - no observed adverse effect level NOAEC - no observed adverse effect concentration PBT or vPvB - persistent, bioaccumulative and toxic or very persistent very bioaccumulative TVA - threshold limit value
Training instructions	Read carefully the SDS before using the product
Further information	The data contained in the safety data sheet is based on the amount of information and experience available to the company at this time. A consumer of a product is responsible for the consequences of its use in specific purposes. Information refers to this particular substance. It may be invalid in case this substance is used together with any other materials or any other production process. The user bears responsibility for assessment of applicability and completeness of this information for his particular applications.