

GROENINK'S
MATERIAL AND DATA SHEET
GET A GRIP

Date Prepared: 2/13/16

I. Product Identity

PRODUCT NAME: 17-17-17 50% Sulphated Potash and Ammonium Sulfate

MFR INFO: Groenink's Elevator and Hardware
11260 Michigan Ave.
Nunica, MI 49448

FOR EMERGENCY: (800) 424-9300 (CHEMTREC)
FOR INFORMATION: (616) 837-7391

CURRENT AS OF: 3/19/16

II. Ingredient List

Potash
Sulphated Potash
Monoammonium Phosphate
Urea
Ammonium Sulphate

III. Ingredient: Potash

Product Name	:	Potash
Product Form	:	Mixture
Product Code	:	GRA, SOG, STD, SUS
Other Identification	:	Muriate of Potash: Granular, Standard, and Suspension Grades, WST
Use of substance	:	Fertilizer
Physical state	:	solid
Appearance	:	Granular solid. Fine to 4 mm size.
Color	:	White to red
Odour	:	Slightly oily
Odour threshold	:	No data available
pH	:	7 (approximately)
Melting point	:	771 – 773 °C (1420 – 1423 °F)
Freezing point	:	No data available
Boiling point	:	1420 – 1500 °C (2588 – 2732 °F)

Flash point	:	Not available
Self ignition temperature	:	Not flammable
Decomposition temperature	:	No data available
Flammability	:	Not flammable
Vapour pressure	:	80 Pa at 20°C
Density	:	1.98 g/cc
Solubility	:	Water: 347 g/l (at 20°C)
Explosive limits	:	Not explosive
Explosive properties	:	None known
Oxidizing properties	:	None known
VOC content	:	< 0.5 %
Reactivity	:	Stable at ambient temperature and under normal conditions of use.
Chemical stability	:	Stable at standard temperature and pressure.
Possibility of hazards	:	Hazardous polymerization will not occur.
Conditions to avoid	:	Protect from moisture.
Incompatible materials	:	Contact with acids liberates toxic gas (chlorine). Contact with hot nitric acid may produce toxic nitrosyl chloride.
Hazardous decomposition	:	Contact with strong acids may produce hydrogen chloride gas.

Products

Firefighting Measures

Suitable extinguishing media:	:	Not flammable. Use extinguishing media appropriate for surrounding fire.
Fire hazard	:	Under conditions of fire this material may produce: Potassium oxides; Hydrogen chloride; Chlorine gas.
Explosion hazard	:	Product is not explosive.
Reactivity	:	Stable at ambient temperature and under normal conditions of use.
Firefighting instructions	:	Keep upwind. Under conditions of fire this material may produce: Potassium oxides; Hydrogen chloride; Chlorine gas.
Protection during fire fighting:	:	Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

Other Information : Do not allow run off from fire fighting to enter drains or water courses.

GHS-US classification

Eye Irrit. 2B H320

GHS-US labelling

Signal word (GHS-US) : Warning

Hazard statements (GHS-US): H320 – Causes eye irritation

Precautionary statements : P264 – Wash hands thoroughly after handling
P305+P351+P338 – If in eyes:Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 – If eye irritation persists: Get medical advice/attention.

Toxicological Information

Acute toxicity : Not classified

Potash	
Additional information	Potassium chloride is listed by the FDA as “Generally Recognizes as Safe” (GRAS and may be used as a food additive according to prescribed conditions.

Potassium Chloride (7447-40-7)	
LD50 oral rat	2600 mg/kg

Sodium Chloride (7647-14-5)	
LD50 oral rat	3 g/kg
LD50 dermal rabbit	> 10 g/kg
LC50 inhalation rat (mg/l)	> g/m ³ (Exposure time: 1 hr)

Ecological Information

Ecotoxicity:	
Acute toxicity to fish:	(Lepomis macrochirus) (blue gill) – 96 hour –

	LC ₅₀ = 2010 mg/L (ppm KCl)
Chronic toxicity to fish:	No data available
Acute toxicity to aquatic invertebrates:	(Daphnia magna) – 48 hours – EC ₅₀ – 337 – 825 mg/L; (Physa heterostropha) – 96 hrs – LC ₅₀ = 940 mg/L.
Chronic Toxicity to Aquatic Invertebrates:	No data available
Toxicity to aquatic plants:	((Nitzshia linearis)diatom) – 5 days – 120 hour TIm = 1,337 ppm KCl; (Scendesmus subspicatus) 72 hour - EC ₅₀
Toxicity to bacteria: (activated)	No data available
Toxicity to soil dwelling organisms:	No data available
Toxicity to terrestrial plants:	No data available

Enviromental Fate:

Stability in Water:	Ions can persist, dissociates in water
Stability in Soil:	Binds to clay particles
Transport and Distribution:	1.51 x 10 ⁻⁸ % to air; 45.2% to water; 54.7% to soil; 0.0755% to sediment

Toxicity:

Not toxic to aquatic organisms defined by USEPA

Degration Products:

Biodegradation:	No data available
Photodegradation:	No data available

US State Regulations

Potash	SARA Sectin 311/312	Immediate (acute) health hazard
Potassium Chloride (7447-40-7)	Listed on the United States TSCA (Toxic	

	Substances Control Act) inventory
Sodium Chloride (7647-14-5)	Listed on the United States TSCA (Toxic Substances Control Act) inventory

Full text of H- phrases:

Eye Irrit. 2	Serious eye damage/eye irritation (Category 2)
Skin Irrit. 2	Skin corrosion/irritation (Category 2)
STOT SE 3	Specific target organ toxicity (single exposure) (Category 3)
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

IV. Ingredient: Sulphated Potash

Product Name	:	Sulfate of Potash
Product Code	:	Standard SOP
Recommended use	:	Specialty crop nutrient, turf grass fertilizer, general fertilizer, general fertilizer uses, and specialty industrial uses.
Hazard Symbol	:	None
CAS Number	:	7778-80-5
Appearance	:	Solid
Physical State	:	Powder, Crystals or Granular
Color	:	Odorless
pH	:	7 (10% solution) 7 Aqueous solution is neutral
Melting/Freezing Point	:	1952.6 °F (1067 °C)
Boiling Point	:	3072.2 °F (1689 °C)
Specific gravity	:	2.66 @21°C (H2O = 1)
Vapor pressure	:	< 0 kPa at 25°C
Density	:	2.66 g/cm ³ estimated
Flash Point Class	:	Flammable IB
Molecular Formula	:	K ₂ SO ₄
Molecular Weight	:	174.27

Stability and Reactivity

- Reactivity : May react with the following components: Aluminum and Magnesium.
- Possibility of hazardous : Hazardous polymerization does not occur.
- Chemical stability : Stable under recommended storage conditions.
- Conditions to avoid : Avoid dispersal of dust in the air. (clearing dust surfaces with compressed air.)
- Incompatible materials : None when used and stored according to label directions.
- Hazardous decomposition : May include and are not limited to: Oxides of sulfur.

Toxicological Information

Components	Species	Test Results
Dermal LD50	Not Available	
Inhalation LC50	Not Available	
Oral LD50	Rat	6600 mg/kg

Ecological Information

Product	Species	Test Results
Fish LC50	Fathead minnow (Pimephales Promelas)	510-880 mg/l, 96hrs
Algae IC50	Algae	2900 mg/L, 72hrs
Crustacea EC50	Daphnia	890 mg/L, 48hrs
Fish LC50	Fathead Minnow (Pimephales promelas)	510-880 mg/L, 96hrs

Transport Information

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG – Canada)

Not regulated as dangerous goods.

Federal Regulations

Safe Drinking Water Act (SDWA) – Not regulated

Food and Drug Administration (FDA) – Direct food additive

U.S. State Regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

United States & Puerto Rico – Toxic Substances Control Act (TSCA) Inventory – On Inventory: yes

*A yes indicates that all components of this product comply with the inventory requirements administered by the governing country.

V. Ingredient: Monoammonium Phosphate
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Product Form	:	Substance
Substance Name	:	Monoammonium Phosphate (MAP)
Uses of Substance	:	Agricultural chemical
GHS-US Classification:		
Skin Irrit. 2 H315		
Eye Irrit. 2B H320		
STOT SE 3 H335		
Signal Word	:	Warning
Engineering Control	:	Ensure adequate ventilation, especially in confined areas to avoid high dust concentration.
Personal Protection	:	Gloves, safety glasses, and protective clothing.
Hand Protection	:	Impermeable protective gloves.
Eye Protection	:	Protective goggles.
Physical State	:	Solid
Appearance	:	Granular solid
Molecular Mass	:	115g/mol
Color	:	Black to green
Odour	:	Odourless
pH	:	4.2
pH Solution	:	0.2 M at 25°C (aqueous solution)
Melting Point	:	190°C (374°F)
Freezing Point	:	No data available

Boiling Point : Decomposes
Flash Point : No data available
Self Ignition Temperature : Not flammable
Flammability : Not flammable
Vapour Pressure : < 1mm Hg (at 20°C)
Relative Density : No data available
Density : 60-64 lbs/ft³ (loose); 65-72 lbs/ft³ (tamped)
Solubility : Soluble; Water: 328 g/l (at 20°C)
Viscosity : No data available

Name	Product Identifier	%	GHS-US classification
Monoammonium phosphate as P ₂ O ₅	(CAS No.) 7722-76-1	52	Skin Irrit. 2 H315 Eye Irrit. 2B H320 STOT SE 3 H335
Total Nitrogen, as N****		11	
Fluorides, as F		0.6	

*** Product contains monoammonium phosphate as essential ingredient with small amounts of diammonium phosphate, ammonium sulfate, urea, and aluminum/calcium/iron/magnesium phosphate compounds.

Monoammonium Phosphate (7722-26-1) as P ₂ O ₅		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ – inhalable fraction 3 mg/m ³ – respirable fraction
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ – particulate 3 mg/m ³ - respirable
Fluorides		
USA ACGIH	ACGIH TWA (mg/m ³)	2.5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2.5 mg/m ³

Hazard Statements : H315 – Causes skin irritation
H320 – Causes eye irritation
H335 – May cause respiratory irritation
H401 – Toxic to aquatic life

Precautionary statements : P261 – Avoid breathing dust
P264 – Wash hands thoroughly after handling
P271 – Use only outdoors or in a well-ventilated area
P273 – Avoid release to the environment

P280 – Wear eye protection, face protection, protective clothing, protective gloves

P302+P352 – If on skin, wash with plenty of water

P304+P340 – If inhaled, remove person to fresh air and keep comfortable for breathing

P305+P351+P338 – If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

P312 – Call a Poison Center/ doctor if you feel unwell

P332+P313 – If skin irritation occurs, get medical attention/advice

P337+P313 – If eye irritation persists, get medical attention/advice

P362 – Take off contaminated clothing

P403+P233 – Store in a well-ventilated place. Keep container tightly closed.

P405 – Store locked up

P501 – Dispose of contents/container according to local, regional, national, and international regulations.

Stability and Reactivity

Reactivity – Stable at ambient temperature and under normal conditions of use.

Chemical stability – Stable at standard temperature and pressure.

Possibility of hazardous reactions – Hazardous polymerization will not occur.

Conditions to avoid – Welding or hot work on equipment or plant which may have contained fertilizer should not be done without first washing thoroughly to remove all fertilization.

Incompatible materials – Alkalis and caustic products; strong acids; copper and its alloys.

Hazardous decomposition products – Ammonia is released upon reaction with strong bases or from thermal decomposition.

Waste Treatment Methods

Sewage disposal recommendations – This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Waste disposal recommendations – place in an appropriate container and dispose of the contaminated material at a licensed site.

Addition information – Dispose of waste material in accordance with all local, regional, national, and international regulations.

Toxicological Information

Monoammonium Phosphate	
LD50 oral rat	> 2000 mg/kg OECD Guideline 425
LD50 dermal rat	>5000 mg/kg OECD Guideline 402
Additional information	This compound is listed by the FDA as generally recognized as safe (GRAS) and may be used as a food additive, for both human food and ruminant feed, according to the prescribed conditions.
Monoammonium phosphate (7722-76-1)	
LD50 oral rat	5750 mg/kg
LD50 dermal rabbit	> 7940 mg/kg

Skin corrosion/irritation : Causes skin irritation. pH: 4.2 (0.2 M solution)

Serious eye damage/irritation: Causes eye irritation. pH: 4.2 (0.2 M solution)

Respiratory : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified.

Specific target organ toxicity : May cause respiratory irritation.

Specific target organ toxicity : Not classified.

Aspiration hazard : Not classified.

Ecological Information: Toxicity

Ecotoxicity:	
EPA Ecological Toxicity rating:	Slightly toxic to practically non-toxic to aquatic organisms based on the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) acute toxicity ratings.
Acute Toxicity to Fish:	(Oncorhynchus mykiss) 96 hr: LC ₅₀ = > 95.9 mg/L
Chronic Toxicity to Fish:	No data available
Acute Toxicity to Aquatic Invertebrates:	No data available
Chronic Toxicity to Aquatic Invertebrates:	No data available
Toxicity to Aquatic Plants:	No data available
Toxicity to Bacteria:	No data available
Toxicity to Soil Dwelling	No data available

Organisms:	
Toxicity to Terrestrial Plants:	No data available
Environmental Fate:	
Stability in water:	Stable
Stability in soil:	Stable
Transport and Distribution:	Calculated, fugacity level III: 3.98×10^{-12} to air, 45.3% to water, 54.6% to soil, 0.0755% to sediment. Phosphates, whether water or citrate soluble, are translocated in the soil only over very short period and are them immobilized.
Toxicity: Inorganic phosphates have the potential to increase the growth of freshwater algae, whose eventual death will.	
Degradation Products:	
Biodegradation:	The Phosphorus cycle is well understood. Phosphates are converted to calcium or iron/aluminum phosphates or are incorporated with the organic soil matter.
Photodegradation:	No data available.

VI. Ingredient: Urea

Product Name	:	Urea, Dry
Product Code	:	URGRAN
Product Form	:	Mixture
Product Group	:	Commercial product
Synonyms	:	Urea Granular; Urea Microprills; Urea Pastille; Urea Prills
Physical State	:	Solid
Appearance	:	Granules
Colour	:	White
Odour	:	Slight Ammonia
pH	:	7.2 at 100g/l
Molecular weight	:	60.07
Melting Point	:	Decomposes above 132.6 °C (270.7 °F)
Vapour Pressure	:	80 Pa at 20°C
Flammability	:	Non-flammable
Density	:	2.31 g/cm ³
Bulk Density	:	44-49 lb/ft ³

750 kg/m³

Solubility : 1,193 g/l at 25°C

Log Pow : -1.59 @ 20°C

GHS-US Classification

Skin Irritation 2 H315

Eye Irritation 2A H319

STOT SE 3 H335

Hazard Statements (GHS-US)

H315 – Causes skin irritation

H319 – Causes serious eye irritation

H335 – May cause respiratory irritation

Precautionary Statements (GHS-US)

P261 – Avoid breathing dust

P264 – Wash hands thoroughly after handling

P271 – Use only outdoors or in a well-ventilated area

P280 – Wear eye protection, protective gloves, protective clothing

P302+P352 – If on skin: wash with plenty of water

P304+P340 – If inhaled: remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 – Call a POISON CENTER or doctor/physician if you feel unwell

P332+P313 – If skin irritation occurs: Get medical advice/attention

P337+P313 – If eye irritation persists: Get medical advice/attention

P362 – Take off contaminated clothing

P403+P233 – Store in a well-ventilated place. Keep container tightly closed

P405 – Store locked up

P501 – Dispose of contents/container in accordance with local regional, national, and international regulations.

Other Hazards : Hazardous to the aquatic environment

Reactivity : Stable at ambient temperature and under normal conditions of use

Chemical Stability : Stable at standard temperature and pressure

Possibility of hazardous : Hazardous polymerization will not occur.

Conditions to avoid : Protect from moisture. May slowly hydrolyze to ammonium carbamate and eventually decompose to ammonia and carbon dioxide.

Incompatible materials : May form explosive mixture if in contact with strong acid such as nitric or perchloric acids. Avoid contact with: strong oxidizers; strong acids or bases; nitrates; hypochlorites. Reacts with sodium or calcium hypochlorite to form explosive nitrogen trichloride.

Fire Hazard : Decomposes above 132.6°C (270.7°F). Under conditions of fire this material may produce: Ammonia, Nitrogen oxides, and/or Biuret. Short-term exposures to smoke and gases may lead to irreversible lung injury without early signs and symptoms.

Explosion Hazard : Product is not explosive. May form explosive mixtures if mixed with strong acid (Nitric/Perchloric) and strong oxidizers.

General Measures : Handle in accordance with good industrial hygiene/safety practice.

Signal Word : Warning

Aquatic Environment Hazard: Per OSHA 29 CFR 1910.1200(b)(5)(iii) labelling is not required for URPRLMIF or URPRLCF as labelling is covered under the requirements of the Food and Drug Administration (FDA) of the US Department of Agriculture (USDA).

Name	Product Identifier	% by Weight	GHS-US classification
Urea (Carbamide, Carbonyldiamide, Carbamidic Acid)	(CAS No.) 57-13-6	97.5 – 99.7	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Alkalinity, as Ammonia		150 ppm (max)	
Methylenediurea	(CAS No.) 13547-17-6	0 – 2.5	Eye Irrit. 2A, H319
Biuret	(CAS No.) 108-19-0	0 – 1.5	Skin Irrit. 2, H315 Eye Irrit. 2A, H319

Control Parameters:

Urea (57-13-6)		
USA ACGIH (nuisance dust)	ACGIH TWA (mg/m ³)	10 mg/m ³ – inhalation particulate
USA OSHA (nuisance dust)	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³ – Respirable (particulate) Fraction: Urea

Toxicological Information

Acute Toxicity : Not classified

LD50 Oral Rat	8471 mg/kg
LD50 Oral Rat	14,300 mg/kg-male; 15,000 mg/kg-female
LD50 Oral Mouse	11,500 mg/kg-male; 13,000 mg/kg-female

Skin corrosion/irritation : Causes skin irritation

Serious eye damage/irritation: Causes eye irritation

Respiratory or skin : Not classified

sensitisation

Germ cell mutagenicity : Bacterial Genetic Toxicity Invitro:
Gene Mutation:
Salmonella typhimurium – Bacterial reverse mutation assay:
Negative Chinese Hamster - Chromosomal aberration test:
Positive (very high dose); Mouse: Positive (very high dose). Non-
Bacterial Genetic Toxicity In-Vitro: Chromosomal Aberration:
Mouse – Bone Marrow Cytogenetic test: Positive (extremely high dose).

Carcinogenicity : Not listed in IARC Monographs, by NTP or OSHA

Reproductive Toxicity : Toxicity to Reproductive:
No toxic affects on mouse gonads up to 6,750 mg/kg/day.
No toxic affects on rat gonads up to 2,250 mg/kg/day.
Developmental toxicity/ Teratogenicity: Not teratogenic.

Specific target organ : May cause respiratory irritation.

toxicity (single exposure)

Specific target organ : Not Classified

toxicity (repeated exposure)

Aspiration hazard : Not Classified

Ecological Informations

Ecotoxicity	Acute Toxicity to Fish:	96 -h: (Barillius barna)
	Chronic Toxicity to Fish:	LC ₅₀ =>9,000mg/L
	Acute Toxicity to Aquatic Invertebrates:	No data available
		(Daphnia magna): 24-h EC ₅₀ :

	Toxicity to Aquatic Plants:	> 10,000 mg/L
	Toxicity to Bacteria:	(Scenedesmus quadricauda)
	Toxicity to Soil Dwelling Organisms:	192-hr cell multiplication inhibition test-TT>10,000 mg/L
	Toxicity to Other Non Mammalian Terrestrial Species:	No data available
	Toxicity to Terrestrial Plants:	Applications of nitrogenous fertilizers to grassland for long periods of time may have deleterious effects on earthworms in the absence of liminig.
	Stablity in Water:	(Pigeon) – Subcutaneous – LDLO = 16,000 mg/kg. Since Urea is a fertilizer, it may promote eutrophication in waterways. Non-toxic to aquatic organisms as defined by USEPA.
		7 days exposure to 0mg urea / leaf-tip necrosis
		T½ > 1 year
Eviromental Fate:	Stability in Soil:	No data available
Toxicity:	Transport and Distribution: Non-toxic to aquatic organisms as defined by USEPA. No know toxicity.	.16% in air; 99.84% in water (calculated (Fugacity Level 1))

Degradation Products:	Biodegradation: Photodegradation:	Ultimately biodegradable (OECDTG 302B) 93-98% (SCAS 24 hr) No data available.
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Environmental Precautions

If spill could potentially enter any waterway, including intermittent dry creeks, contact the U.S. Coast Guard National Response Center at 800-424-8802. In case of accident or road spill notify CHEMTREC at 800-424-9300.

Containment and Cleaning Up

If contaminated with other materials, contain and collect as any solid in suitable containers. Do not allow into drains or water courses or dispose of where ground or surface waters may be affected.

Prevent large quantities from contacting vegetation.

Recover the product by vacuuming, shoveling, or sweeping and place in appropriate container to be disposed at an appropriate disposal facility according to current applicable laws and regulations and product characteristics at the time of disposal. Provide adequate ventilation. Avoid generation of dust during clean-up of spills. If uncontaminated, recover, reuse product.

Practice food housekeeping – spillage can be slippery on smooth surface either wet or dry.

Transport Information

- UN number : No dangerous good in sense of transport regulations.
- UN proper shipping name : Not applicable
- Additional Information : No supplementary information available.
- Overland transport : No additional information.
- Transport by sea : No additional information.
- Air transport : No additional information available.

Regulatory Information

US Federal Regulations

Urea, Dry	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Urea (57-13-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Biuret (108-19-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations

The following states have an OSH program approved by OSHA. If you are located in any of these states you may be under state jurisdiction rather than federal jurisdiction and your state may have more stringent requirements than OSHA. You should consult your state regulations to ensure compliance.

Alaska	Indiana	Minnesota	North Carolina	Utah
Arizona	Iowa	Nevada	Oregon	Vermont
California	Kentucky	New Mexico	Puerto Rico	*Virgin Islands
*Connecticut	Maryland	*New Jersey	South Carolina	Virginia
Hawaii	Michigan	*New York	Tennessee	Washington
*Illinois				Wyoming

*The state plans in these states apply only to public sector employers. In these states private sector employers are subject to USOL – OSHA jurisdiction. All other state plans apply to both public and private sector employers.

Urea (57-13-6)

US – Minnesota – Hazardous Substance List

US – Texas – Effects Screening Levels – Long term/Short term

Other Information

NFPA health hazard : 2 – Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 – Materials that will not burn.

NFPA reactivity : 0 – Normally stable, even under fire exposure conditions, and are not reactive with water.

Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation

H319	Causes serious eye irritation
H335	May cause respiratory irritation

VII. Ingredient: Ammonium Sulphate

Product Name	:	Ammonium Sulfate
MSDS Number	:	000000011568
Product Code	:	SULF-N
CAS-No.	:	7783-20-2
Concentration	:	>98.50 %
Storage Temperature	:	<280 °C (<536 °F)
Physical State	:	granules
Color	:	colourless to brown
Odor	:	odourless
pH	:	5.5
Density	:	1.77 g/cm ³
Water Solubility	:	410-750 g/l at 20-25 °C
Molecular Weight	:	132.14 g/mol
Hazardous Decomposition	:	Sulphur oxides
Products		Ammonia Carbon Dioxide Carbon Monoxide

Toxicological Information

Acute Oral Toxicity	:	LD50: 3,000 mg/kg Species: Rat
Acute Dermal Toxicity	:	LD50: > 2,000 mg/kg Species: Rat
Skin Irritation	:	Species: Rabbit Result: Slight Irritation
Eye Irritation:	:	Species: Rabbit Result: Slight Irritation
Genotoxicity in vitro	:	Note: In vitro tests did not show mutagenic effects

Ecological Information

Toxicity to Fish	:	LC50: > 460mg/l Exposure time: 96 h Species: Leuciscus idus (Golden orfe)
Toxicity to daphnia and other aquatic invertebrates	:	LC50: 423 mg/l Exposure time: 25h Species: Daphnia magna (Water flea)
	:	LC50: 433 mg/l Exposure Time: 50h Species: Daphnia magna (Water flea)
	:	LC50: 292 mg/l Exposure Time: 100 h Species: Daphnia magna (Water flea)

VIII. Other Hazard Information

Environmental Protection:

Appropriate engineering controls: Use ventilation and dust collection to control exposure to below applicable limits.

Recommendations for personal protective measures: Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Any special requirements for PPE:

Eye protection: Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visibly) dusty conditions are present or anticipated.

Skin protection: Use gloves to provide hand protection from abrasion. In dusty conditions wear long sleeve shirt. Wash work clothes after each use.

Respiratory Protection: All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8 hr Time Weighted Average (TWA) of 0.5 mg/m³, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8 hr TWA of 5.0 mg/m³ a positive pressure, full face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

Disposal Information:

Disposal instructions: Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Hazardous waste code: Not regulated

Waste from residues: Disposal recommendations are based on the material as supplied. Disposal must

be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Transport Information:

DOT – not regulated as dangerous goods.

IATA – not regulated as dangerous goods.

IMDG – not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code – not applicable. However, the product is covered under Appendix I of the IMSBC Code.

Regulatory Information:

US federal regulations: This product is not known to be a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are listed on or exempt from the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) – not regulated

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) – not listed

CERCLA Hazardous Substance List (40 CFR 302.4) – not listed

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Immediate hazard – no

Delayed hazard – no

Fire hazard – no

Pressure hazard – no

Reactivity hazard – no

SARA 302 Extremely hazardous substance – not listed

SARA 311/312 Hazardous chemical – no

SARA 313 (TRI reporting) – not regulated

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List – not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) – not regulated

Safe Drinking Water Act – not regulated

Food and Drug – total food additive

Administration (FDA) – direct food additive; GRAS food additive

Other Information:

Further information: HMIS is registered trade and service mark of the NPCA. A HMIS Health rating including an * indicates a chronic hazard.

HMIS ratings: Health: 1

Flammability: 0

Physical Hazard: 0

Abbreviations: LC50: Lethal Concentration, 50%; LD50: Lethal Dose, 50%

IX. Conditions of Sale and Warranty

The directions of use for this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of Groenink's Elevator and Hardware, Inc. or the Seller. All such risks shall be assumed by the Buyer. Groenink's Elevator and Hardware, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in its Direction for Use subject to the inherent risks referred to above. **Groenink's Elevator and Hardware, Inc USA makes no other express or implied Warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall Groenink's Elevator and Hardware, Inc. or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this Product.** Groenink's Elevator and Hardware, Inc. and the Seller offer this product, and the Buyer and user except it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing