Material Safety Data Sheet

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According to:	Regulation (EC) N° 1907/2006 (REACH) Regulation (EC) N° 453/2010 Regulation (EC) N° 1272/2008 (CLP)	

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

1.1 Product identifier

Trade name	GROLEAF 0-40-40 + QPS
EINECS Name/Number	Mixture – therefore not relevant
IUPAC Name	Mixture – therefore not relevant
Molecular formula	Mixture – therefore not relevant

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

Relevant identified uses:	Product is used to supply nutrients to the soil or directly to the plant
Uses advised against:	Not identified

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Product description: : Mixture

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

Classification : No classification

2.2 Label elements

Hazard pictogram (CLP)	:	none
CLP signal word	:	none
Hazard statements (CLP)	:	none
Precautions	:	Avoid eye contact. If in eyes, rinse immediately with an abundant amount of water and contact a doctor/physician.
Additional label elements	:	Not applicable
Packaging requirements	:	Not applicable

2.3 Other hazards:

Substance complies with criteria for PBT according to regulation (EC) nr 1907/2006, annex XIII	Not applicable
Substance complies with criteria for zPzB according to regulation (EC) nr 1907/2006, annex XIII	Not applicable
Other hazards that do not require classification :	In combination with water the product can cause a slippery surface.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Identification	%	Classification according to regulation (EC) nr 1272/2008 (CLP)	Type
Potassium Nitrate	RPN: 01-2119488224-35 EG: 231-818-8 CAS-number: 7757-79-1	< 45	Ox. Sol 3 – H272	[1]
Potassium Sulphate	RPN: 01-2119489441-34-0000 EG: 231-915-5 CAS-nummer: 7778-80-5	< 45	Eye Dam 1 – H318	[1]
Urea Phosphate	RPN:01-2119489460-34 EG: 225-464-3 Cas-nummer: 4861-19-2	< 2	Skin Corr. 1B – H314	[1]

Type:

[1] Substance is classified as a physical, health or environment hazard
[2] Substance with a workplace exposure limit
[3] Substance complies with criteria for PBT according ro regulation (EC) nr 1907/2006 annex XIII
[4] Substance complies with criteria for vPvB according to regulation (EC) nr 1907/2006 annex XIII

Full text of H- and P-phrases mentioned above: see section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

After skin contact: Wash immediately with an abundance of water and soap. If irritation persists, seek medical advice and attention.

After eye contact: Immediately flush eyes with plenty of water (> 15 min), occasionally lifting the upper and lower eyelids. Remove contact lenses if present and easy to do. Continue rinsing.

After ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Give lots of water/milk to drink. Seek medical attention if large amounts were ingested.

After inhalation: Remove to fresh air and keep at rest in a comfortable position.
Respiratory problems: seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

After skin contact: Significant effects or critical dangers are unknown

After inhalation: Exposure to decomposition products can lead to health problems. After exposure, serious effects can have a delayed occurence. Treat symptomatically.

After eye contact: Significant effects or critical dangers are unknown

After ingestion: Significant effects or critical dangers are unknown

4.3 Indication of any immediate medical attention and special treatment needed

Remarks for physician/doctor: Treat symptomatically. Immediately contact a specialist for treatment of poisoning when large amounts were ingested or inhaled. After inhalation of decomposition products produced by a fire, delayed symptoms can occur. Medical surveillance of 48 hours is recommended.

5. FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with an abundance of water
Unsuitable extinguishing media: Do not use extinguishers based on chemicals or foam. Do not put out the fire using steam or sand.

5.2. Special hazards arising from the substance or mixure

Risks of the substance or mixture: Mixture is not flammable but can maintain combustion, even in the abscence of oxygen. When heated, the mixture melts and continuous heating can cause decomposition which releases toxic fumes containing nitrous oxides and ammonia based compounds.

Hazardous decomposition products: Nitrous oxides
Ammonia based compounds
Sulfur oxides
Phosphorus oxides

5.3. Advice for firefighters

Protection during firefighting: Firefighters should wear appropriate protective equipment and selfcontained breathing apparatus with a full face-piece operated in positive pressure mode. Protective clothing contains: appropriate protective gloves, safety mask and goggels and clothing which provides adequate protection for chemical incidents.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

For others than emergency staff: Do not attempt to take action when there is a serious personal hazard or in case of insufficient training. Evacuate the building and surrounding areas. Do not touch spilled material. Wear suitable protection.

For emergency responders: Wear protective gloves, clothing and eye protection. Identify the contaminated area and keep all unprotected persons out.

6.2. Environmental precautions

- Prevent soil and water pollution. Prevent spreading in sewers. Stop leaks if possible.
- If product enters drains/sewers or the environment (soil, streams, rivers, air), inform the associated authorities.

6.3. Methods and materials for containment and cleaning up

- Remove packaging from the contaminated area.
- Any spillage should be cleaned up immediately. Avoid contamination of sewers, streams, soil and contained spaces.
- Collect as much as possible in a suitable clean container. Removal of collected spills must be done by a competent authority.

6.4. Reference to other sections

- See section 1 for emergency contact information
- See section 8 for information on appropriate personal protective equipment
- See section 13 for additional waste treatment

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective precautions:

- Avoid contact with eyes, skin and clothing.
- Do not inhale/ingest.
- Store in original packaging or in approved alternative of compatible material.
- Keep product contained when not in use.
- Do not mix mixture with basic products (pH>7).
- Keep away from heath or source of fire
- Emptied packaging can retain some product and can be hazardous.

Hygiene measures:

- Do not eat, drink or smoke during use.
- Wash hands after handling and using the product
- Remove contaminated clothing before entering an area designated for eating

7.2 Conditions for safe storage, including any incompatibilities

- Store in original packaging, protected from direct sunlight. Keep in a dry, cool and well ventilated area.
- Keep away from heat sources and open flames.
- Keep away from organic materials, oil and grease.
- Keep away from combustible materials and materials mentioned in section 10.5.
- Store in accordance with regional and national regulations.
- Do not eat, drink or smoke in the area where the material is used, stored or processed.
- Product remains stable for 2 years if stored according to all provisions.

7.3 Specific end use(s)

No additional information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

DNEL's/DMEL's

Product name	Type	Exposure	Value	Population	Effects
Potassium Nitrate	DNEL	Long-term Dermal	20.8 mg/kg bw/day	Employees	Systemic
Potassium Nitrate	DNEL	Long-term Inhalation	36.7 mg/m³	Employees	Systemic
Potassium Nitrate	DNEL	Long-term Dermal	12.5 mg/kg	End users	Systemic
Potassium Nitrate	DNEL	Long-term Inhalation	10.9 mg/m³	End users	Systemic
Potassium Nitrate	DNEL	Long-term Oral	12.5 mg/kg bw/day	End users	Systemic
Potassium Sulphate	DNEL	Long-term Dermal	21.3 mg/kg BW/day	Employees	Systemic
Potassium Sulphate	DNEL	Long-term Inhalation	37.6 mg/m³	Employees	Systemic
Potassium Sulphate	DNEL	Long-term Dermal	12.8 mg/kg	End users	Systemic
Potassium Sulphate	DNEL	Long-term Inhalation	11.1 mg/m³	End users	Systemic
Potassium Sulphate	DNEL	Long-term Oral	12.8 mg/kg BW/day	End users	Systemic
Urea Phosphate	DNEL	Long-term Inhalation	2.92 mg/m³	Employees	Systemic
Urea Phsophate	DNEL	Lang-term Inhalation	0.73 mg/m³	End users	Systemic

PNEC's

Product name	Type	Detail compartment	Value	Detail method
Potassium Nitrate	PNEC	Marine	0.045 mg/l	Assessment factors
Potassium Nitrate	PNEC	Intermittent release	4.5 mg/l	Assessment factors
Potassium Nitrate	PNEC	Sewage treatment plant	18 mg/l	Assessment factors
Potassium Nitrate	PNEC	Fresh water	0.45 mg/l	Assessment factors
Potassium Sulphate	PNEC	Marine	0.068 mg/l	Assessment factors
Potassium Sulphate	PNEC	Intermittent release	6.8 mg/l	Assessment factors
Potassium Sulphate	PNEC	Sewage treatment plant	10 mg/l	Assessment factors
Potassium Sulphate	PNEC	Fresh water	0.68 mg/l	Assessment factors

8.2 Exposure controls

Appropriate engineering controls:	If user operations generate dust, use process enclosures, local exhaust ventilation of other controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Personal protective controls:	
Hygiene precautions:	Security shower or eyewashstations must be provided at the workplace.
Eye protection:	If risk assessment concludes the need of protection, use appropriate approved protective equipment (safety glasses, face shield).
Skin protection:	If risk assessment concludes the need of protection, use appropriate approved protective equipment (resistant gloves).
Body protection:	Personal protective equipment must be used according to the activities. Wear protective clothing and impervious footwear.
Respiratory protection:	If risk assessment concludes the need of protection, use appropriate approved protective equipment (respiratory equipment/gas mask).
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Powder/crystalline
Odor:	Odorless
Odor threshold:	No data available
pH solution:	3 - 5 (1 % solution)
Melting point:	No data available
Boiling point:	>210 °C (decomposes)
Flash point:	No data available
Evaporation rate:	No data available
Flammability:	Not flammable
Explosive limits:	No data available
Vapor pressure:	No data available
Relative vapour density:	No data available
Relative density:	0.9 – 1.4
Density:	0.9 – 1.4 kg/liter
Solubility:	Water: complete
n-octanol/water partition coefficient:	No data available
Self ignition temperature:	No data available
Decomposition temperature:	>210 °C
Viscosity:	Not applicable
Exposive properties:	None
Oxidizing properties:	Not applicable

9.2 Other information

No additional information present

10. STABILITY AND REACTIVITY

Product is stable under normal conditions of handling and storage

10.1 Reactivity

- Product is stable under normal conditions of handling and storage

10.2 Chemical stability

- Stable under normal conditions

10.3 Possibility of hazardous reactions

- Product can react heavily with basic substances (pH>7) where temperature increases can occur.

10.4 Conditions to avoid

- Avoid contamination with alkaline substances, combustible materials, reducing agents and organic materials.

10.5 Incompatible materials

- Substance reacts or is incompatible with following materials:
  - Alkaline substances
  - Combustible materials
  - Reducing agents
  - Organic materials

10.6 Hazardous decomposition products

- Under normal conditions of handling and storage, no hazardous components are produced
- With heating or burning: release of toxic and corrosive gases/vapours (Ammonia, Nitrous gases, Phosphorus oxides and Sulphur oxides)

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Hazard class	Value	Method
Acute toxicity		
Oral		
Potassium Nitrate	3750 mg/kg	Rat OECD Guideline 405
Urea Phosphate	2600 mg/kg	Rat
Dermal		
Potassium nitrate	>5000 mg/kg bw/day	Rat OECD 402
Inhalation	No available data	
Skin corrosion/irritation	Significant effects or critical values are unknown.	
Serious eye damage/irritation	Significant effects or critical values are unknown.	
Respiratory or skin sensitation	Significant effects or critical values are unknown.	
Germ cell mutagenicity	Significant effects or critical values are unknown.	
Carcinogenity	Significant effects or critical values are unknown.	
Reproductive toxicity	Significant effects or critical values are unknown.	
Specific target organ toxicity (single exposure)	Significant effects or critical values are unknown.	
Specific target organ toxicity (repeated exposure)	Significant effects or critical values are unknown.	
Aspiration hazard	Significant effects or critical values are unknown.	

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Significant effects or critical values are unknown

Product name	Result	Species	Exposure
Potassium Nitrate	Acute LC50: 1.378 mg/l fresh water OECD 203	pisces	96h
Potassium Nitrate	Acute EC50: 490 mg/l fresh water	Other aquatic organisms. Daphnia	48 h

Potassium Nitrate	Acute EC50: > 1.700 mg/ fresh water	Other aquatic organisms: Algae	240 h
Potassium Sulphate	Acute LC50: 720 mg/l Fresh water	Other aquatic organisms. Daphnia	48 h
Potassium Sulphate	Acute EC50: 2.700 mg/l fresh water	Chlorella vulgaris	18 d
Urea Phosphate	LC50: > 9.100 mg/l fresh water	Pisces	
Urea Phosphate	EC50: > 100 mg/l fresh water	Other aquatic organisms.	48 h
Urea Phosphate	EC50: > 100 mg/l	Other aquatic organisms: Algae	

12.2 Persistence and degradability

Biologically degradable in plants and soil

12.3 Bioaccumulative potential

Significant effects or critical values are unknown

12.4 Mobility in soil

Nitrate-ions are mobile and ammonium-ions are absorbed by soil particles. Phosphate is merely transported over short distances in the soil and are afterwards immobilized. The mobility of potassium-ions is low due to absorption by soil particles. Dissolved magnesium-ions are adsorbed by clay particles in the soil.
Leaching of nutrients into the soil occurs in the abscence of clay particles.

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

Significant effects or critical values are unknown.

13. DISPOSAL CONSIDERATIONS

- Waste production should be avoided and minimized as much as possible.
- Big quantities of rest products can not be disposed through the sewers and need to be processed by an appropriate authority.
- Remove waste in accordance with local and/or national regulations.

14. TRANSPORT INFORMATION

14.1 UN-number

Non-dangerous goods according to ‘United Nations Recommendations on the Transportation of Dangerous Goods’ (UN Orange Book) and according to international transport codes RID (railroad), ADR (road) and IMDG (sea).

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

See section 12

14.6 Special precautions for user

Necessary caution needs to be taken into account when transporting non-hazardous chemicals.

14.7 Transport in bulk accoring to annex II of MARPOL 73/78 and the IBC code

Not applicable

15. REGULATORY INFORMATION

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

15.1.1. EU Regulations

- Regulation (EC) N° 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilizers

15.1.2. National regulations

- Royal Decree of 28/01/2013 regarding the introduction into the market and the use of fertilizers, soil-improving agents and substrates [B.S. 13/03/2013]

15.2 Chemical safety assessment

No chemical safety assessment has been executed.

16. OTHER INFORMATION

16.1 Cause of revision

Compliance to regulation (EC) N° 453/2010.

16.2 Full list of abbreviations and acronyms

BW	Body Weight
CLP	Regulation on classification, labeling and packaging (CLP) of substances and mixtures (Regulation (EC) N° 1272/2008)
DNEL	Derived No-Effect Level
DMEL	Derived Minimal Effect Level
EC50	Concentration which induces a response halfway between the baseline and maximum after a specified exposure time

Eye irrit.2	Eye irritation category 2
GHS	Global regulation for classification and labeling of chemical substances
H272	May intensify fire, oxidizer
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H319	Causes serious eye irritation
LC50	Lethal concentration where 50% of the sample population are killed after a single exposure
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Ox.Sol 3	Oxidizing solids, category 3
Skin corr. 1b	Skin corrosive category 1B
vPvB	Very persistent and very bioaccumulative

16.3 Important references and data

- Information from suppliers (MSDS and technical data sheets)
- 'Bovine Corneal Opacity and Permeability (BCOP) test for test substance GEL Vegetative According to OECD Guideline 437', VITO-ABS, Industriezone VLASMEER7, B2400 Mol

16.4 Procedure used to derive the classification according to Regulation (EC) nr 1272/2008 CLP/ GHS.

Classification: Eye irrit.2, H319; Justification: assessment by expert

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