Material Safety Data Sheet

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Based on: Commission Directive no. 2001/58/EC
Regulation (EC) no. 2003/2003 of European Parliament and of Council
Regulation (EC) no. 885/2004 (adoption for new EU members)

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

1.1 Identification of the Product

Designation	NPK Fertilizer
Trade name	GROGREEN NPK 12-42-12 + TE
CAS Number	Preparation - therefore not relevant
EINECS Name/Number	Preparation - therefore not relevant
IUPAC Name	Preparation - therefore not relevant
Molecular formula	Preparation - therefore not relevant

1.2 Application of the Product

Primary use	Water soluble NPK fertilizer for fertigation and foliar application

1.3 Company

Produced and Exported by:

LIMA EUROPE NV
Doelhaagstraat 77/1
B-2840 Rumst – Belgium

Telephone N°: +32-3-844-73-70
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1.4 Emergency calls

LIMA EUROPE NV	+32-3-844-73-70
Health Emergencies	Contact your local Poison Center

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1 Nature of ingredients and concentration

Mixtures contain potassium nitrate and some of the following ingredients: urea, phosphates, other nitrates, and secondary nutrients.

2.2 classification

Not classed as hazardous material according to EC Directive 1999/45/EG and modification by 2001/60/EG.

3. HAZARDS IDENTIFICATION

3.1 Human health

The product is basically harmless when handled correctly. However, the following points should be noted.

Skin Contact:	Prolonged contact may cause some irritation.
Eye Contact:	May cause irritation following contact.
Ingestion:	Small quantities are unlikely to cause toxic effect. Large quantities may give rise to gastro-intestinal disorders in extreme cases (particularly in children) formation of methaemoglobin ('Blue baby' syndrome) and cyanosis (indicated by blueness around the mouth) may occur.
Inhalation:	High dust concentrations of air-borne material may cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and coughing.
Long term effects:	No adverse effects are known.
Fire and thermal decomposition products:	Molten material will cause burns and inhalation of decomposition gases can cause irritation and corrosive effects on the respiratory system. Some lung effects may be delayed.

3.2 Environment

As this fertilizer contains nitrate and phosphate, heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination of ground or surface water. (See Section 12).

3.3 Other

Fire, heating and detonation:

- The fertilizers are not themselves combustible but, they can support combustion even in the absence of air. When strongly heated, they melt and decompose.
- Heating of fertilizers under strong confinement (e.g. in tubes or drains) may lead to a violent reaction or explosion especially if there is contamination by some of the substances mentioned in 10.3.
- On decomposition, water vapor and toxic gases such as nitrogen oxides and ammonia may be given off.

4. FIRST AID MEASURES

4.1 Product

Skin Contact: Wash the affected area with soap and water. Get medical aid if irritation persists or develops.
Eye Contact: Flush/irrigate eye, including under the lids, with copious amounts of water for at least 10 minutes.
Obtain medical attention if eyes irritation persists.
Ingestion: Do not induce vomiting. Give water or milk to drink.
Obtain medical attention if more than a small quantity has been swallowed.
Inhalation: Remove victim to fresh air immediately. Keep warm and at rest.
Obtain medical attention if ill effects occur.

4.2 Fire and decomposition products

Skin Contact: Wash areas in contact with molten material copiously with cold water.
Obtain medical attention.
Inhalation: Remove from the source of exposure to fumes.
Keep warm and at rest.
Give oxygen, especially if the person is blue in the face.
Artificial respiration should only be applied if breathing fails.

5. FIRE-FIGHTING MEASURES

- There are no fire and explosion hazards. The fertilizer is a non-flammable substance, but will support combustion.
- If the fertilizer is involved in the fire, call the fire brigade.
- Avoid breathing the fumes (toxic). Stand up-wind of the fire.
- Wear protective clothing and use a self-contained breathing apparatus.
- Use plenty of water. Open doors and windows of the store to give maximum ventilation.
- Do not use chemical extinguishers or foams or attempt to smother the Fire with steam or sand.

6. ACCIDENTAL RELEASE MEASURES

- Keep away from combustible and reducing agents.
- Any spillage of fertilizer should be cleaned up promptly, swept up and placed in a clean labeled open container for safe disposal.
- Do not allow to mix with sawdust and other combustible or organic substances.
- Take care to avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses. Material is non-toxic to aquatic organisms but could cause undesirable aquatic growth.

7. HANDLING AND STORAGE

7.1 Handling

- Avoid excessive generation of dust.
- Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up.
- Wear gloves when handling the product over long periods.

7.2 Storage

- Locate away from the source of heat or fire.
- Keep away from combustible materials and substances mentioned under Section 10.3.
- Ensure high standard of housekeeping in the storage area.
- Do not permit smoking and the use of naked lights in the storage areas.
- Restrict stack size (according to local regulations) and keep at least 1m distance around stacks of bagged products.
- Any building used for the storage should be dry and well ventilated.
- Product is stable for at least 2 years if stored according to the directives.
- Store away from children, pets, livestock and foodstuff

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values

- Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

8.2 Exposure controls

- Avoid high dust concentration and provide ventilation where necessary.

8.2.1 Occupational exposure controls

8.2.1.1 Respiratory protection

- Use suitable dust respirator if dust concentration is high.

8.2.1.2 Hand protection

- Wear suitable gloves when handling the product over long periods.

8.2.1.3 Eye protection

- After handling product, wash hands and observe good hygiene practice.

8.2.1.4 Skin protection

- It is not necessary to protect another part of the body other than the hands. No additional skin protection measures and specific hygiene measures need to be taken.

8.2.2 Environmental exposure controls

Take care to avoid contamination of watercourses and drains. Inform the appropriate water authority in the event of accidental watercourse contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information

Appearance	White, grey crystalline powder, unless deliberately colored during manufacture.
Odor	Odorless.

9.2 Important health, safety and environmental information.

pH water solution (100g/l)	Usually > 3.0

9.3 Other information

Melting point	Depends on composition. May decompose before melting.
Boiling point	> 210°C (decomposes).
Oxidizing properties	Products with high nitrate content can support combustion. Not classed as an oxidizing material according to Directive 1999/45/EG.
Corrosive level	Non-corrosive
	Not explosive as per EEC test A14 (67/548/EEC). The fertilizer has a high resistance to detonation. This resistance is decreased by the presence of contaminants and/or high temperatures. Heating under strong confinement (e.g. in tubes or drains) may lead to a violent reaction or explosion especially if there is contamination by some of substances mentioned under Section 10.3.
Bulk density	Normally between 900-1200kg/m^3
Solubility in water	Completely soluble in water.

10. STABILITY AND REACTIVITY

The product is stable under normal conditions of storage, handling and use.

10.1 Conditions to avoid

- Contamination by incompatible materials (see section10.3).
- Unnecessary exposure to the atmosphere.
- Closeness to sources of heat or fire.
- Welding or hot work on equipment or plant which may have contained fertilizer without first washing thoroughly to remove all fertilizer.

10.2 Materials to avoid

Combustible and flammable materials, reducing agents, acids, alkalies, chlorates, chlorides, chromates, nitrites, permanganates, calcium disilicide, sodium phosphinate, sodium thiosulphate, sodium acetate, sodium or calcium hypochloride, thorium carbide, metallic powders and substances containing metals such as copper, nickel, cobalt, zinc and their alloys.

10.3 Hazardous reactions/decomposition products

When in contact with alkaline materials may give off ammonia gas. (See Sections 3.3 and 9)

11. TOXICOLOGICAL INFORMATION

11.1 General

See Section 3.1. (Not on any carcinogenicity list).

11.2 Toxicity Data

Product toxicity would depend on the composition.

• Potassium Nitrate	LD_{50} (oral, rabbit)	1666-2298 mg/kg
• Mono ammonium phosphate	LD_{50} (oral, rat)	> 2000 mg/kg
• Urea	LD_{50} (oral, rat)	> 2000 mg/kg

11.3 Other effects

Levels of nitrate ion exceeding 45 mg/L in drinking water have been reported to cause methemoglobinemia in infants.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Low toxicity to aquatic life.

12.2 Mobility

The NO_3^- ion is mobile; the NH_4^+ ion is adsorbed by soil particles. Phosphates, whether water or citrate soluble, are translocated in the soil only over very short distances and are then immobilized. The dissolved K^+ ion in the soil solution is adsorbed by clay minerals; only in light soils where these are absent can part of the potassium be leached. The same applies to the Mg^{2+} and Ca^{2+} ion, if present.

12.3 Persistence/Degradability

- The nitrogen follows the natural nitrification/denitrification cycle to give nitrogen or nitrogen oxides.
- Phosphates are converted to calcium or iron/aluminum phosphates, or are incorporated into the organic soil matter.
- Potassium is mainly adsorbed by clay minerals, or remains as K+ in the soil solution.

12.4 Bio-accumulation

The product does not show any bio-accumulation phenomena.

13. DISPOSAL CONSIDERATIONS

Depending on degree of contamination, dispose of by use as fertilizer on farm or bring to an authorized waste facility. Take care to avoid the contamination of watercourses and drains. Inform the appropriate water authority in the event of accidental watercourse contamination.

14. TRANSPORT INFORMATION

14.1 UN classification

Not classified i.e. considered non-hazardous material according to the United Nations Recommendations on the Transportation of Dangerous Goods (UN Orange Book) and international transport codes e.g. RID (rail), ADR (road) and IMDG (sea).

15. REGULATORY INFORMATION

15.1 EEC Directives

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

16. OTHER INFORMATION

The information in this safety data sheet is given in good faith and belief in its accuracy based on our knowledge of the substance/preparation concerned at the date of publication. It does not imply the acceptance of any legal liability or responsibility whatsoever by the Company for the consequences of its use or misuse in any particular circumstances.

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