

Safety Data Sheet

Issue Date 18-Dec-2013

Revision Date 10-Oct-2019

Version: 3

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name Sierraform GT K-Step 6-0-27+2MgO+TE
Product Code: 41020120DB
Pure substance/mixture Mixture.

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

Recommended Use Fertilizer (PC12). Restricted to professional users.
Uses Advised Against: Consumer use [SU 21].

1.3. Details of the supplier of the safety data sheet

Everris International B.V. Nijverheidsweg 1-5; 6422 PD Heerlen (NL); Tel: +31 (0)45-5609100; Fax: +31 (0)45-5609190.

For further information, please contact: INFO-MSDS@EVERRIS.COM.

1.4. Emergency telephone number: IN CASE OF AN EMERGENCY CALL: +44 1235 239 670 (24h).

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Mixture

Regulation (EC) No 1272/2008 (CLP)

Eye Irritation	Category 1 - (H318)
Chronic aquatic toxicity	Category 3 - (H412)

2.2. Label elements



Signal Word: Danger

Hazard Statements:

H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects

Contains Iron sulphate; FeSO₄+1H₂O, Potassium sulphate; K₂SO₄

Precautionary Statements:

P280 - Wear eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Other hazards (UN-GHS)

H316 - Causes mild skin irritation

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	EC-No.	CAS No	Weight %	Classification according Regulation (EC) 1272/2008 [CLP]	REACH registration number
Potassium sulphate; K ₂ SO ₄	231-915-5	7778-80-5	40 - 65%	Eye Dam. 1 (H318)	01-2119489441-34
Iron sulphate; FeSO ₄ +1H ₂ O	231-753-5	7720-78-7	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302)	01-2119513203-57
Manganese sulphate; MnSO ₄ +1H ₂ O	232-08-99	7785-87-7	0.1 - 1%	STOT RE 2 (H373) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411)	01-2119456624-35
Copper sulphate anhydrous; CuSO ₄	231-847-6	7758-98-7	0.1 - 1%	Eye Dam. 1 (H318) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119520566-40

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice:

First aid measures should be executed by trained personnel only.

Inhalation

In case of shortness of breath, give oxygen. Possible symptoms are coughing and/or dyspnoea. Move to fresh air. If symptoms persist, call a physician.

Skin Contact:

If a person feels unwell or symptoms of skin irritation appear, consult a physician.

Eye Contact:

Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

Ingestion:

Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. In case of respiratory difficulties practice oxygenotherapy. Possible symptoms are nausea and/or vomiting.

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

None under normal processing

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

None under normal processing.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media:

Coordinate fire extinguishing measures to fire in surrounding area. Use dry chemical, CO₂, water spray or "alcohol" foam.

Unsuitable Extinguishing Media:

High volume water jet.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Advice for firefighters

Use extinguishing agent suitable for type of surrounding fire. In the event of fire and/or explosion do not breathe fumes. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions: Avoid dust formation. Ensure adequate ventilation.
For Emergency Responders: Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent product from entering drains. Do not contaminate surface water.

6.3. Methods and material for containment and cleaning up

Methods for Containment: Prevent further leakage or spillage if safe to do so.
Methods for Cleanup: Shovel or sweep up. Use up product completely. Packaging material is industrial waste.

6.4. Reference to other sections

§ 8, 12, 13.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

General hygiene considerations: Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. When using, do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/storage conditions: Keep away from heat and sources of ignition. Keep away from food, drink and animal feeding stuffs. For quality reasons: Keep out of reach of direct sunlight, store under dry conditions, partly used packaging should be closed well. Keep at temperatures between 0 °C and 40 °C.

Packaging Materials: Store in original container. Store in a closed container.
 LGK (Germany) 13

7.3. Specific end use(s)

Specific use(s): Fertilizer; www.everris.com; Read and follow label instructions
 Exposure scenario: Mixture. Not required.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

<i>Potassium sulphate; K₂SO₄</i>	
Bulgaria - OEL- TWAs	10.0 mg/m ³ TWA
Latvia - OEL - TWAs	10 mg/m ³ TWA
<i>Iron sulphate; FeSO₄·1H₂O</i>	
Belgium - 8 Hr TWA	1 mg/m ³
Denmark	TWA: 1 mg/m ³
Finland	TWA: 1 mg/m ³
Ireland	TWA: 1 mg/m ³ STEL: 2 mg/m ³
Norway	TWA: 1 mg/m ³ STEL: 2 mg/m ³
Portugal	TWA: 1 mg/m ³
Spain - Valores Limite Ambientales - VLE	TWA: 1 mg/m ³
Switzerland	TWA: 1 mg/m ³
UK EH40 WEL (8h)	LTEL (8 hr TWA) 1 mg/m ³ STEL (15 min) 2mg/m ³
<i>Manganese sulphate; MnSO₄·1H₂O</i>	
Austria	STEL 2 mg/m ³ TWA: 0.5 mg/m ³
Australia	0.2 mg/m ³
Belgium - 8 Hr TWA	0.2 mg/m ³
Denmark	TWA: 0.2 mg/m ³
Finland	TWA: 0.02 mg/m ³ TWA: 0.2 mg/m ³
Ireland	TWA: 0.2 mg/m ³

	STEL: 0.6 mg/m ³
Japan	0.2 mg/m ³ OEL Mn
NL MAC - TWA:	STEL: 0.05 mg/m ³ TWA: 0.2 mg/m ³
Norway	TWA: 0.1 mg/m ³ STEL: 0.1 ppm
Poland	TWA: 0.05 mg/m ³
Portugal	TWA: 0.2 mg/m ³
Spain - Valores Limite Ambientales - VLE	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
Switzerland	TWA: 0.5 mg/m ³
UK EH40 WEL (8h)	5 mg/m ³
<i>Copper sulphate anhydrous; CuSO₄</i>	
Austria	STEL 4 mg/m ³ TWA: 1 mg/m ³
Australia	N.A.
Finland	TWA: 0.02 mg/m ³
Poland	TWA: 0.2 mg/m ³
Russia TWA	0.5 mg/m ³ TWA 1258
Switzerland	STEL: 0.2 mg/m ³ TWA: 0.1 mg/m ³

Derived No Effect Level (DNEL)

Component	Oral	Dermal	Inhalation
Potassium sulphate; K ₂ SO ₄ 7778-80-5 (40 - 65%)		21.3 mg/kg bw/day	37.6 mg/m ³
Manganese sulphate; MnSO ₄ +1H ₂ O 7785-87-7 (0.1 - 1%)	37.6 mg/m ³	0.004 mg/kg bw/day	0.2 mg/m ³

Predicted No Effect Concentration (PNEC)

No data available

Component	Fresh Water	Freshwater sediment	Sea Water	Sea sediment	Soil	Impact on Sewage Treatment
Potassium sulphate; K ₂ SO ₄ 7778-80-5 (40 - 65%)	0.68 mg/l		0.068 mg/l			10 mg/l
Manganese sulphate; MnSO ₄ +1H ₂ O 7785-87-7 (0.1 - 1%)	0.013 mg/l	0.011 mg/kg	0 mg/l	0.001 mg/kg	25.1 mg/kg	25.1 mg/kg
Copper sulphate anhydrous; CuSO ₄ 7758-98-7 (0.1 - 1%)	7.8 µg/l	87 mg/kg	5.2 µg/l	676 mg/kg	65 mg/kg	230 µg/l

8.2. Exposure controls**Personal protective equipment****Eye/Face Protection**

Tightly fitting safety goggles

Hand protection

Nitrile rubber (0.26 mm). Break through time. > 8 h.

Respiratory Protection

No personal respiratory protective equipment normally required

Skin and body protection:

Usual safety precautions while handling the product will provide adequate protection against this potential effect

Hygiene Measures:

Follow good housekeeping practices. When using, do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties****Physical State:**

Solid

Appearance:

granulate

Color:

grey, brown.

Odor:	None
Bulk density:	800 - 1100 kg/m ³ no data available
Melting Point/Freezing Point:	No data available
Boiling Point/Range:	Solid. Not applicable.
Flash Point:	Solid. Not applicable.
Evaporation Rate:	Solid. Not applicable.
Flammability (solid, gas):	Not flammable
Vapor Pressure:	Solid. Not applicable.
Vapour density	Solid. Not applicable.
Relative density	No data available
Water Solubility:	No data available
Solubility(ies)	No data available
Partition Coefficient:	Solid. Not applicable.
Autoignition Temperature:	No data available
Decomposition temperature:	No data available
Explosive Properties:	Doesn't present explosion hazard.
<u>9.2. Other information</u>	
VOC Content (%):	Solid. Not applicable.

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Not reactive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Keep away from catalysts like derivatives of hexavalent chromium and metal halides. Keep away from flammable products (fuels) like charcoal, wood, flour, soot etc.

10.6. Hazardous decomposition products

None under normal processing. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

If this product is a mixture, the classification is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. More detailed substance and/or ingredient information may be provided in the other sections of this SDS

Information on the Likely Routes of Exposure (inhalation, ingestion, skin and eye contact):

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin Contact	May cause irritation.
Ingestion	May cause gastrointestinal discomfort if consumed in large amounts.

Information on Toxicological Effects

None known

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral): 8,065.00 mg/kg

Unknown Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

Potassium sulphate; K₂SO₄ (7778-80-5)

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium sulphate; K ₂ SO ₄	= 6600 mg/kg (Rat)	> 2000 mg/kg (Rat)	N.E.
Iron sulphate; FeSO ₄ +1H ₂ O	= 500 mg/kg (Rat)	= 155 mg/kg (Rat)	
Manganese sulphate; MnSO ₄ +1H ₂ O	= 2125 mg/kg (Rat)		> 4.98 mg/L (Rat) 4h
Copper sulphate anhydrous; CuSO ₄	= 300 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure:

If this product is a mixture, the classification is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. More detailed substance and/or ingredient information may be provided in the other sections of this SDS

Serious eye damage/eye irritation Classification based on individual ingredients of the mixture.

Respiratory or skin sensitization Classification based on individual ingredients of the mixture.

Germ Cell Mutagenicity Classification based on individual ingredients of the mixture.

Carcinogenicity Classification based on individual ingredients of the mixture.

Reproductive Toxicity Classification based on individual ingredients of the mixture.

STOT - Single Exposure Classification based on individual ingredients of the mixture.

STOT - Repeated Exposure Classification based on individual ingredients of the mixture.

Aspiration Hazard Classification based on individual ingredients of the mixture.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity

Unknown Aquatic Toxicity

Should not be released into the environment
17% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Potassium sulphate; K ₂ SO ₄	2900: 72 h Desmodesmus subspicatus mg/L EC50	653: 96 h Lepomis macrochirus mg/L LC50 3550: 96 h Lepomis macrochirus mg/L LC50 static 510 - 880: 96 h Pimephales promelas mg/L LC50 static	-	890: 48 h Daphnia magna mg/L EC50
Iron sulphate; FeSO ₄ +1H ₂ O	-	925: 96 h Poecilia reticulata mg/L LC50 static 0.56: 96 h Cyprinus carpio mg/L LC50 semi-static	-	152: 48 h Daphnia magna mg/L EC50 6.15 - 9.26: 48 h Daphnia magna mg/L EC50 Static
Copper sulphate anhydrous; CuSO ₄	-	0.1: 96 h Oncorhynchus mykiss mg/L LC50	-	0.024: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

Persistence and Degradability:

No persistent or cumulative effects were observed.

12.3. Bioaccumulative potential

Bioaccumulation:

Does not bioaccumulate.

<u>12.4. Mobility in soil</u>	No data available.
<u>12.5. PBT and vPvB assessment</u>	No data available.
<u>12.6. Other adverse effects</u>	No data available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal of Wastes:	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging:	Do not reuse container.
Other Information	Use up product completely. Packaging material is industrial waste.

Section 14: TRANSPORT INFORMATION

IMO / IMDG

<u>14.1</u>	
UN-No:	Not regulated
<u>14.2</u>	
Proper shipping name:	Not regulated
<u>14.3</u>	
Hazard Class:	Not regulated
<u>14.4</u>	
Packing group:	Not regulated
<u>14.5</u>	

Chemical Name	IMDG - Marine Pollutants
Copper sulphate anhydrous; CuSO ₄ 7758-98-7 (0.1 - 1%)	IMDG regulated marine pollutant (Listed in the index, listed under Copper sulphate, anhydrous, hydrates and solution)

Marine Pollutant: No information available

<u>14.6</u>	
Special Provisions	None

14.7
Bulk transport according Annex II of MARPOL and IBC Code No data available

ADR/RID

<u>14.1</u>	
UN-No:	Not regulated
<u>14.2</u>	
Proper shipping name:	Not regulated
<u>14.3</u>	
Hazard Class:	Not regulated
<u>14.4</u>	
Packing group:	Not regulated
<u>14.5</u>	
Environmental Hazard	Not regulated
<u>14.6</u>	
Special Provisions	None

IATA

<u>14.1</u>	
UN-No:	Not regulated
<u>14.2</u>	
Proper shipping name:	Not regulated
<u>14.3</u>	
Hazard Class:	Not regulated
<u>14.4</u>	
Packing group:	Not regulated

14.5**Environmental Hazard**

Not regulated

14.6**Special Provisions**

None

Section 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Belgium****Denmark**

Denmark

No data available

France

ICPE

Not regulated

Germany

LGK (Germany)

13

Water Endangering Class (WGK):

1 (Everris classification)

Gefahrstoffverordnung (Germany) TRGS 511

Not regulated

Component	German WGK Section
Potassium sulphate; K ₂ SO ₄ 7778-80-5 (40 - 65%)	1
Iron sulphate; FeSO ₄ +1H ₂ O 7720-78-7 (1 - 5%)	1
Manganese sulphate; MnSO ₄ +1H ₂ O 7785-87-7 (0.1 - 1%)	2
Copper sulphate anhydrous; CuSO ₄ 7758-98-7 (0.1 - 1%)	2

15.2 Chemical safety assessment

Substance(s) usage is covered according to Reach regulation 1907/2006

Take note of Dir. 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work

Section 16: OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

- H302 - Harmful if swallowed
- H318 - Causes serious eye damage
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H373 - May cause damage to organs through prolonged or repeated exposure in contact with skin
- H411 - Toxic to aquatic life with long lasting effects
- H316 - Causes mild skin irritation

Key or legend to abbreviations and acronyms used in the safety data sheet

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

ICAO: International Civil Aviation Organization

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PNEC: Predicted No Effect Concentration

DNEL: Derived No-Effect Level

REACH: Registration, Evaluation, Authorization of Chemicals

CLP: EU-GHS; Classification, Labelling and Packaging

OEL: Occupational Exposure Limit

TWA: Time Weighted Average

ATE: Acute Toxicity Estimate

EUH phrase: CLP (EU) specific hazard statement

LD50: Lethal dose, 50%.

LC50: Lethal concentration, 50%.

SVHC: Substance of Very High Concern.

Classification procedure

- Calculation method
- Expert judgment and weight of evidence determination

Key literature references and sources for data

According to EC Regulation 1907/2006 (Reach), Regulation EU No. 2015/830. Regulation (EC) No 1272/2008 (CLP).

Prepared by

Regulatory Affairs Department (INFO-MSDS@EVERRIS.COM)

Issue Date

18-Dec-2013

Restrictions on use

Restricted to professional users

Reason for revision

*** Indicates changes since the last revision. This version replaces all previous versions

This information contained herein is, to the best of Everris' knowledge and belief, accurate and reliable as of the date of preparation of this document. However, no warranty or guarantee, express or implied, is made as to the accuracy or reliability, and Everris shall not be liable for any loss or damage arising out of the use thereof. No authorization is given or implied to use any patented invention without a license. In addition, Everris shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.