Safety Data Sheet

VEG

SDS (formerly MSDS)

Conforms to HCS 2012 - United States

Date: 21/01/2020

Dutch Direct®

WS NPK 4 - 7 - 25

Section 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Product form:	Mixture.
Trade name:	WS NPK 4 - 7 - 25
Synonyms:	NPK-fertilizer, CLP-classified (H315, H318), containing nitrate.
Group:	Group B2.
1.2. Relevant identified uses of the substance or mixture and uses advised against	
1.2.1. Relevant identified uses	
Main use category:	Professional use.
Use of product:	Fertilizer.
Remark relevant uses	**Consult also the relevant exposure scenario in the appendix**
1.2.2. Uses advised against	
Restrictions on use:	Uses other than the identified purposes are discouraged.
1.3. Safety data sheet supplier details	
18 North 57th Drive Ste #1 Phoenix Az 85043 United States Tel: +1 (844) 388-2434 info@dutchdirect.us	Eurosolids Netherlands P.O. Box 1333 3260 AH Oud-Beijerland - Netherlands T +31 (0) 186 578 888 - F +31 (0) 186 573 452 info@eurosolids.com - www.eurosolids.com
1.4. Emergency telephone number	
In case of emergency contact the national emergency telephone number:	UK and Ireland: 112 or 999

Country	Official advisory body	Address	Emergency number
Ireland (Republic of)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 8379964
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241

Section 2. Hazards identification

2.1. Classification of the substance or mixture	
Classification according to Regulation (EC) No. 1272/2008 [CLP]:	
Skin corrosion/irritation, Category 2	H315.
Serious eye damage/eye irritation, Category 1	H318.
Full text of H statements:	See **Section 16.**
Adverse physicochemical, human health and environmental effects:	
No additional information available.	
2.2. Label elements	
Labelling according to Regulation (EC) No. 1272/2008 [CLP]:	
Hazard pictograms (CLP):	 GHS05
CLP Signal word:	Danger.
Hazardous ingredients:	Potassium sulfate WS.
Hazard statements (CLP):	**H315** - Causes skin irritation. **H318** - Causes serious eye damage.
Precautionary statements (CLP):	**P264** - Wash hands, forearms and face thoroughly after handling. **P280** - Wear protective gloves, protective clothing, eye protection. **P302+P352** - IF ON SKIN: Wash with plenty of water. **P305+P351+P338+P310** - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor. **P332+P313** - If skin irritation occurs: Get medical advice/attention. **P362+P364** - Take off contaminated clothing and wash it before reuse.
2.3. Other hazards	
Other hazards not contributing to the classification:	Spill area may be slippery.
This substance/mixture does not meet the PBT and/or vPvB-criteria of REACH regulation, annex XIII	

Section 3. Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Potassium nitrate	(CAS-No.) 7757-79-1 (EC-No.) 231-818-8 (REACH-no) 01-2119488224-35	< 55	Ox. Sol. 3, H272
Potassium sulfate WS	(CAS-No.) 7778-80-5 (EC-No.) 231-915-5 (REACH-no) 01-2119489441-34	1 - 35	Skin Irrit. 2, H315 Eye Dam. 1, H318
Boric acid Substance listed as REACH Candidate	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2 (REACH-no) 01-2119486683-25	< 1	Repr. 1B, H360FD

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Boric acid	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2 (REACH-no) 01-2119486683-25	(5.5 =<C < 100) Repr. 1B, H360FD

Full text of H-statements: see **Section 16**

Section 4. First aid measures

4.1. Description of first aid measures

First-aid measures general:	In all cases of doubt, or when symptoms persist, seek medical attention.
First-aid measures after inhalation:	Move person to a fresh air area and keep comfortable for breathing. Rinse mouth and nose with water. Respiratory problems: consult a doctor/ medical service.
First-aid measures after skin contact:	Wash with water and soap. Get medical advice if skin irritation persists.

First-aid measures after eye contact:	Immediately flush eyes with plenty of water (> 15min), occasionally lifting the upper and lower eyelids . If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion:	Rinse mouth with water. If victim is conscious and alert, give 2-3 glasses of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Consult a doctor/medical service if you feel unwell.
4.2. Most important symptoms and effects, both acute and delayed	
Symptoms/effects after inhalation:	May cause irritation to the respiratory tract. Exposure to decomposition products may cause a health hazard.
Symptoms/effects after skin contact:	Causes skin irritation.
Symptoms/effects after eye contact:	Corrosion of the eye tissue.
Symptoms/effects after ingestion:	Swallowing large quantities may cause stomach/bowel complications. Symptoms may include: nausea, vomiting, diarrhoea.
4.3. Indication of any immediate medical attention and special treatment needed	
Follow the advices in chapter 4.1. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The product can cause methemoglobinemia. Medical control during 48 hours after exposure is necessary.	

Section 5. Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media:	Use fire extinguishing methods suitable to surrounding conditions. Preferably: water.
Unsuitable extinguishing media:	Do not use foam chemical extinguishers. Don't use steam or sand to extinguish fire.
5.2. Special hazards arising from the substance or mixture	
Fire hazard:	Product is not self-ignitable, but may support combustion.
Explosion hazard:	Specific hazards: In case of fire, there is a potential option of explosion, especially if fertilizers are contaminated by inappropriate (incompatible) chemical substances **(e.g. oils, see Section 10).**
Hazardous decomposition products in case of fire:	On heating/combustion: formation of toxic and corrosive gases/vapours (ammonia, nitrous vapours, phosphorus oxides, potassium oxides, sulfur oxides, carbon monoxide/carbon dioxide).

5.3. Advice for firefighters	
Fire precautionary measures:	Exposure to fire/heat: keep upwind, consider evacuation and have neighbourhood close doors and windows.
Firefighting instructions:	Dilute toxic gases with water spray. Cool tanks/drums with water spray/ move them to a safe area. Take account of environmentally hazardous firefighting water.
Protection during firefighting:	Do not breathe fumes. Fire-fighters should wear appropriate protective equipment and selfcontained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Other information:	On exposure to high temperature, may decompose, releasing toxic gases. If safe to do so prevent the contamination of the fertilizer by oil and other combustible materials.

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
General measures:	Always ensure your own safety first. Ensure adequate air ventilation. Avoid contact with skin and eyes. Avoid raising dust.
6.1.1. For non-emergency personnel	
Protective equipment:	Wear protective gloves/protective clothing/eye protection as adviced in **Section 8**. Dust cloud production: compressed air/oxygen apparatus.
Emergency procedures:	Mark the danger area. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Prevent dust cloud formation, e.g. by wetting. No naked flames.
Measures in case of dust release:	In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.
6.1.2. For emergency responders	
Protective equipment:	See also the information in "For non-emergency personnel".
6.2. Environmental precautions	
Prevent spreading in sewers. Prevent soil and water pollution. Stop leaks if possible.	

6.3. Methods and material for containment and cleaning up	
For containment:	Minimise generation of dust. Stop leaks if possible. Do not let the fertilizer to be mixed up with sawdust and oil lubricants. Dilute collected small fertilizer particles mixing them with inert materials (limestone, dolomite, mineral phosphates, gypsum, sand) or dissolve in water.
Methods for cleaning up:	Collect spillage. Take up mechanically, placing in appropriate containers for recovery or disposal. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information:	Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site.
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 information.	

Section 7. Handling and storage

7.1. Precautions for safe handling	
Additional hazards when processed:	Apply proper cleaning practices. Spillage can be slippery on smooth surface either wet or dry.
Precautions for safe handling:	Avoid raising dust. Use sufficient ventilation. In case of inadequate ventilation wear respiratory protection. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection as adviced in **Section 8**. Protect from moisture.
Hygiene measures:	Always wash hands after handling the product. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.
7.2. Conditions for safe storage, including any incompatibilities	
Technical measures:	Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.
Storage conditions:	Keep preferably in the original container.
Incompatible products:	Store, in a cool, well ventilated place away from incompatible materials. Storage with combustible substances, agents, acids, alkali, sulphur, chlorates, chlorides, chromates, nitrites, permanganates, metal powders and substances containing such materials as copper, nickel, cobalt, zinc and alloys of any of the aforementioned materials is not recommended.

Incompatible materials:	Do not use with copper/aluminium/zinc - risk of corrosion.	
Heat and ignition sources:	**KEEP SUBSTANCE AWAY FROM:**	Ignition sources. heat sources.
Information on mixed storage:	**KEEP SUBSTANCE AWAY FROM:**	Oxidizing agents, combustible materials, organic materials.
Storage area:	Store in dry, cool, well-ventilated area. Avoid unnecessarily exposure to air to prevent absorbtion of moisture. Meet the legal requirements. Keep out of direct sunlight. No open flames, no sparks, and no smoking. The product in 500 kg big bags must be piled in no more than 4 layers. When bigger bags are used, number of layers must not exceed 3. Keep storage piles at least 1 meter from walls, eaves, beams and lighting.	
Special rules on packaging:	Meet the legal requirements. Keep packaging closed when not in use. Do not store in unlabelled containers.	
Packaging materials:	**SUITABLE MATERIAL:**	Polyethylene, polypropylene.
	MATERIAL TO AVOID:	Aluminium, copper, zinc.
PGS7 Fertilizer group:	1.2	
7.3. Specific end use(s)		
Fertilizers. Consult the identified uses in the annex of this MSDS.		

Section 8. Exposure controls/personal protection

8.1. Control parameters	
Potassium nitrate (7757-79-1)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	20.8 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	36.7 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	12.5 mg/kg bodyweight
Long-term - systemic effects, inhalation	10.9 mg/m³
Long-term - systemic effects, dermal	12.5 mg/kg bodyweight/day

Potassium nitrate (7757-79-1)	
PNEC (Water)	
PNEC aqua (freshwater)	0.45 mg/l
PNEC aqua (marine water)	0.045 mg/l
PNEC aqua (intermittent, freshwater)	4.5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	18 mg/l

Boric acid (10043-35-3)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	392 mg/kg bw/day
Long-term - systemic effects, inhalation	8.3 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0.98 mg/kg bodyweight
Long-term - systemic effects,oral	0.98 mg/kg bw/day
Long-term - systemic effects, inhalation	4.15 mg/m³
Long-term - systemic effects, dermal	196 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	2.02 mg/l (expressed as element)
PNEC aqua (marine water)	2.02 mg/l (expressed as element)
PNEC aqua (intermittent, freshwater)	9.1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	1.8 mg/kg dwt
PNEC sediment (marine water)	1.8 mg/kg dwt
PNEC (Soil)	
PNEC soil	5.4 mg/kg dwt (expressed as element)

PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

Potassium sulfate WS (7778-80-5)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	21.3 mg/kg bw/day
Long-term - systemic effects, inhalation	37.6 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	12.8 mg/kg bw/day
Long-term - systemic effects, inhalation	11.1 mg/m³
Long-term - systemic effects, dermal	12.8 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	0.68 mg/l
PNEC aqua (marine water)	0.068 mg/l
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l
Additional information:	Users are advised to consider national Occupational Exposure Limits or other equivalent values.

8.2. Exposure controls		
Appropriate engineering controls:	If user operations generate dust/fog, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Keep container tight closed. Care for eyewashstations at the workplace.	
Personal protective equipment:	Protective clothing:	
	Gloves:	

Personal protective equipment:	Protective goggles:	
	Dust formation: dust mask	
Materials for protective clothing:	GIVE GOOD RESISTANCE:	Rubber, nitrile rubber.
Hand protection:	Wear protective gloves.	
Material selection gloves:	Take advice to your gloves' supplier, Replace damaged gloves.	

Type	**Material**	**Permeation**	**Thickness (mm)**	**Standard**
Reusable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.35	EN-16523-1
Reusable gloves	Natural rubber	6 (> 480 minutes)	0.5	EN-16523-1
Reusable gloves	Chloroprene rubber (CR)	6 (> 480 minutes)	0.5	EN-16523-1

Eye protection:	Tightly fitting safety goggles. Use eye protection according to EN 166, designed to protect against powders and dusts.
Skin and body protection:	Wear suitable protective clothing. Protective clothing (with elastic cuffs and closed neck).
Respiratory protection:	Carry operations in the open air/under local exhaust or at sufficient ventilation to keep airborne levels below recommend/statutory exposure levels. **Dust production:** dust mask with filter type P2
Environmental exposure controls:	Do not allow to enter drains or water courses. See **Section 13** for additional waste treatment information.
Other information:	Use good personal hygiene practices. Regular cleaning of equipment, work area and clothing. Train staff on good practice.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties	
Physical state:	Solid.
Appearance:	Crystalline solid.

Colour:	Refer to product datasheet.
Odour:	Almost odourless.
Odour threshold:	No data available.
pH:	Refer to product datasheet.
Boiling point:	Not applicable.
Flash point:	Not applicable.
Explosive limits:	No data available.
Vapour pressure:	Negligible vapour pressure at ambient conditions.
Density:	kg/m³ Refer to product datasheet.
Solubility:	Soluble in water. Water: Refer to product datasheet.
Log Pow:	No data available.
Auto-ignition temperature:	Not applicable.
Decomposition temperature:	No data available.
Viscosity, kinematic:	Not relevant for a solid.
Explosive properties:	This fertilizer is not explosive and it has high resistance to detonation.
Oxidising properties:	Product is not self-ignitable, but may support combustion.
9.2. Other information	
Minimum ignition energy:	Not applicable.
VOC content:	Not applicable.
Other properties:	Hygroscopic.
Additional information:	Refer to product datasheet.

Section 10. Stability and reactivity

10.1. Reactivity

The product is not considered as reactive.

10.2. Chemical stability

Stable under recommended storage and treatment circumstances.

10.3. Possibility of hazardous reactions

To our knowledge, the product does not present any particular risk, under normal conditions of use.

10.4. Conditions to avoid

Avoid high temperatures. Contamination by incompatible materials. Contamination with combustible materials.
Keep container tightly closed to prevent moisture pick-up.

10.5. Incompatible materials

May be corrosive to some metals. Do not allow to mix with sawdust and other combustible or organic substances. Storage with combustible substances, agents, acids, alkali, sulphur, chlorates, chlorides, chromates, nitrites, permanganates, metal powders and substances containing such materials as copper, nickel, cobalt, zinc and alloys of any of the aforementioned materials is not recommended.

10.6. Hazardous decomposition products

On heating/combustion: formation of toxic and corrosive gases/vapours (ammonia, nitrous vapours, phosphorus oxides, potassium oxides, sulfur oxides, carbon monoxide/carbon dioxide).

Section 11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:	Not classified (Based on available data, the classification criteria are not met) Swallowing large quantities can give complaints to stomach/bowel.

Potassium nitrate (7757-79-1)	
LD50 oral rat	3750 mg/kg OECD Guideline 405
LD50 dermal rat	> 5000 mg/kg bw/day OECD Guideline 402
LC50 inhalation rat (mg/l)	> 0.527 mg/l/4h OECD Guideline 403

Boric acid (10043-35-3)	
LD50 oral rat	> 2600 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral, 15 day(s))
LD50 dermal rabbit	> 2000 mg/kg (FIFRA (40 CFR), 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	> 2.12 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))
Potassium sulfate WS (7778-80-5)	
LD50 oral rat	6600 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	No data available.

Skin corrosion/irritation:	Causes skin irritation. **pH:** Refer to product datasheet.
Serious eye damage/irritation:	Causes serious eye damage. **pH:** Refer to product datasheet.
Respiratory or skin sensitisation:	Not classified (Based on available data, the classification criteria are not met) May cause irritation to respiratory tract at exposure to high concentrations Exposure to decomposition products may cause a health hazard.
Germ cell mutagenicity:	Not classified (The selected raw materials are no reason for classification)
Carcinogenicity:	Not classified (The selected raw materials are no reason for classification)
Reproductive toxicity:	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure:	Not classified (The selected raw materials are no reason for classification)
STOT-repeated exposure:	Not classified (The selected raw materials are no reason for classification)
Inhalation hazard:	Not classified (The selected raw materials are no reason for classification)
Potential adverse human health effects and symptoms:	When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
Other information:	Information on Effects: refer to **Section 4.**

Section 12. Ecological information

12.1. Toxicity	
Ecology - general:	Classification concerning the environment: not applicable.
Ecology - water:	Mild water pollutant (surface water). For Flanders: maximum concentration in drinking water: 50 mg/l (magnesium)(M.B. 28/1/2003). Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC). Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to algae (EC50 (72h) >1000 mg/l). Not harmful to aquatic organisms (EC50 >1000 mg/l). Not harmful to activated sludge. May cause eutrophication.
Potassium nitrate (7757-79-1)	
LC50 fish 1	162 mg/l (96 h; Pisces)
LC50 other aquatic organisms 1	39 mg/l (96 h; Daphnia magna)
EC50 other aquatic organisms 1	200 - 1000 mg/l (Plankton)
LC50 fish 2	1378 mg/l (96 h; Poecilia reticulata)
LC50 other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)
TLM fish 1	3000 mg/l (96 h; Lepomis macrochirus)
TLM fish 2	162 mg/l (96 h; Gambusia affinis)
Threshold limit other aquatic organisms 1	39 mg/l (96 h; Daphnia magna)
Threshold limit other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)
Boric acid (10043-35-3)	
LC50 fish 1	79.7 mg/l (EPA OPPTS 850.1075, 96 h, Pimephales promelas, Static system, Fresh water, Read-across)
ErC50 (algae)	52.4 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, GLP)
Potassium sulfate WS (7778-80-5)	
LC50 fish 1	680 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability		
Group B2		
Persistence and degradability	Preparation based on substances which are readily biodegradable.	
Potassium nitrate (7757-79-1)		
Persistence and degradability	In accordance with column 2 of REACH Annex VII, the ready biodegradability test does not need to be conducted as the substance is inorganic. Will complety dissociate into ions.	
Biochemical oxygen demand (BOD)	Not applicable.	
Chemical oxygen demand (COD)	Not applicable.	
ThOD	Not applicable.	
BOD (% of ThOD)	Not applicable.	
Boric acid (10043-35-3)		
Persistence and degradability	**Biodegradability in soil:**	Not applicable.
	Biodegradability:	Not applicable.
Chemical oxygen demand (COD)	Not applicable.	
ThOD	Not applicable.	
BOD (% of ThOD)	Not applicable.	
Potassium sulfate WS (7778-80-5)		
Persistence and degradability	**Biodegradability:**	Not applicable. In accordance with column 2 of REACH Annex VII, the ready biodegradability test does not need to be conducted as the substance is inorganic.
12.3. Bioaccumulative potential		
Group B2		
Bioaccumulative potential	No bioaccumulation or biomagnifications are expected based on raw material properties (Log Pow < 1).	

Potassium nitrate (7757-79-1)	
Bioaccumulative potential	No bioaccumulation or biomagnifications are expected based on substance properties (Log Pow < 1).
Boric acid (10043-35-3)	
BCF fish 1	< 0.1 l/kg (60 day(s), Oncorhynchus tshawytscha, Flow-through system, Fresh water, Weight of evidence, Fresh weight).
Log Pow	-1.09 (Experimental value, EU Method A.8: Partition Coefficient, 22 °C).
Log Kow	-1.09
Bioaccumulative potential	Not bioaccumulative.
Potassium sulfate WS (7778-80-5)	
Log Pow	Not applicable. Inorganic chemical substance.
Bioaccumulative potential	Not bioaccumulative.
12.4. Mobility in soil	
Group B2	
Ecology - soil	Soluble in water. Low potential for adsorption (based on substance properties).
Potassium nitrate (7757-79-1)	
Ecology - soil	Low potential for adsorption (based on substance properties). Soluble in water.
Boric acid (10043-35-3)	
Ecology - soil	No (test) data on mobility of the substance available. May be harmful to plant growth, blooming and fruit formation.
Potassium sulfate WS (7778-80-5)	
Ecology - soil	Low potential for absorption in soil. Soluble in water.

12.5. Results of PBT and vPvB assessment
Group B2
This product does not meet the PBT- and/or vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects	
Other adverse effects:	May cause eutrophication.
Additional information:	No other effects known.

Section 13. Disposal considerations

13.1. Waste treatment methods	
European List of Waste (LoW) code:	06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13 **Depending on branch of industry and production process, also other EURAL codes may be applicable**
Waste treatment methods:	Do not dispose of waste into sewer. Dispose the product, depending on the degree and type of contamination, either as fertilizer or in an authorized waste disposal site. Empty and rinsed containers can be disposed as non-hazardous material or be returned for recycling.
Product/Packaging disposal recommendations:	Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations.
Additional information:	Hazardous waste according to Directive 2008/98/EC. The generation of waste should be avoided or minimized wherever possible.

Section 14. Transport information

In accordance with ADR / RID / IMDG / IATA / ADN
14.1. UN number
Not regulated for transport.
14.2. UN proper shipping name

Proper Shipping Name:	Not applicable

14.3. Transport hazard class(es)	
Transport hazard class(es):	Not applicable.
14.4. Packing group	
Packing group:	Not applicable.
14.5. Environmental hazards	
Dangerous for the environment:	No.
Other information:	No supplementary information available.
14.6. Special precautions for user	
Special transport precautions:	Ensure that the transport is clean before loading the product.
Transport regulations:	Not subject.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
Not applicable.	

Section 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1. EU-Regulations	
Contains no REACH substances with Annex XVII restrictions. Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: Boric acid (EC 233-139-2, CAS 10043-35-3). Contains no REACH Annex XIV substances.	
VOC content:	Not applicable.
Seveso Information:	Not classified.
15.1.2. National regulations	
Ensure all national/local regulations are observed.	
NFPA 704 Standard System for the Identification of the Hazards of Materials for Emergency Response:	https://www.nfpa.org/codes-andstandards/all-codes-and-standards/list-of-codes-and-standards/detail?code=704

Netherlands	
Waterbezwaarlijkheid:	11 - Weinig schadelijk voor in het water levende organismen.
SZW-lijst van kankerverwekkende stoffen:	None of the components are listed.
SZW-lijst van mutagene stoffen:	None of the components are listed.
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding:	None of the components are listed.
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid:	Boric acid is listed.
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling:	Boric acid is listed.
15.2. Chemical safety assessment	
Chemical safety assessments for substances in this preparation were carried out. See annex for more detailed information. For the following substances of this mixture a chemical safety assessment has been carried out Ammonium nitrate, Potassium nitrate, Potassium pentahydrogen bis (phosphate), Boric acid, Potassium sulfate WS	

Section 16. Other information

Version:	2.0 according to Regulation (EU) 2015/830
Revision date:	21/01/2020
Date of issue:	20/02/2019
Supersedes:	20/02/2019
Indication of changes:	Refer table below.

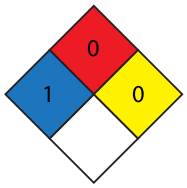
1.2	Restrictions on use	Modified
3	Composition/information on ingredients	Modified
8.2	Respiratory protection	Modified

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road.
DNEL	DNEL = Derived No Effect Level.
CLP	CLP = Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration.
IATA	International Air Transport Association.
IMDG	International Maritime Dangerous Goods.
LC50	Median lethal concentration.
LD50	Median lethal dose.
OECD	Organisation for Economic Co-operation and Development.
PBT	Persistent Bioaccumulative Toxic.
PNEC	PNEC = Predicted No-Effect Concentration.
REACH	REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail.
STP	Sewage treatment plant.
SDS	SDS = Safety Data Sheet.
vPvB	Very Persistent and Very Bioaccumulative.

Data sources:	ECHA Website:	Information on Registered Substances. Information from suppliers. BIG-database. GESTIS Substance Database
Training advice:	Before using/handling the product one must read carefully the MSDS.	

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1.
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2.
Ox. Sol. 3	Oxidising Solids, Category 3.
Repr. 1B	Reproductive toxicity, Category 1B.
Skin Corr. 1B	Skin corrosion/irritation, Category 1B.
Skin Irrit. 2	Skin corrosion/irritation, Category 2.
H272	May intensify fire; oxidiser.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.

NFPA rating:



Company disclaimer

The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.

Safety Data Sheet Annex

Lead substance exposure scenario(s)

Lead substance	ES Type	ES title
Potassium sulfate WS	Worker	Industrial use for formulation of preparations, intermediate use and end-use.
Potassium sulfate WS	Worker	Professional use in formulation of preparations and end-use.

1. Exposure scenario ES 2

Industrial use for formulation of preparations, intermediate use and end-use	**ES Ref.:**	ES 2
	ES Type:	Worker
	Version:	1.0
	Revision date:	06/02/2019
	Date of issue:	06/02/2019
Use descriptors	PROC1, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21, PROC24, PROC26 PC0, PC12, PC20, PC23, PC26, PC27, PC34 ERC2, ERC3, ERC4, ERC5, ERC6a, ERC12b	
Processes, tasks, activities covered	Industrial use.	

2. Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure (PROC1, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21, PROC24, PROC26)	
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.
PROC4	Chemical production where opportunity for exposure arises.

PROC5	Mixing or blending in batch processes.
PROC6	Calendering operations.
PROC7	Industrial spraying.
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing).
PROC13	Treatment of articles by dipping and pouring.
PROC14	Tabletting, compression, extrusion, pelletization, granulation.
PROC15	Use as laboratory reagent.
PROC21	Low energy manipulation and handling of substances bound in/on materials or articles.
PROC24	High (mechanical) energy work-up of substances bound in /on materials and/or articles.
PROC26	Handling of solid inorganic substances at ambient temperature.

Product characteristics	
Physical form of product	Crystalline solid
Concentration of substance in product	<= 100%

Operational conditions	
Frequency and duration of use	> 4 hours/ day
Other given operational conditions affecting workers exposure	indoor

2.1 Contributing scenario controlling worker exposure (PROC1, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21, PROC24, PROC26)	
Technical conditions and measures at process level (source) to prevent release	Containment as appropriate.

Organisational measures to prevent /limit releases, dispersion and exposure	Clean equipment and the work area every day.
	Implement supervision to ensure that the risk management measures are utilized appropriately and that operational conditions are adhered to.
	Minimise manual activities. Minimise the number of staff in the working area. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation	Avoid contact with contaminated tools and objects.
	Use suitable eye protection and gloves.

Other risk management measures:

General good practice for handling and storage of hazardous chemical substances.

2.2 Contributing scenario controlling environmental exposure (ERC2, ERC3, ERC4, ERC5, ERC6a, ERC12b)

ERC2	Formulation into mixture.
ERC3	Formulation into solid matrix.
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article).
ERC5	Use at industrial site leading to inclusion into/onto article.
ERC6a	Use of intermediate.
ERC12b	Processing of articles at industrial sites with high release.
Assessment method	An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.

Product characteristics

No additional information.

Operational conditions

Amounts used.	Not relevant.

Risk Management Measures

No additional information.

3. Exposure estimation and reference to its source

3.1. Health	
Information for contributing exposure scenario	
2.1	Available hazard data do not enable the derivation of a DNEL for eye irritant effects. A qualitative approach was used to conclude safe use for workers. Risk Management Measures are based on qualitative risk characterisation.
3.2. Environment	
Information for contributing exposure scenario	
2.2	As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

4.1. Health	
Guidance - Health	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2. Environment	
Guidance - Environment	As no environmental hazard was identified no environmental-related exposure and risk assessment was performed.

1. Exposure scenario ES 3

Professional use in formulation of preparations and end-use	**ES Ref.:**	ES 3
	ES Type:	Worker
	Version:	1.0
	Revision date:	06/02/2019
	Date of issue:	06/02/2019
Use descriptors	PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19, PROC24, PROC26 PC0, PC12, PC21, PC27, PC35 ERC1, ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC10b, ERC11b	
Processes, tasks, activities covered	Professional use.	

2. Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure (PROC1, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21, PROC24, PROC26)	
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.
PROC4	Chemical production where opportunity for exposure arises.
PROC5	Mixing or blending in batch processes.
PROC6	Calendering operations.
PROC7	Industrial spraying.
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities.
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities.
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing).
PROC13	Treatment of articles by dipping and pouring.

PROC14	Tabletting, compression, extrusion, pelletization, granulation.
PROC15	Use as laboratory reagent.
PROC21	Low energy manipulation and handling of substances bound in/on materials or articles.
PROC24	High (mechanical) energy work-up of substances bound in /on materials and/or articles.
PROC26	Handling of solid inorganic substances at ambient temperature.

Product characteristics	
Physical form of product	Crystalline solid, Aqueous solution.
Concentration of substance in product	<= 100%

Operational conditions	
Frequency and duration of use	> 4 hours/ day
Other given operational conditions affecting workers exposure	Indoor/Outdoor use.

Risk Management Measures	
Technical conditions and measures at process level (source) to prevent release	Containment as appropriate.
Organisational measures to prevent /limit releases, dispersion and exposure	Clean equipment and the work area every day.
	Implement supervision to ensure that the risk management measures are utilized appropriately and that operational conditions are adhered to.
	Minimise manual activities. Minimise the number of staff in the working area. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Conditions and measures related to personal protection, hygiene and health evaluation	Avoidance of contact with contaminated tools and objects.
	Use suitable eye protection and gloves.

Other risk management measures:
General good practice for handling and storage of hazardous chemical substances.

2.2 Contributing scenario controlling environmental exposure (ERC2, ERC3, ERC4, ERC5, ERC6a, ERC12b)	
ERC2	Formulation into mixture.
ERC3	Formulation into solid matrix.
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article).
ERC5	Use at industrial site leading to inclusion into/onto article.
ERC6a	Use of intermediate.
ERC12b	Processing of articles at industrial sites with high release.
Assessment method	An environmental assessment has not been performed as the substance does not meet the criteria for being classified as dangerous for the environment.

Product characteristics
No additional information.

Operational conditions	
Amounts used.	Not relevant.

Risk Management Measures
No additional information.

3. Exposure estimation and reference to its source

3.1. Health	
Information for contributing exposure scenario	
2.1	Available hazard data do not enable the derivation of a DNEL for eye irritant effects. A qualitative approach was used to conclude safe use for workers. Risk Management Measures are based on qualitative risk characterisation.

3.2. Environment	
Information for contributing exposure scenario	
2.2	As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

4.1. Health	
Guidance - Health	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
4.2. Environment	
Guidance - Environment	As no environmental hazard was identified no environmental-related exposure assessment ans risk characterisation was performed.

FORMULA 1 FERTILIZERS

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