

# SAFETY DATA SHEET (SDS)

## Soil test kit, pH, N, P and K

Issue date: 18-03-2020

### Section 1: Product Identifier and Chemical Identity

<b>Product Identifier</b>		
Product Name:	Soil test kit pH, N, P and K	
Product Codes:	ENV5.46	
<b>Other means of identification:</b>		
External product name and code/s:	HI3895	
<b>Manufacturer:</b>		
Hanna Instruments Inc	Hanna Nr 1 457260 loc. Nusfalau Romania Email: msds@hanna.ro	
<b>Suppliers name, address and phone number</b>		
Suppliers Name:	Southern Biological	
Suppliers ABN:	94 630 703 810	
Suppliers Address:	168 Fulham Road Alphington Vic 3078 Australia	
Suppliers Phone No.:	1300 138 561	
Emergency Phone number (BH)	1300 138 561	
<b>Document list:</b>		
<b>Product name</b>	<b>Expiry</b>	<b>Number of pages</b>
Potassium reagent	17/3/25	10
Phosphorus reagent	10/5/25	10
Nitrogen reagent	13/7/25	12
pH reagent	7/3/28	10

## Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Code **HI3895K-0**  
Product name **Potassium Reagent**

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

Intended use **Determination of Potassium in Soil (Extract) Samples.**

#### 1.3. Details of the supplier of the safety data sheet

Name **Hanna Instruments S.R.L.**  
Full address **str. Hanna Nr 1**  
District and Country **457260 loc. Nusfalau (Salaj) Romania**  
Tel. **+40 260607700**  
Fax **+40 260607700**

e-mail address of the competent person responsible for the Safety Data Sheet **msds@hanna.ro**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **Emergency Number - International: +1 7035273887 - UK, London: +44 8708200418 - CHEMTREC 24 hours/365 days**

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 4	H302	Harmful if swallowed.
Acute toxicity, category 4	H332	Harmful if inhaled.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: **Danger**

Hazard statements:

<b>H302+H332</b>	Harmful if swallowed or if inhaled.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H318</b>	Causes serious eye damage.
<b>H315</b>	Causes skin irritation.

### SECTION 2. Hazards identification ... / >>

Precautionary statements:

<b>P280</b>	Wear protective gloves / eye protection / face protection.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P310</b>	Immediately call a POISON CENTER or doctor.
<b>P260</b>	Do not breathe dust, fume, gas, mist, vapours, spray.

**Contains:** EDTA TETRASODIUM SALT  
SODIUM TETRAPHENYLBORATE  
LITHIUM HYDROXIDE

#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

### SECTION 3. Composition/information on ingredients

#### 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>EDTA TETRASODIUM SALT</b>		
CAS	194491-31-1 50 ≤ x < 100	<b>Acute Tox. 4 H302, Acute Tox. 4 H332, STOT RE 2 H373, Eye Dam. 1 H318</b>
EC	200-573-9	
INDEX	607-428-00-2	
<b>SODIUM TETRAPHENYLBORATE</b>		
CAS	143-66-8 1 ≤ x < 5	<b>Acute Tox. 3 H301</b>
EC	205-605-5	
INDEX		
<b>LITHIUM HYDROXIDE</b>		
CAS	1310-66-3 1 ≤ x < 3	<b>Acute Tox. 3 H301, Skin Corr. 1A H314, Eye Dam. 1 H318</b>
EC	215-183-4	
INDEX		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

### SECTION 4. First aid measures

#### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

**INGESTION:** Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

**INHALATION:** Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

##### SODIUM TETRAPHENYLBORATE

Muscular weakness. The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.

##### LITHIUM HYDROXIDE

Irritation and corrosion, Cough, Shortness of breath, Risk of blindness! The following applies to lithium compounds in general: when handled or used inappropriately, the absorption of large quantities is followed by CNS disorders, agitation, spasms, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance.

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

Information not available

## SECTION 5. Firefighting measures

### 5.1. Extinguishing media

#### SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s)

Information not available

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

#### EDTA TETRASODIUM SALT

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	2,2	mg/l
Normal value in marine water	0,22	mg/l
Normal value for water, intermittent release	1,2	mg/l
Normal value of STP microorganisms	43	mg/l
Normal value for the terrestrial compartment	0,72	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation							1,5	VND
							mg/m3	

#### LITHIUM HYDROXIDE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	2,3	mg/l
Normal value in marine water	0,23	mg/l
Normal value for fresh water sediment	9	mg/kg/d
Normal value for marine water sediment	0,9	mg/kg/d
Normal value for water, intermittent release	0,344	mg/l
Normal value of STP microorganisms	79,2	mg/l
Normal value for the terrestrial compartment	0,45	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation					VND	30	VND	10
						mg/m3		mg/m3
Skin					VND	100	VND	41,35
						mg/kg		mg/kg
						bw/d		bw/d

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m<sup>3</sup>; PNOC inhalable fraction: 10 mg/m<sup>3</sup>). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

### SECTION 8. Exposure controls/personal protection ... / >>

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

### SECTION 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	solid powder	
Colour	light blue	
Odour	odourless	
Odour threshold	Not available	
pH	11.5 - 11.8, 10 g/L	
Melting point / freezing point	Not available	
Initial boiling point	Not applicable	
Boiling range	Not available	
Flash point	Not applicable	
Evaporation rate	Not available	
Flammability (solid, gas)	Not available	
Lower inflammability limit	Not available	
Upper inflammability limit	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Vapour pressure	Not available	
Vapour density	Not available	
Relative density	2	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	Not available	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
Viscosity	Not available	
Explosive properties	not applicable	
Oxidising properties	not applicable	

#### 9.2. Other information

Molecular weight	372,828
Total solids (250°C / 482°F)	100,00 %

### SECTION 10. Stability and reactivity

#### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

#### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

#### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

#### LITHIUM HYDROXIDE

Violent reactions possible with: acids.

#### 10.4. Conditions to avoid

Avoid environmental dust build-up.

#### 10.5. Incompatible materials

#### LITHIUM HYDROXIDE

Aluminium, Lead, Zinc, Tin.

### SECTION 10. Stability and reactivity ... / >>

#### 10.6. Hazardous decomposition products

Information not available

### SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

#### 11.1. Information on toxicological effects

##### LITHIUM HYDROXIDE

Acute oral toxicity, absorption, Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach - Acute inhalation toxicity, Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages, damage of respiratory tract, Inhalation may lead to the formation of oedemas in the respiratory tract - Skin irritation, tissue damage, Causes severe burns - Eye irritation, Causes serious eye.

##### Metabolism, toxicokinetics, mechanism of action and other information

Information not available

##### Information on likely routes of exposure

Information not available

##### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

##### Interactive effects

Information not available

##### ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	1,5 mg/l
LD50 (Oral) of the mixture:	525,27 mg/kg
LD50 (Dermal) of the mixture:	Not classified (no significant component)

##### EDTA TETRASODIUM SALT

LD50 (Oral)	630 mg/kg Rat
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##### SODIUM TETRAPHENYLBORATE

LD50 (Oral)	288 mg/kg Rat
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##### LITHIUM HYDROXIDE

LD50 (Oral)	210 mg/kg Rat
LC50 (Inhalation)	> 3,4 mg/l/4h Rat

##### SKIN CORROSION / IRRITATION

Causes skin irritation

##### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

##### RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

##### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

##### CARCINOGENICITY

### SECTION 11. Toxicological information ... / >>

Does not meet the classification criteria for this hazard class

#### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

#### STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

#### STOT - REPEATED EXPOSURE

May cause damage to organs

#### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

### SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

#### 12.1. Toxicity

EDTA TETRASODIUM SALT LC50 - for Fish	1550 mg/l/96h
SODIUM TETRAPHENYLBORATE EC50 - for Crustacea	32 mg/l/48h Daphnia magna
LITHIUM HYDROXIDE LC50 - for Fish	109 mg/l/96h Danio rerio
EC50 - for Crustacea	33,5 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	41,62 mg/l/72h Pseudokirchneriella subcapitata
LC10 for Fish	90 mg/l/96h Danio rerio
Chronic NOEC for Fish	25 mg/l Danio rerio
Chronic NOEC for Crustacea	4 mg/l Daphnia magna

#### 12.2. Persistence and degradability

EDTA TETRASODIUM SALT Solubility in water	> 10000 mg/l
LITHIUM HYDROXIDE Solubility in water	> 10000 mg/l

#### 12.3. Bioaccumulative potential

SODIUM TETRAPHENYLBORATE Partition coefficient: n-octanol/water	6,28 Log Kow
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#### 12.4. Mobility in soil

Information not available

#### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

#### 12.6. Other adverse effects

LITHIUM HYDROXIDE  
Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Neutralisation possible in waste water treatment plants.



### SECTION 13. Disposal considerations

#### 13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

### SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

#### 14.1. UN number

Not applicable

#### 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

Not applicable

#### 14.6. Special precautions for user

Not applicable

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

### SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

### SECTION 15. Regulatory information ... / >>

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)  
WGK 2: Hazard to waters

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

### SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Acute Tox. 3</b>	Acute toxicity, category 3
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>STOT RE 2</b>	Specific target organ toxicity - repeated exposure, category 2
<b>Skin Corr. 1A</b>	Skin corrosion, category 1A
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>H301</b>	Toxic if swallowed.
<b>H302+H332</b>	Harmful if swallowed or if inhaled.
<b>H302</b>	Harmful if swallowed.
<b>H332</b>	Harmful if inhaled.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H315</b>	Causes skin irritation.

#### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

#### GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament

### SECTION 16. Other information ... / >>

10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for evaluation of chemical-physical properties are reported in section 9.

#### Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 08 / 09 / 11 / 15 / 16.

**HI3895P-0 - Phosphorus Reagent****Safety Data Sheet**

According to Annex II to REACH - Regulation 2015/830

**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Code **HI3895P-0**  
Product name **Phosphorus Reagent**

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

Intended use **Determination of Phosphorus in Soil (Extract) Samples.**

**1.3. Details of the supplier of the safety data sheet**

Name **Hanna Instruments S.R.L.**  
Full address **str. Hanna Nr 1**  
District and Country **457260 loc. Nusfalau (Salaj)**  
**Romania**  
Tel. **+40 260607700**  
Fax **+40 260607700**

e-mail address of the competent person responsible for the Safety Data Sheet **msds@hanna.ro**

**1.4. Emergency telephone number**

For urgent inquiries refer to **Emergency Number - International: +1 7035273887 - UK, London: +44 8708200418 - CHEMTREC 24 hours/365 days**

**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 3	H331	Toxic if inhaled.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.

**2.2. Label elements**

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: **Danger**

Hazard statements:

<b>H331</b>	Toxic if inhaled.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>EUH071</b>	Corrosive to the respiratory tract.

Precautionary statements:

<b>P260</b>	Do not breathe dust, fume, gas, mist, vapours, spray.
<b>P280</b>	Wear protective gloves / protective clothing / eye protection / face protection.

**HI3895P-0 - Phosphorus Reagent****SECTION 2. Hazards identification** ... / >>

**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
**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.

**Contains:** POTASSIUM DISULFATE

**2.3. Other hazards**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**SECTION 3. Composition/information on ingredients****3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>POTASSIUM DISULFATE</b>		
CAS	7790-62-7 50 ≤ x < 100	<b>Acute Tox. 3 H331, Skin Corr. 1A H314, Eye Dam. 1 H318, EUH071</b>
EC	232-216-8	
INDEX		
Reg. no.	01-2119987095-26	

The full wording of hazard (H) phrases is given in section 16 of the sheet.

**SECTION 4. First aid measures****4.1. Description of first aid measures**

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

**INGESTION:** Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

**INHALATION:** Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

POTASSIUM DISULFATE

Irritation and corrosion, Cough, Shortness of breath. Risk of blindness!.

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

Information not available

**SECTION 5. Firefighting measures****5.1. Extinguishing media**

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

**5.2. Special hazards arising from the substance or mixture**

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

# HI3895P-0 - Phosphorus Reagent

## SECTION 5. Firefighting measures ... / >>

### POTASSIUM DISULFATE

Not combustible. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: Sulphur oxides.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 6.1A

### 7.3. Specific end use(s)

Information not available

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

## HI3895P-0 - Phosphorus Reagent

### SECTION 8. Exposure controls/personal protection ... / >>

#### POTASSIUM DISULFATE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0,68	mg/l
Normal value in marine water	0,068	mg/l
Normal value for fresh water sediment	2,5	mg/kg/d
Normal value for marine water sediment	0,25	mg/kg/d
Normal value for water, intermittent release	6,8	mg/l
Normal value of STP microorganisms	800	mg/l
Normal value for the terrestrial compartment	0,092	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation							0,13 mg/m3	0,13 mg/m3

#### SODIUM MOLYBDATE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	27,25	mg/l
Normal value in marine water	4,87	mg/l
Normal value for fresh water sediment	48500	mg/kg/d
Normal value for marine water sediment	5058	mg/kg/d
Normal value of STP microorganisms	46,57	mg/l
Normal value for the terrestrial compartment	20,39	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation							VND	23,97 mg/m3

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

### SECTION 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	solid powder	

**HI3895P-0 - Phosphorus Reagent****SECTION 9. Physical and chemical properties** ... / >>

Colour	white
Odour	odourless
Odour threshold	Not available
pH	1.2 - 1.5 pH, 18 g/L
Melting point / freezing point	Not available
Initial boiling point	Not applicable
Boiling range	Not available
Flash point	Not applicable
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	2
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

**9.2. Other information**

Total solids (250°C / 482°F)	100,00 %
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**SECTION 10. Stability and reactivity****10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.

**10.2. Chemical stability**

The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**

The powders are potentially explosive when mixed with air.

**10.4. Conditions to avoid**

Avoid environmental dust build-up.

POTASSIUM DISULFATE  
Exposure to moisture.

**10.5. Incompatible materials**

Information not available

**10.6. Hazardous decomposition products**

Information not available

**SECTION 11. Toxicological information**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**11.1. Information on toxicological effects**



**HI3895P-0 - Phosphorus Reagent****SECTION 11. Toxicological information** ... / >>**POTASSIUM DISULFATE**

Acute inhalation toxicity, absorption, Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages, damage of respiratory tract, Lung oedema, Symptoms may be delayed - Skin irritation (in analogy to similar products), Causes severe burns. - Eye irritation (in analogy to similar products), Causes serious eye damage. Risk of blindness!

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	0,9 mg/l
LD50 (Oral) of the mixture:	Not classified (no significant component)
LD50 (Dermal) of the mixture:	Not classified (no significant component)

Corrosive to the respiratory tract.

**POTASSIUM DISULFATE**

LD50 (Oral)	2140 mg/kg Rat
LC50 (Inhalation)	0,85 mg/l/4h Rat

SKIN CORROSION / IRRITATION

Corrosive for the skin

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**HI3895P-0 - Phosphorus Reagent****SECTION 12. Ecological information**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity**

POTASSIUM DISULFATE	
LC50 - for Fish	680 mg/l/96h Pimephales promelas
EC50 - for Crustacea	720 mg/l/48h Daphnia magna

**12.2. Persistence and degradability**

Information not available

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**12.6. Other adverse effects**

Information not available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

**SECTION 14. Transport information****14.1. UN number**

ADR / RID, IMDG, IATA: 2923

**14.2. UN proper shipping name**

ADR / RID: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

IATA: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

## HI3895P-0 - Phosphorus Reagent

### SECTION 14. Transport information ... / >>

#### 14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8 (6.1)



IMDG: Class: 8 Label: 8 (6.1)



IATA: Class: 8 Label: 8 (6.1)



#### 14.4. Packing group

ADR / RID, IMDG, IATA: II

#### 14.5. Environmental hazards

ADR / RID: NO

IMDG: NO

IATA: NO

#### 14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 86 Special Provision: -	Limited Quantities: 1 kg	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 kg	
IATA:	Cargo: Pass.: Special Instructions:	Maximum quantity: 50 Kg Maximum quantity: 15 Kg A3, A803	Packaging instructions: 863 Packaging instructions: 859

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

### SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: H2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006  
None

Substances in Candidate List (Art. 59 REACH)  
On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)  
None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:  
None

Substances subject to the Rotterdam Convention:  
None

Substances subject to the Stockholm Convention:  
None

Healthcare controls  
Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)  
WGK 1: Low hazard to waters

**HI3895P-0 - Phosphorus Reagent****SECTION 15. Regulatory information** ... / >>**15.2. Chemical safety assessment**

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

**SECTION 16. Other information**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Acute Tox. 3</b>	Acute toxicity, category 3
<b>Skin Corr. 1A</b>	Skin corrosion, category 1A
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>H331</b>	Toxic if inhaled.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>EUH071</b>	Corrosive to the respiratory tract.

**LEGEND:**

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

**GENERAL BIBLIOGRAPHY**

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety

## HI3895P-0 - Phosphorus Reagent

### SECTION 16. Other information ... / >>

- INRS - Fiche Toxicologique (toxicological sheet)- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for evaluation of chemical-physical properties are reported in section 9.

#### Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 09 / 11 / 15 / 16.

## Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Code **HI3895N-0**  
Product name **Nitrogen Reagent**

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

Intended use **Determination of Nitrogen in Soil (Extract) Samples.**

#### 1.3. Details of the supplier of the safety data sheet

Name **Hanna Instruments S.R.L.**  
Full address **str. Hanna Nr 1**  
District and Country **457260 loc. Nusfalau (Salaj)**  
**Romania**  
Tel. **+40 260607700**  
Fax **+40 260607700**

e-mail address of the competent person responsible for the Safety Data Sheet **msds@hanna.ro**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **Emergency Number - International: +1 7035273887 - UK, London: +44 8708200418 - CHEMTREC 24 hours/365 days**

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 3	H331	Toxic if inhaled.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: **Danger**

Hazard statements:

<b>H331</b>	Toxic if inhaled.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H412</b>	Harmful to aquatic life with long lasting effects.
<b>EUH071</b>	Corrosive to the respiratory tract.

### SECTION 2. Hazards identification ... / >>

**Precautionary statements:**

<b>P280</b>	Wear protective gloves / protective clothing / eye protection / face protection.
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P310</b>	Immediately call a POISON CENTER or doctor.
<b>P260</b>	Do not breathe dust, fume, gas, mist, vapours, spray.

**Contains:** POTASSIUM DISULFATE

#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

### SECTION 3. Composition/information on ingredients

#### 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>BARIUM SULFATE</b>		
CAS	7727-43-7    9 ≤ x < 30	<b>Substance with a community workplace exposure limit.</b>
EC	231-784-4	
INDEX		
<b>CITRIC ACID MONOHYDRATE</b>		
CAS	5949-29-1    10 ≤ x < 30	<b>Eye Irrit. 2 H319</b>
EC	201-069-1	
INDEX		
<b>POTASSIUM DISULFATE</b>		
CAS	7790-62-7    9 ≤ x < 17	<b>Acute Tox. 3 H331, Skin Corr. 1A H314, Eye Dam. 1 H318, EUH071</b>
EC	232-216-8	
INDEX		
Reg. no.	01-2119987095-26	
<b>ZINC POWDER STABILIZED</b>		
CAS	7440-66-6    0,5 ≤ x < 1	<b>Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1</b>
EC	231-175-3	
INDEX	030-001-01-9	

The full wording of hazard (H) phrases is given in section 16 of the sheet.

### SECTION 4. First aid measures

#### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

**INGESTION:** Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

**INHALATION:** Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

**CITRIC ACID MONOHYDRATE**  
Irritant effects, Pain, Bloody vomiting.

**POTASSIUM DISULFATE**  
Irritation and corrosion, Cough, Shortness of breath. Risk of blindness!.

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

Information not available

## SECTION 5. Firefighting measures

### 5.1. Extinguishing media

#### SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

#### POTASSIUM DISULFATE

Not combustible. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: Sulphur oxides.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.



### SECTION 7. Handling and storage ... / >>

Storage class TRGS 510 (Germany): 6.1C

#### 7.3. Specific end use(s)

Information not available

### SECTION 8. Exposure controls/personal protection

#### 8.1. Control parameters

Regulatory References:

BEL	Belgique	AR du 11/3/2002. La liste est mise à jour pour 2017
BGR	България	МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г (4 Септември 2018г)
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail en Suisse: valeurs VME/VLE. Version Mars 2018 (SUVA)
DEU	Deutschland	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition,published 2018)
HRV	Hrvatska	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/18)
IRL	Éire	2018 Code of Practice for the Chemical Agents Regulations Safety Authority
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017
ROU	România	HOTĂRÂRE nr. 584 din 2 august 2018 pentru modificarea Hotărârii Guvernului nr. 1.218/2006 privind stabilirea cerințelor minime de securitate și sănătate în muncă pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezența agenților chimici
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

#### BARIUM SULFATE

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
VLEP	BEL	10				
TLV	BGR	10				
MAK	CHE	0,5				Ba
MAK	DEU	1,5			RESP	
VLA	ESP	10				
VLEP	FRA	0,5				Ba
WEL	GBR	10			INHAL	
WEL	GBR	4			RESP	
GVI/KGVI	HRV	10			INHAL	
GVI/KGVI	HRV	4			RESP	
OEL	IRL	2			RESP	
VLEP	ITA	0,5				Ba
TLV	ROU	0,5				Ba
OEL	EU	0,5				Ba
TLV-ACGIH		5				

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0,115	mg/l
Normal value for fresh water sediment	600	mg/kg/d
Normal value of STP microorganisms	62,2	mg/l
Normal value for the terrestrial compartment	207	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	systemic
Inhalation			VND	10		10	10
				mg/m3		mg/m3	mg/m3

### SECTION 8. Exposure controls/personal protection ... / >>

#### CITRIC ACID MONOHYDRATE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0,44	mg/l
Normal value in marine water	0,044	mg/l
Normal value for fresh water sediment	34,6	mg/kg/d
Normal value for marine water sediment	3,46	mg/kg/d
Normal value of STP microorganisms	1000	mg/l
Normal value for the terrestrial compartment	33,1	mg/kg/d

#### POTASSIUM DISULFATE

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0,68	mg/l
Normal value in marine water	0,068	mg/l
Normal value for fresh water sediment	2,5	mg/kg/d
Normal value for marine water sediment	0,25	mg/kg/d
Normal value for water, intermittent release	6,8	mg/l
Normal value of STP microorganisms	800	mg/l
Normal value for the terrestrial compartment	0,092	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation							0,13 mg/m3	0,13 mg/m3

#### ZINC POWDER STABILIZED

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		RESP
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	0,1		0,4		

##### Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0206	mg/l
Normal value in marine water	0,0061	mg/l
Normal value for fresh water sediment	117,8	mg/kg/d
Normal value for marine water sediment	56,5	mg/kg/d
Normal value of STP microorganisms	0,1	mg/l
Normal value for the terrestrial compartment	35,6	mg/kg/d

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	0,83 mg/kg bw/d				
Inhalation			VND	2,5 mg/m3			VND	5 mg/m3
Skin			VND	83 mg/kg bw/d			VND	83 mg/kg bw/d

##### Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.  
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity

### SECTION 8. Exposure controls/personal protection ... / >>

reactions.

#### SKIN PROTECTION

Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

### SECTION 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	powder	
Colour	white	
Odour	odourless	
Odour threshold	Not available	
pH	2 pH - 29 g/L	
Melting point / freezing point	Not available	
Initial boiling point	Not applicable	
Boiling range	Not available	
Flash point	Not applicable	
Evaporation rate	Not available	
Flammability (solid, gas)	Not available	
Lower inflammability limit	Not available	
Upper inflammability limit	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Vapour pressure	Not available	
Vapour density	Not available	
Relative density	1,9	
Solubility	partially soluble in water	
Partition coefficient: n-octanol/water	Not available	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
Viscosity	Not available	
Explosive properties	not applicable	
Oxidising properties	Not available	

#### 9.2. Other information

Total solids (250°C / 482°F)	100,00 %
------------------------------	----------

### SECTION 10. Stability and reactivity

#### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

#### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

#### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

#### CITRIC ACID MONOHYDRATE

Violent reactions possible with: Metals, Oxidizing agents, Bases, Reducing agents.

#### ZINC POWDER STABILIZED

### SECTION 10. Stability and reactivity ... / >>

Risk of explosion on contact with: ammonium nitrate, ammonium sulphide, barium peroxide, lead nitride, chlorates, chromium trioxide, sodium hydroxide solutions, oxidising agents, performic acid, acids, tetrachloromethane, water. May react dangerously with alkali hydroxides, bromine pentafluoride, calcium chloride solution, fluorine, hexachloroethane, nitrobenzene, potassium dioxide, carbon disulphide, silver. Reacts with acids and strong alkalis developing hydrogen.

#### 10.4. Conditions to avoid

Avoid environmental dust build-up.

POTASSIUM DISULFATE  
Exposure to moisture.

#### 10.5. Incompatible materials

CITRIC ACID MONOHYDRATE  
Metals.

ZINC POWDER STABILIZED  
Water, strong alkalis and acids.

#### 10.6. Hazardous decomposition products

Information not available

### SECTION 11. Toxicological information

#### 11.1. Information on toxicological effects

POTASSIUM DISULFATE  
Acute inhalation toxicity, absorption, Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages, damage of respiratory tract, Lung oedema, Symptoms may be delayed - Skin irritation (in analogy to similar products), Causes severe burns. - Eye irritation (in analogy to similar products), Causes serious eye damage. Risk of blindness!

##### Metabolism, toxicokinetics, mechanism of action and other information

Information not available

##### Information on likely routes of exposure

Information not available

##### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

##### Interactive effects

Information not available

##### ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	> 5 mg/l
LD50 (Oral) of the mixture:	Not classified (no significant component)
LD50 (Dermal) of the mixture:	Not classified (no significant component)

Corrosive to the respiratory tract.

POTASSIUM DISULFATE	
LD50 (Oral)	2140 mg/kg Rat
LC50 (Inhalation)	0,85 mg/l/4h Rat

CITRIC ACID MONOHYDRATE	
LD50 (Oral)	3000 mg/kg Rat
LD50 (Dermal)	> 2000 mg/kg

BARIUM SULFATE	
LD50 (Oral)	> 3000 mg/kg Mouse

##### SKIN CORROSION / IRRITATION

### SECTION 11. Toxicological information ... / >>

Corrosive for the skin

#### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

#### RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

#### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

#### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

#### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

#### STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

#### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

#### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

### SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

#### 12.1. Toxicity

##### POTASSIUM DISULFATE

LC50 - for Fish 680 mg/l/96h Pimephales promelas  
EC50 - for Crustacea 720 mg/l/48h Daphnia magna

##### CITRIC ACID MONOHYDRATE

LC50 - for Fish 440 mg/l/96h Leuciscus idus

##### ZINC POWDER STABILIZED

LC50 - for Fish 7,1 mg/l/96h Nothobranchius guentheri  
EC50 - for Crustacea 0,416 mg/l/48h Ceriodaphnia dubia  
EC50 - for Algae / Aquatic Plants 0,015 mg/l/72h Pseudokirchneriella subcapitata  
EC10 for Algae / Aquatic Plants 0,084 mg/l/72h Nitzschia closterium, Diatom, Bacillariaceae  
Chronic NOEC for Fish 0,25 mg/l Salmo trutta  
Chronic NOEC for Crustacea 0,05 mg/l Daphnia magna

#### 12.2. Persistence and degradability

##### CITRIC ACID MONOHYDRATE

Solubility in water > 10000 mg/l  
Rapidly degradable

##### BARIUM SULFATE

Solubility in water 0,1 - 100 mg/l  
Degradability: information not available

### SECTION 12. Ecological information ... / >>

ZINC POWDER STABILIZED  
 Solubility in water 0,1 - 100 mg/l  
 Degradability: information not available

#### 12.3. Bioaccumulative potential

CITRIC ACID MONOHYDRATE  
 Partition coefficient: n-octanol/water -1,64 Log Kow  
 BCF 3,2

#### 12.4. Mobility in soil

Information not available

#### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

#### 12.6. Other adverse effects

CITRIC ACID MONOHYDRATE  
 Harmful effect due to pH shift. Discharge into the environment must be avoided.

### SECTION 13. Disposal considerations

#### 13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.  
 Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.  
 Waste transportation may be subject to ADR restrictions.  
 CONTAMINATED PACKAGING  
 Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

### SECTION 14. Transport information

#### 14.1. UN number

ADR / RID, IMDG, IATA: 2923

#### 14.2. UN proper shipping name

ADR / RID: CORROSIVE SOLID, TOXIC, N.O.S. (Potassium Disulfate mixture)  
 IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (Potassium Disulfate mixture)  
 IATA: CORROSIVE SOLID, TOXIC, N.O.S. (Potassium Disulfate mixture)

#### 14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8 (6.1)



IMDG: Class: 8 Label: 8 (6.1)



IATA: Class: 8 Label: 8 (6.1)



#### 14.4. Packing group

ADR / RID, IMDG, IATA: III

### SECTION 14. Transport information ... / >>

#### 14.5. Environmental hazards

ADR / RID: NO  
IMDG: NO  
IATA: NO

#### 14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 86	Limited Quantities: 5 kg	Tunnel restriction code: (E)
	Special Provision: -		
IMDG:	EMS: F-A, S-B	Limited Quantities: 5 kg	
IATA:	Cargo:	Maximum quantity: 100 Kg	Packaging instructions: 864
	Pass.:	Maximum quantity: 25 Kg	Packaging instructions: 860
	Special Instructions:	A3, A803	

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

### SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: H2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006  
None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 2: Hazard to waters

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

### SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Acute Tox. 3</b>	Acute toxicity, category 3
<b>Skin Corr. 1A</b>	Skin corrosion, category 1A
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Aquatic Acute 1</b>	Hazardous to the aquatic environment, acute toxicity, category 1
<b>Aquatic Chronic 1</b>	Hazardous to the aquatic environment, chronic toxicity, category 1
<b>Aquatic Chronic 3</b>	Hazardous to the aquatic environment, chronic toxicity, category 3
<b>H331</b>	Toxic if inhaled.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.

### SECTION 16. Other information ... / >>

<b>H319</b>	Causes serious eye irritation.
<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.
<b>EUH071</b>	Corrosive to the respiratory tract.

#### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

#### GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the



**SECTION 16. Other information** ... / >>

suitability and thoroughness of provided information according to each specific use of the product. This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 07 / 08 / 09 / 11 / 14 / 15 / 16.

Changed TLVs in section 8.1 for following countries:

IRL,

# Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

## SECTION 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Code	HI3895PH-0
Product name	pH Reagent

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

Intended use	Determination of pH in Soil (Extract) Samples.
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### 1.3. Details of the supplier of the safety data sheet

Name	Hanna Instruments S.R.L.		
Full address	str. Hanna Nr 1		
District and Country	457260	loc. Nusfalau	(Salaj)
		Romania	
	Tel.	+40 260607700	
	Fax	+40 260607700	

e-mail address of the competent person responsible for the Safety Data Sheet	msds@hanna.ro
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### 1.4. Emergency telephone number

For urgent inquiries refer to	International: +1 7035273887 - UK, London: +44 2038073798 - CHEMTREC 24 hours/365 days
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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification and indication: --

### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --

Signal words: --

Hazard statements:	
EUH210	Safety data sheet available on request.

Precautionary statements: --

### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration  $\geq$  0.1%.

## SECTION 3. Composition/information on ingredients

### SECTION 3. Composition/information on ingredients ... / >>

#### 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
BARIUM SULFATE INDEX EC 231-784-4 CAS 7727-43-7	30 ≤ x < 50	Substance with a community workplace exposure limit.
CALCIUM CHLORIDE INDEX 017-013-00-2 EC 233-140-8 CAS 10035-04-8 REACH Reg. 01-2119494219-28	1 ≤ x < 5	Eye Irrit. 2 H319

The full wording of hazard (H) phrases is given in section 16 of the sheet.

### SECTION 4. First aid measures

#### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.  
**SKIN:** Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.  
**INHALATION:** Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.  
**INGESTION:** Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

**CALCIUM CHLORIDE**  
Irritant effects, Stomach/intestinal disorders.

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

Information not available

### SECTION 5. Firefighting measures

#### 5.1. Extinguishing media

**SUITABLE EXTINGUISHING EQUIPMENT**  
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.  
**UNSUITABLE EXTINGUISHING EQUIPMENT**  
None in particular.

#### 5.2. Special hazards arising from the substance or mixture

**HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**  
Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

#### 5.3. Advice for firefighters

**GENERAL INFORMATION**  
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.  
**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS**  
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.  
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.  
Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s)

Information not available

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory References:

BEL	Belgique	Liste de valeurs limites d'exposition aux agents chimiques, livre VI du code du bien-être au travail
BGR	България	НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. ЗА ЗАЩИТА НА РАБОТЕЩИТЕ ОТ РИСКОВЕ, СВЪРЗАНИ С ЕКСПОЗИЦИЯ НА ХИМИЧНИ АГЕНТИ ПРИ РАБОТА (изм. ДВ. бр.5 от 17 Януари 2020г.)
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail: VME/VLE (SUVA). Grenzwerte am Arbeitsplatz: MAK (SUVA)
CZE	Česká Republika	Nařízení vlády č. 41/2020 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
IRL	Éire	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)

SECTION 8. Exposure controls/personal protection ... / >>

EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2021

BARIUM SULFATE

Threshold Limit Value		TWA/8h		STEL/15min		Remarks / Observations		
Type	Country	mg/m3	ppm	mg/m3	ppm			
VLEP	BEL	10						
TLV	BGR	10						
MAK	CHE	0,5						Ba
MAK	DEU	1,5				RESP		
VLA	ESP	10						
VLEP	FRA	0,5						Ba
GVI/KGVI	HRV	10				INHAL		
GVI/KGVI	HRV	4				RESP		
VLEP	ITA	0,5						Ba
OELV	IRL	2				RESP		
TLV	ROU	0,5						Ba
WEL	GBR	10				INHAL		
WEL	GBR	4				RESP		
OEL	EU	0,5						Ba
TLV-ACGIH		5						

  

Predicted no-effect concentration - PNEC			
Normal value in fresh water		0,115	mg/l
Normal value for fresh water sediment		600	mg/kg/d
Normal value of STP microorganisms		62,2	mg/l
Normal value for the terrestrial compartment		207	mg/kg/d

  

Health - Derived no-effect level - DNEL / DMEL		Effects on consumers		Chronic		Effects on workers		Chronic	
Route of exposure	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic	systemic
Inhalation			VND	10			10	10	
				mg/m3			mg/m3	mg/m3	

CALCIUM CHLORIDE

Threshold Limit Value		TWA/8h		STEL/15min		Remarks / Observations		
Type	Country	mg/m3	ppm	mg/m3	ppm			
TLV	CZE	2		4				

  

Health - Derived no-effect level - DNEL / DMEL		Effects on consumers		Chronic		Effects on workers		Chronic	
Route of exposure	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic	systemic
Inhalation	5	VND	2,5	VND	10	VND	5	VND	
	mg/m3		mg/m3		mg/m3		mg/m3		

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.  
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

SKIN PROTECTION

**SECTION 8. Exposure controls/personal protection** ... / >>

Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

**EYE PROTECTION**

Wear airtight protective goggles (see standard EN 166).

**RESPIRATORY PROTECTION**

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

**ENVIRONMENTAL EXPOSURE CONTROLS**

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

**SECTION 9. Physical and chemical properties**

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	powder	
Colour	beige	
Odour	odourless	
Melting point / freezing point	not available	
Initial boiling point	not applicable	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not applicable	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	8.7	Method:ASTM D1293-18 Concentration: 3.0 % Temperature: 25 °C
Kinematic viscosity	not available	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,7	
Relative vapour density	not available	
Particle characteristics	not available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Total solids (250°C / 482°F)	100,00 %
Explosive properties	not applicable
Oxidising properties	not applicable

**SECTION 10. Stability and reactivity**

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

**CALCIUM CHLORIDE**

Exothermic reaction with: boron trifluoride, vinylmethyl ether, Water, Generates dangerous gases or fumes in contact with: Metals, Zinc.

10.4. Conditions to avoid

**SECTION 10. Stability and reactivity** ... / >>

Avoid environmental dust build-up.

**10.5. Incompatible materials**

Information not available

**10.6. Hazardous decomposition products**

Information not available

**SECTION 11. Toxicological information**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.  
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**CALCIUM CHLORIDE**

Acute oral toxicity, Symptoms: After uptake of large quantities, Stomach/intestinal disorders - Acute inhalation toxicity, Symptoms: Possible damages, mucosal irritations - Acute dermal toxicity, Skin irritation rabbit, Result: No irritation - Eye irritation rabbit, Result: Eye irritation, Causes serious eye irritation.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

**BARIUM SULFATE**

LD50 (Oral): > 3000 mg/kg Mouse

**CALCIUM CHLORIDE**

LD50 (Dermal): 2630 mg/kg Rat

LD50 (Oral): 1000 mg/kg Rat

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

## SECTION 11. Toxicological information ... / >>

### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

### STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

#### 11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

## SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

#### 12.1. Toxicity

Information not available

#### 12.2. Persistence and degradability

BARIUM SULFATE  
Solubility in water 0,1 - 100 mg/l  
Degradability: information not available

CALCIUM CHLORIDE  
Solubility in water > 10000 mg/l  
Degradability: information not available

#### 12.3. Bioaccumulative potential

Information not available

#### 12.4. Mobility in soil

Information not available

#### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

#### 12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

#### 12.7. Other adverse effects

Information not available



## SECTION 13. Disposal considerations

### 13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.  
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.  
CONTAMINATED PACKAGING  
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

### 14.1. UN number or ID number

not applicable

### 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

not applicable

### 14.6. Special precautions for user

not applicable

### 14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Contained substance  
Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors  
not applicable

Substances in Candidate List (Art. 59 REACH)  
On the basis of available data, the product does not contain any SVHC in percentage  $\geq$  than 0,1%.

Substances subject to authorisation (Annex XIV REACH)  
None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:  
None

Substances subject to the Rotterdam Convention:  
None

## SECTION 15. Regulatory information ... / >>

Substances subject to the Stockholm Convention:  
None

Healthcare controls  
Information not available

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)  
WGK 1: Low hazard to waters

### 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Eye Irrit. 2	Eye irritation, category 2
H319	Causes serious eye irritation.
EUH210	Safety data sheet available on request.

### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

### GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)

SECTION 16. Other information ... / >>

16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

08 / 09.