

# 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 HI3874-0  
 Product name Nitrate Reagent

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

Intended use Determination of Nitrate in Water 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 International: +1 7035273887 - UK, London: +44 2038073798 - 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 2020/878.

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:

Carcinogenicity, category 1B	H350	May cause cancer.
Germ cell mutagenicity, category 2	H341	Suspected of causing genetic defects.
Reproductive toxicity, category 2	H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
Acute toxicity, category 3	H331	Toxic if inhaled.
Specific target organ toxicity - repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic 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:



SECTION 2. Hazards identification ... / >>

Signal words: Danger

Hazard statements:

H350 May cause cancer.  
H341 Suspected of causing genetic defects.  
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  
H331 Toxic if inhaled.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.  
EUH071 Corrosive to the respiratory tract.  
Restricted to professional users.

Precautionary statements:

P201 Obtain special instructions before use.  
P260 Do not breathe dust, fume, gas, mist, vapours, spray.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.  
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.  
P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.  
P391 Collect spillage.

Contains: CADMIUM (non pyrophoric)  
POTASSIUM DISULFATE  
SULFANILIC ACID

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

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
POTASSIUM DISULFATE INDEX EC 232-216-8 CAS 7790-62-7 REACH Reg. 01-2119987095-26	9 $\leq$ x < 17	Acute Tox. 3 H331, Skin Corr. 1A H314, Eye Dam. 1 H318, EUH071 LC50 Inhalation mists/powders: 0,85 mg/l/4h
SULFANILIC ACID INDEX EC 612-014-00-X CAS 204-482-5 CAS 121-57-3	1 $\leq$ x < 5	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317
CADMIUM (non pyrophoric) INDEX EC 231-152-8 CAS 7440-43-9	3 $\leq$ x < 5	Carc. 1B H350, Muta. 2 H341, Repr. 2 H361fd, Acute Tox. 2 H330, STOT RE 1 H372, Aquatic Acute 1 H400 M=100, Aquatic Chronic 1 H410 M=1, EUH207 LC50 Inhalation mists/powders: 0,051 mg/l/1h
2,5-DIHYDROXYBENZOIC ACID INDEX EC 207-718-5 CAS 490-79-9	1 $\leq$ x < 5	Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335 LD50 Oral: 800

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

COPPER (II) SULFATE			
INDEX	029-004-00-0	0,025 ≤ x < 0,25	Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=10
EC	231-847-6		LD50 Oral: 482
CAS	7758-99-8		

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!.

##### SULFANILIC ACID

Irritant effects, Allergic reactions. The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

##### CADMIUM (non pyrophoric)

Irritant effects, Cough, Shortness of breath, Diarrhoea, Nausea, Vomiting, Salivation, metallic taste.

##### COPPER (II) SULFATE

Irritant effects, conjunctivitis, gastric pain, Diarrhoea, Vomiting, collapse, death Risk of corneal clouding.

#### 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.

##### SULFANILIC ACID

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire. Fire may cause evolution of: Sulphur oxides, nitrogen oxides.

##### COPPER (II) SULFATE

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

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

### 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. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. 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

Regulatory References:

AUS	Österreich	Gesamte Rechtsvorschrift für Grenzwerteverordnung 2021 , Fassung vom 17.06.2021
BEL	Belgique	Liste de valeurs limites d'exposition aux agents chimiques, livre VI du code du bien-être au travail
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail: VME/VLE (SUVA). Grenzwerte am Arbeitsplatz: MAK (SUVA)
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

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

FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 2020:25
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)
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
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
SWE	Sverige	Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)
GBR	United Kingdom TLV-ACGIH	EH40/2005 Workplace exposure limits (Fourth Edition 2020) ACGIH 2021

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	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation							0,13	0,13
							mg/m3	mg/m3

SULFANILIC ACID

Predicted no-effect concentration - PNEC								
Normal value in fresh water				0,023	mg/l			
Normal value in marine water				0,002	mg/l			
Normal value for water, intermittent release				0,23	mg/l			
Normal value of STP microorganisms				100	mg/l			
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
Oral			VND	1,67				
				mg/kg bw/d				
Inhalation			VND	6,67			VND	13,33
				mg/m3				mg/m3
Skin			VND	1,67			VND	3,33
				mg/kg bw/d				mg/kg bw/d

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

CADMIUM (non pyrophoric)

Threshold Limit Value						
Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
MAK	AUS			0,002		RESP
VLEP	BEL	0,01				INHAL
VLEP	BEL	0,002				RESP
MAK	CHE	0,015				
VLA	ESP	0,01				INHAL
VLA	ESP	0,002				RESP
VLEP	FRA	0,05				
OELV	IRL	0,01				
OELV	IRL	0,002				RESP
TLV	ROU	0,05				
NGV/KGV	SWE	0,02				
NGV/KGV	SWE	0,005				RESP
WEL	GBR	0,025				
TLV-ACGIH		0,01				

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,00019	mg/l
Normal value in marine water	0,0014	mg/l
Normal value for fresh water sediment	1,8	mg/kg/d
Normal value for marine water sediment	0,64	mg/kg/d
Normal value of STP microorganisms	0,02	mg/l
Normal value for the terrestrial compartment	0,19	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	Chronic systemic	Chronic local	Chronic systemic
Oral				VND	0,001				
Inhalation							0,004		VND
							mg/m <sup>3</sup>		

COPPER (II) SULFATE

Threshold Limit Value						
Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
VLEP	BEL	1				Copper
MAK	DEU	0,01		0,02		RESP
VLA	ESP	1				Copper
VLEP	FRA	1		2		Copper
HTP	FIN	1				Copper
OELV	IRL	1		2		Copper
NDS/NDSch	POL	0,2				
TLV	ROU	0,5		1,5		Copper
WEL	GBR	1		2		Copper
TLV-ACGIH		1				Copper

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0078	mg/l
Normal value in marine water	0,0052	mg/l
Normal value for fresh water sediment	87	mg/kg/d
Normal value for marine water sediment	676	mg/kg/d
Normal value of STP microorganisms	0,23	mg/l
Normal value for the terrestrial compartment	65	mg/kg/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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

CADMIUM (non pyrophoric)

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norm ISO 11174 - Biological Values, ACGIH: 5 µg/g creatinine Cadmium in urine, 5 µg/l Cadmium in blood - ESP: 5 µg/g creatinina Cadmio en orina - ROU: 10 µg/g creatinina in urină (sfârşit schimb).

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

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

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.  
The product must be used inside a closed circuit, in a well-ventilated environment and with strong localised aspiration systems in place.  
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 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).  
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**

If the operator is exposed to a carcinogenic or mutagenic agent, wear a type FFP3 facemask, (see standard EN 149).  
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

**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	solid powder	
Colour	grey	
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	2.7 - 3.0	Method:ASTM D1293-18 Concentration: 2.2 % Temperature: 25 °C
Kinematic viscosity	not available	
Solubility	partially soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	not available	
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 %



## SECTION 10. Stability and reactivity

### 10.1. Reactivity

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

#### SULFANILIC ACID

Decomposes without melting at temperatures > 288°C/550°F.

### 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.

#### CADMIUM (non pyrophoric)

Risk of explosion on contact with: zinc, ammonium nitrate, heat.

May react dangerously with: ammonia, potassium, lithium, phosphorus trichloride, selenium, strong oxidising agents, potassium chlorate.

#### COPPER (II) SULFATE

Exothermic reaction with: Strong oxidizing agents, hydroxylamine, magnesium.

### 10.4. Conditions to avoid

Avoid environmental dust build-up.

#### POTASSIUM DISULFATE

Exposure to moisture.

#### COPPER (II) SULFATE

Strong heating (decomposition).

### 10.5. Incompatible materials

#### SULFANILIC ACID

Strong acids and bases. Incompatible with alkyl oxides, aliphatic amines, alkanolamines, amides, ammonia, epichlorohydrin, organic anhydrides, isocyanates, vinyl acetates and oxidising agents.

### 10.6. Hazardous decomposition products

#### SULFANILIC ACID

Sulphur oxides, nitric oxides.

## SECTION 11. Toxicological information

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

#### 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!

#### SULFANILIC ACID

Acute inhalation toxicity, Symptoms: Possible damages, Irritation symptoms in the respiratory tract - Skin irritation, rabbit, Result: slight irritation, Causes skin irritation - Eye irritation, rabbit, Result: Eye irritation, Causes serious eye irritation - Sensitisation  
Sensitisation test: guinea pig, Result: positive, May cause an allergic skin reaction.

#### CADMIUM (non pyrophoric)

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract.  
Absorption - CMR effects, Carcinogenicity: May cause cancer - Mutagenicity: Suspected of causing genetic defects - Teratogenicity: Suspected of damaging the unborn child - Reproductive toxicity: Suspected of damaging fertility.

#### COPPER (II) SULFATE

Skin irritation, Causes skin irritation - Eye irritation, Risk of corneal clouding, conjunctivitis. Causes serious eye irritation - Genotoxicity in vivo, Mutagenicity (mammal cell test): micronucleus, Result: negative (National Toxicology Program) - Genotoxicity in vitro Ames test, Salmonella typhimurium, Result: negative.

Metabolism, toxicokinetics, mechanism of action and other information



**SECTION 11. Toxicological 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 - mists / powders) of the mixture:	0,8 mg/l
ATE (Oral) of the mixture:	>2000 mg/kg
ATE (Dermal) of the mixture:	Not classified (no significant component)

Corrosive to the respiratory tract.

<b>POTASSIUM DISULFATE</b>	
LD50 (Oral):	2140 mg/kg Rat
LC50 (Inhalation mists/powders):	0,85 mg/l/4h Rat

<b>2,5-DIHYDROXYBENZOIC ACID</b>	
LD50 (Oral):	800 mg/kg

<b>SULFANILIC ACID</b>	
LD50 (Dermal):	> 2000 mg/kg Rat
LD50 (Oral):	> 2000 mg/kg Rat

<b>CADMIUM (non pyrophoric)</b>	
LD50 (Oral):	890 mg/kg
LC50 (Inhalation mists/powders):	0,051 mg/l/1h

<b>COPPER (II) SULFATE</b>	
LD50 (Dermal):	> 2000 mg/kg
LD50 (Oral):	482 mg/kg Rat

SKIN CORROSION / IRRITATION

Corrosive for the skin

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Suspected of causing genetic defects

CARCINOGENICITY

May cause cancer

REPRODUCTIVE TOXICITY

Suspected of damaging fertility - Suspected of damaging the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

**SECTION 11. Toxicological information** ... / >>

Causes damage to organs

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**

This product is dangerous for the environment and highly toxic for aquatic organisms.

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

12.1. Toxicity

CADMIUM (non pyrophoric)

Toxicity to bacteria, static test NOEC activated sludge: 0,2 mg/l, 3 h, Analytical monitoring: yes.

POTASSIUM DISULFATE

LC50 - for Fish

680 mg/l/96h Pimephales promelas

EC50 - for Crustacea

720 mg/l/48h Daphnia magna

SULFANILIC ACID

LC50 - for Fish

> 100 mg/l/96h Danio rerio

EC50 - for Crustacea

23 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic Plants

32 mg/l/72h Desmodesmus subspicatus

CADMIUM (non pyrophoric)

LC50 - for Fish

0,748 mg/l/96h

EC50 - for Crustacea

0,038 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic Plants

0,0023 mg/l/72h Selenastrum capricornutum

LC10 for Fish

1,5 mg/l/96h Pimephales promelas

Chronic NOEC for Algae / Aquatic Plants

0,031 mg/l Scenedesmus quadricauda

COPPER (II) SULFATE

LC50 - for Fish

0,11 mg/l/96h Oncorhynchus mykiss

EC50 - for Crustacea

0,02 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic Plants

0,02 mg/l/72h

Chronic NOEC for Crustacea

0,0088 mg/l Paracetrotus lividus

12.2. Persistence and degradability

SULFANILIC ACID

Solubility in water

> 10000 mg/l

Rapidly degradable

12.3. Bioaccumulative potential

2,5-DIHYDROXYBENZOIC ACID

Partition coefficient: n-octanol/water

1,74

SULFANILIC ACID

Partition coefficient: n-octanol/water

-2,298

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%.

**SECTION 12. Ecological information** ... / >>

12.6. Endocrine disrupting properties

**COPPER (II) SULFATE**

Fungicide. Discharge into the environment must be avoided.

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. 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 or ID number

ADR / RID, IMDG, IATA: 2923

14.2. UN proper shipping name

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

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

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

Packaging instructions: 863

IATA: Cargo:

Maximum quantity: 50 Kg

Packaging instructions: 859

Pass.:

Maximum quantity: 15 Kg

Special provision:

A3, A803

**SECTION 14. Transport information** ... / >>

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: H2-E1

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

Contained substance	
Point	75
Point	23-28-72 CADMIUM (non pyrophoric)

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

Substances in Candidate List (Art. 59 REACH)  
CADMIUM (non pyrophoric)

Substances subject to authorisation (Annex XIV REACH)  
None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:  
CADMIUM (non pyrophoric) - (CADMIUM AND ITS COMPOUNDS)

Substances subject to the Rotterdam Convention:  
None

Substances subject to the Stockholm Convention:  
None

Healthcare controls  
Workers exposed to this health-dangerous chemical agent must undergo sanitary checks carried out in compliance with 2004/37/EC directive.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)  
WGK 3: Severe 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:

Carc. 1B	Carcinogenicity, category 1B
Muta. 2	Germ cell mutagenicity, category 2
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Skin Corr. 1A	Skin corrosion, category 1A
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H350	May cause cancer.
H341	Suspected of causing genetic defects.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H330	Fatal if inhaled.
H331	Toxic if inhaled.

SECTION 16. Other information ... / >>

H302	Harmful if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.
EUH207	Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions.

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)
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)

[SECTION 16. Other information](#) ... / >>

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:

03 / 08 / 09 / 11 / 12 / 16.