

Safety data sheet according to Regulation (EC) No. 1907/2006

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

1.1. Product identifier.

Code. HI38050-0
Product name. Nitrate Reagent

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

Intended use. Determination of Nitrate in soil and irrigation water samples. Restricted to professional use.

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. Nufalau (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)-703-527-3887 - UK, London: +(44)-870-8200418 - 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 EC Regulation 1907/2006 and subsequent amendments.

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.
	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 and face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / 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.
P310	Immediately call a POISON CENTER or doctor.
P391	Collect spillage.

Contains: CADMIUM
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 greater than 0,1%.

SECTION 3. Composition/information on ingredients.

3.1. Substances.

Information not relevant.

3.2. Mixtures.

Contains:

Identification.	x = Conc. %.	Classification 1272/2008 (CLP).
POTASSIUM DISULFATE		
CAS. 7790-62-7	$9 \leq x < 17$	Acute Tox. 3 H331, Skin Corr. 1A H314
EC. 232-216-8		
INDEX.		
SULFANILIC ACID		
CAS. 121-57-3	$1 \leq x < 5$	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317
EC. 204-482-5		
INDEX. 612-014-00-X		
CADMIUM		
CAS. 7440-43-9	$2,5 \leq x < 5$	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
EC. 231-152-8		
INDEX. 048-002-00-0		
2,5-DIHYDROXYBENZOIC ACID		
CAS. 490-79-9	$1 \leq x < 5$	Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335
EC. 207-718-5		
INDEX.		

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

COPPER (II) SULFATE

CAS. 7758-99-8 $0,025 \leq x < 0,25$ 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

INDEX. 029-004-00-0

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.

For symptoms and effects caused by the contained substances, see chap. 11.

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

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 the product is flammable, use explosion-proof equipment.

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.

Regulatory References:

DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
ROU	România	Monitorul Oficial al României 44; 2012-01-19
	TLV-ACGIH	ACGIH 2016

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/
Normal value for marine water sediment	0,25	mg/kg/
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/

Health - Derived no-effect level - DNEL / DMEL

Effects on consumers.					Effects on workers			
Route of exposure	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

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

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 local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.			VND	1,67 mg/kg bw/d				
Inhalation.			VND	6,67 mg/m3			VND	13,33 mg/m3
Skin.			VND	1,67 mg/kg bw/d			VND	3,33 mg/kg bw/d

CADMIUM

Threshold Limit Value.

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm
VLA	ESP	0,01			
VLA	ESP	0,002			
VLEP	FRA	0,05			
WEL	GBR	0,025			
TLV	ROU	0,05			
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/
Normal value for marine water sediment	0,64	mg/kg/
Normal value of STP microorganisms	0,02	mg/l
Normal value for the terrestrial compartment	0,19	mg/kg/

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
Oral.			VND	0,001 mg/kg bw/d				
Inhalation.							0,004 mg/m3	VND

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

COPPER (II) SULFATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m ³	ppm	mg/m ³	ppm	
MAK	DEU	0,01		0,02		RESP.
VLA	ESP	1				
						Copper
VLEP	FRA	1		2		
						Copper
WEL	GBR	1		2		
						Copper
TLV	ROU	0,5		1,5		
						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/
Normal value for marine water sediment	676	mg/kg/
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.

CADMIUM

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, 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 well aired through effective local aspiration. 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 Directive 89/686/EEC 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.

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.

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.

Appearance	solid powder
Colour	grey
Odour	odourless
Odour threshold.	Not available.
pH.	2.7 - 3.0 pH, 22 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.	Not available.
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 available.
Oxidising properties	Not available.

9.2. Other information.

Total solids (250°C / 482°F)	100,00 %
VOC (Directive 2010/75/EC) :	0
VOC (volatile carbon) :	0

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.

CADMIUM

Forms explosive mixtures with air on intense heating.

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

Risk of ignition or formation of inflammable gases or vapours with: in powder form, with, Air in powder form, with Ammonia nitrile halides. Risk of explosion with: hexafluorobenzene, Hydrazoic acid, ammonium nitrate with heat Zinc, in powder form with Heat Acid, generation of hydrogen) . Exothermic reaction with: Alkali metals, chlorates, Strong oxidizing agents, PHOSPHORUS TRICHLORIDE, selenium, in powder form, Tellurium, in powder form.

COPPER (II) SULFATE

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

10.4. Conditions to avoid.

Avoid environmental dust build-up.

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

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.

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.

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
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.

ACUTE TOXICITY.

LC50 (Inhalation - vapours) of the mixture:	Not classified (no significant component).
LC50 (Inhalation - mists / powders) of the mixture:	6,020 mg/l
LD50 (Oral) of the mixture:	16000,003 mg/kg
LD50 (Dermal) of the mixture:	Not classified (no significant component).

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

2,5-DIHYDROXYBENZOIC ACID	
LD50 (Oral).	800 mg/kg

SULFANILIC ACID	
LD50 (Oral).	> 2000 mg/kg Rat
LD50 (Dermal).	> 2000 mg/kg Rat

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

CADMIUM
LD50 (Oral). 890 mg/kg
LC50 (Inhalation). 0,051 mg/l/1h

COPPER (II) SULFATE
LD50 (Oral). 482 mg/kg Rat
LD50 (Dermal). > 2000 mg/kg

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.
May damage fertility or the unborn child.

STOT - SINGLE EXPOSURE.
Does not meet the classification criteria for this hazard class.

STOT - REPEATED EXPOSURE.
Causes damage to organs.

ASPIRATION HAZARD.
Does not meet the classification criteria for this hazard class.

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 aquatic environment.

12.1. Toxicity.

CADMIUM
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
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

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

12.2. Persistence and degradability.

SULFANILIC ACID
Solubility in water. > 10000 mg/l
Rapidly biodegradable.

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 greater than 0,1%.

12.6. Other adverse effects.

COPPER (II) SULFATE
Fungicide. 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.

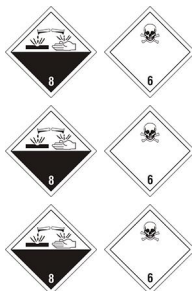
ADR / RID: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE, CADMIUM,) MIXTURE
IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE, CADMIUM,) MIXTURE
IATA: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE, CADMIUM,) MIXTURE

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

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: 1 kg	Tunnel restriction code: (E)
	Special Provision: -		
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 kg	
IATA:	Cargo:	Maximum quantity: 50 Kg	Packaging instructions: 863
	Pass.:	Maximum quantity: 15 Kg	Packaging instructions: 859
	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-E1

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

Contained substance.
Point. 23-28 CADMIUM

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

Substances subject to authorisation (Annex XIV REACH).
None.

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

WGK 3: Severe hazard to waters

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

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
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1A	Skin corrosion, category 1A

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

Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
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
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
Aquatic Chronic 4	Hazardous to the aquatic environment, chronic toxicity, category 4
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.
H302	Harmful if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause 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.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

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 (EU) 1907/2006 (REACH) of the European Parliament

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

2. Regulation (EU) 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

- 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
- ECHA website

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.

Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 04 / 05 / 08 / 09 / 10 / 11 / 12 / 14 / 15 / 16.