



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

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

1.1. Product identifier

Product name : ALOXIDE

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

Blackening solution for aluminium alloys.

1.3. Details of the supplier of the safety data sheet

Registered company name : GRAVOTECH MARKING SAS.
Address : 56, avenue Jean Jaurès.10600.La Chapelle Saint Luc.France.
Telephone : +33 (0)3 25 41 65 65. Fax : +33 (0)3 25 79 04 25.
e-mail : info@gravograph.fr
<http://www.gravograph.com>

1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.

Other emergency numbers

National Poisons Information Service of England: <http://npis.org> - NHS 111: dial 111 - National Poisons Information Centre of Ireland: 353 (1) 809 2166 - LUXEMBOURG : (+352) 8002 5500 - European Emergency Number Association (EENA) : 112

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Oxidising liquid, Category 3 (Ox. Liq. 3, H272).
Acute oral toxicity, Category 3 (Acute Tox. 3, H301).
Skin corrosion, Category 1A (Skin Corr. 1A, H314).
Serious eye damage, Category 1 (Eye Dam. 1, H318).
Respiratory sensitisation, Category 1 (Resp. Sens. 1, H334).
Skin sensitisation, Category 1 (Skin Sens. 1, H317).
Germ cell mutagenicity, Category 2 (Muta. 2, H341).
Carcinogenicity, Category 1A (Carc. 1A, H350i).
Reproductive toxicity, Category 1B (Repr. 1B, H360D).
Specific target organ toxicity (repeated exposure), Category 1 (STOT RE 1, H372).
Specific target organ toxicity (repeated exposure), Category 2 (STOT RE 2, H373).
Hazardous to the aquatic environment - Acute hazard, Category 1 (Aquatic Acute 1, H400).
Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



Signal Word :

DANGER

Product identifiers :

029-023-00-4

COPPER SULPHATE PENTAHYDRATE

EC 231-974-7 SELENIOUS ACID
028-009-00-5 NICKEL SULFATE

Additional labeling :

For professional users only.

Hazard statements :

H272 May intensify fire; oxidiser.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects .
H350i May cause cancer by inhalation (if inhaled).
H360D May damage the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure (if inhaled).
H373 May cause damage to organs through prolonged or repeated exposure .
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements - Prevention :

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P260 Do not breathe mist/vapours.
P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.

Precautionary statements - Response :

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Precautionary statements - Disposal :

P501 Dispose of contents/container at a disposal facility in accordance with local regulations.



2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) $\geq 0.1\%$ published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

The mixture does not contain substances $\geq 0.1\%$ with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures



Composition :

Identification	Classification (EC) 1272/2008	Note	%
INDEX: 009-010-00-X CAS: 16872-11-0 EC: 240-898-3	GHS05 Dgr Skin Corr. 1B, H314	B	10 \leq x % < 25
FLUOROBORIC ACID INDEX: 029-023-00-4 CAS: 7758-99-8 EC: 231-847-6	GHS07, GHS05, GHS09 Dgr Acute Tox. 4, H302		2.5 \leq x % < 10

REACH: 01-2119520566-40 COPPER SULPHATE PENTAHYDRATE	Eye Dam. 1, H318 Aquatic Acute 1, H400 M Acute = 10 Aquatic Chronic 1, H410 M Chronic = 1		
CAS: 7783-00-8 EC: 231-974-7 REACH: 01-2119548405-38 SELENIOS ACID	GHS06, GHS09, GHS08 Dgr Acute Tox. 3, H301 Acute Tox. 3, H331 STOT RE 2, H373 Aquatic Acute 1, H400 M Acute = 1 Aquatic Chronic 1, H410 M Chronic = 1	A	2.5 <= x % < 10
INDEX: 015-011-00-6 CAS: 7664-38-2 EC: 231-633-2 REACH: 01-2119485924-24 PHOSPHORIC ACID	GHS05 Dgr Skin Corr. 1B, H314	B [1]	2.5 <= x % < 10
INDEX: 028-009-00-5 CAS: 7786-81-4 EC: 232-104-9 REACH: 01-2119439361-44 NICKEL SULFATE	GHS07, GHS09, GHS08 Dgr Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, H332 Resp. Sens. 1, H334 Muta. 2, H341 Carc. 1A, H350i Repr. 1B, H360D STOT RE 1, H372 Aquatic Acute 1, H400 M Acute = 1 Aquatic Chronic 1, H410 M Chronic = 1	E [1] [2] [XVII]	1 <= x % < 2.5


Specific concentration limits:

Identification	Specific concentration limits	ATE
INDEX: 009-010-00-X CAS: 16872-11-0 EC: 240-898-3 FLUOROBORIC ACID	Skin Corr. 1B: H314 C>= 25% Skin Irrit. 2: H315 10% <= C < 25% Eye Dam. 1: H318 C>= 25% Eye Irrit. 2: H319 10% <= C < 25%	
INDEX: 029-023-00-4 CAS: 7758-99-8 EC: 231-847-6 REACH: 01-2119520566-40 COPPER SULPHATE PENTAHYDRATE		oral: ATE = 481 mg/kg BW
INDEX: 015-011-00-6 CAS: 7664-38-2 EC: 231-633-2 REACH: 01-2119485924-24 PHOSPHORIC ACID	Skin Corr. 1B: H314 C>= 25% Skin Irrit. 2: H315 10% <= C < 25% Eye Dam. 1: H318 C>= 25% Eye Irrit. 2: H319 10% <= C < 25%	
INDEX: 028-009-00-5 CAS: 7786-81-4 EC: 232-104-9 REACH: 01-2119439361-44 NICKEL SULFATE	STOT RE 1 (Inh) : H372 C>= 1% STOT RE 2: H373 0.1% <= C < 1% Skin Irrit. 2: H315 >=20% Skin Sens. 1: H317 C>= 0.01%	



Information on ingredients :

(Full text of H-phrases: see section 16)

[XVII] Restricted substance under Regulation (EC) No. 1907/2006 (REACH), Annex XVII.

[1] Substance for which maximum workplace exposure limits are available.

[2] Carcinogenic, mutagenic or reprotoxic (CMR) substance.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.



4.1. description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

In the event of an allergic reaction, seek medical attention.

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.



In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Remove any soiled or splashed clothing immediately.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.



In the event of swallowing :

Do not give the patient anything orally.

Seek medical attention immediately, showing the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Oxidising mixture which may ignite or increase the risk of flammability when in contact with combustible materials.

5.1. Extinguishing media

Keep packages near the fire cool, to prevent pressurised containers from bursting.

Suitable methods of extinction

Prevent the effluent of fire-fighting measures from entering drains or waterways.

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- fluorine (F₂)

N/A

N/A

5.3. Advice for firefighters

No data available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).

6.3. Methods and material for containment and cleaning up

Neutralise with an alkaline decontaminant, such as an aqueous solution of sodium carbonate or similar.

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

Individuals with a history of asthma, allergies and/or chronic or periodical breathing difficulties should not, under any circumstances, use these mixtures.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this mixture.

Avoid exposure to pregnant women and warn women of child-bearing age of the possible risks

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Remove contaminated clothing and protective equipment before entering eating areas.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

Fire prevention :

Handle in well-ventilated areas.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Keep away from combustible material.

Do not inhale vapours.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Avoid exposure - obtain special instructions before use.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

Never open the packages under pressure.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

Keep away from combustible material.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- European Union (2022/431, 2019/1831, 2017/2398, 2017/164, 2009/161, 2006/15/CE, 2000/39/CE, 98/24/CE) :

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
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7664-38-2	1	-	2	-	-	
- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m3	3 mg/m3				
7786-81-4	0.1 mg/m3	-	-	-	I	
- Germany - AGW (BAuA - TRGS 900, 02/2022) :						
CAS	VME :	VME :	Excess	Notes		
7664-38-2		2E mg/m³		2(I)		
- Australia (NOHSC: 3008, 1995) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m3	3 mg/m3		H		
- Austria (BGBl. II Nr. 156/2021) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m³	2 mg/m³				
- Belgium (Royal decree of 11/05/2021) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m³	2 mg/m³				
- France (INRS - Outils 65 / 2021-1849, 2021-1763, decree of 09/12/2021) :						
CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
7664-38-2	0.2	1	0.5	2	-	-
7786-81-4	-	0.1	-	-	C1. M3. R2	37. 37 bis
- Switzerland (Suva 2021) :						
CAS	VME	VLE	Valeur plafond	Notations		
7664-38-2	2 ppm	4 ppm				
- UK / WEL (Workplace exposure limits, EH40/2005, Fourth Edition 2020) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m³	2 mg/m³				
- USA / OSHA PEL (Occupational Safety and Health Administration, Permissible Exposure Limits) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
7664-38-2	1 mg/m3					
7786-81-4	1 mg/m3	-	-	-	-	

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Natural latex
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- PVC (polyvinyl chloride)
- Butyl Rubber (Isobutylene-isoprene copolymer)
- Neoprene® (Polychloroprene)

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Wear suitable protective clothing, in particular overalls and boots. These items must be kept in good condition and cleaned after use.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.



- Respiratory protection

Avoid inhaling vapors.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties



Physical state

Physical state :	Fluid liquid.
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Colour

Colour:	Blue.
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Odour

Odour threshold :	Not stated.
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Odour:	Odourless.
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Freezing point

Freezing point / Freezing range :	Not stated.
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Boiling point or initial boiling point and boiling range

Boiling point/boiling range :	> 100°C
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Flammability

Flammability (solid, gas) :	Not stated.
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Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) :	Not stated.
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Explosive properties, upper explosivity limit (%) :	Not stated.
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Flash point

Flash point interval :	Not relevant.
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Auto-ignition temperature

Self-ignition temperature :	Not relevant.
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Decomposition temperature

Decomposition point/decomposition range :	Not relevant.
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pH

pH (aqueous solution) :	Not stated.
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pH :	Not stated.
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	Strongly acidic.
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Kinematic viscosity

Viscosity :	Not stated.
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Solubility

Water solubility :	Dilutable.
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Fat solubility :	Not stated.
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Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water :	Not stated.
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Vapour pressure

Vapour pressure (50°C) :	Not relevant.
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Density and/or relative density

Density :	1.099
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Relative vapour density

Vapour density :	< 1.0 (Air = 1)
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9.2. Other information

No data available.

 **9.2.1. Information with regard to physical hazard classes**

No data available.

 **9.2.2. Other safety characteristics**

No data available.

 **Evaporation rate**

Evaporation rate : < 1 (Ethyl Ether = 1)

SECTION 10 : STABILITY AND REACTIVITY**10.1. Reactivity**

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :

- heating
- heat
- frost

10.5. Incompatible materials

Keep away from :

- combustible material
- metals
- strong reducing agents
- cyanides

N/A

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- fluorine (F₂)

N/A

N/A

SECTION 11 : TOXICOLOGICAL INFORMATION **11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Toxic if swallowed.

May cause irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following exposure for up to three minutes.

Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discolouration due to blanching of the skin, complete areas of alopecia, and scars.

May cause hypersensitivity of the respiratory tracts with effects taking the form of asthma, rhinitis/conjunctivitis or alveolitis.

May cause an allergic reaction by skin contact.

Known human carcinogen by inhalation.


Cause for concern owing to the possibility that it may induce heritable mutations in the germ cells of humans.

Presumed human reproductive toxicant.

May damage the unborn child.

Causes severe damage to organs in the event of repeated or prolonged exposure.

May cause severe damage to organs in the event of repeated or prolonged exposure.

 **11.1.1. Substances** **Acute toxicity :**

COPPER SULPHATE PENTAHYDRATE (CAS: 7758-99-8)

Oral route : LD50 = 481 mg/kg bodyweight/day

11.1.2. Mixture**Acute toxicity :**

Oral route : Highly toxic if swallowed.

200 < LD50 <= 300 mg/kg

Skin corrosion/skin irritation :

Corrosivity : Causes severe skin burns.

Respiratory or skin sensitisation :

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

11.2. Information on other hazards

SECTION 12 : ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.2. Mixtures

12.2. Persistence and degradability

12.2.2. Mixtures

Biodegradation : No data on decomposition is available, the mixture is not considered to decompose rapidly.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 3 : Extremely hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2023 - IMDG 2020 [40-20] - ICAO/IATA 2023 [64]).

14.1. UN number or ID number

3264

14.2. UN proper shipping name

UN3264=CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

(selenious acid, phosphoric acid ...%)

14.3. Transport hazard class(es)

- Classification :



8

14.4. Packing group

III

14.5. Environmental hazards

- Environmentally hazardous material :

**14.6. Special precautions for user**

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	8	C1	III	8	80	5 L	274	E1	3	E
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation	
	8	-	III	5 L	F-A, S-B	223 274	E1	Category A SW2	SGG1 SG36 SG49	
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	8	-	III	852	5 L	856	60 L	A3 A803	E1	
	8	-	III	Y841	1 L	-	-	A3 A803	E1	

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

Marine pollutant (IMDG 3.1.2.9):(copper sulphate pentahydrate)

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Classification and labelling information included in section 2:**

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2022/692 (ATP 18)

Container information:

No data available.

Restrictions applied under Title VIII of Regulation (EC) No. 1907/2006 (REACH):The mixture contains at least one restricted substance under Annex XVII of Regulation (EC) No. 1907/2006 (REACH): <https://echa.europa.eu/substances-restricted-under-reach>. Please refer to Section 3 to identify the substance involved.

For professional users only.

Explosives precursors :

The mixture does not contain any substance subject to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

Particular provisions :

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 3 : Extremely hazardous for water.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a

guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects .
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure .
H373	May cause damage to organs through prolonged or repeated exposure .
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Abbreviations and acronyms :**

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.
REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.
ATE : Acute Toxicity Estimate
BW : Body Weight
CMR: Carcinogenic, mutagenic or reprotoxic.
STEL : Short-term exposure limit
TWA : Time Weighted Averages
TMP : French Occupational Illness table
TLV : Threshold Limit Value (exposure)
AEV : Average Exposure Value.
ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
WGK : Wassergefährdungsklasse (Water Hazard Class).
GHS03 : Flame over circle
GHS05 : Corrosion
GHS06 : Skull and crossbones
GHS08 : Health hazard
GHS09 : Environment
PBT: Persistent, bioaccumulable and toxic.
vPvB : Very persistent, very bioaccumulable.
SVHC : Substances of very high concern.