



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

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

1.1. Product identifier

Product name : ALOXIDE #21130
Product code : GRAV 003.

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

N/A

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>.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Acute oral toxicity, Category 4 (Acute Tox. 4, H302).
Acute inhalation toxicity, Category 4 (Acute Tox. 4, H332).
Skin corrosion, Category 1A (Skin Corr. 1A, H314).
Skin sensitisation, Category 1 (Skin Sens. 1, H317).
Carcinogenicity, Category 1A (Carc. 1A, H350).
Reproductive toxicity, Category 1B (Repr. 1B, H360).
Specific target organ toxicity (repeated exposure), Category 2 (STOT RE 2, H373).
Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Acute oral toxicity: harmful (Xn, R 22).
Acute inhalation toxicity: harmful (Xn, R 20).
Serious effects after prolonged or repeated inhalation exposure: harmful (Xn, R 48/20).
Corrosive (C, R 35).
Skin sensitisation (Xi, R 43).
Danger of cumulative effects (R 33).
Category 1 carcinogen (T+, R 49 Carc. Cat. 1).
Category 2 reproductive toxin (T, R 61 Repr. Cat. 2).
Aquatic environmental hazard, chronic toxicity: toxic (N, R 51/53).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

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

Hazard pictograms :



GHS07

GHS05

GHS09

GHS08

Signal Word :

DANGER

Product identifiers :

CAS 7758-99-8

COPPER (II) SULFATE PENTAHYDRATE

EC 231-974-7

SELENIOS ACID

028-009-00-5

NICKEL SULPHATE

Additional labeling :

For professional use only.

Hazard statements :

H302 + H332

Harmful if swallowed or if inhaled.

H314

Causes severe skin burns and eye damage.

H317

May cause an allergic skin reaction.

H350i

May cause cancer by inhalation.

H360D

May damage the unborn child.

H373

May cause damage to organs through prolonged or repeated exposure (if inhaled, if swallowed).

H411

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.

P260

Do not breathe vapours.

P264

Wash hands thoroughly after handling.

P273

Avoid release to the environment.

P281

Use personal protective equipment as required.

Precautionary statements - Response :

P301 + P312

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301 + P330 + P331

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P333 + P313

If skin irritation or rash occurs: Get medical advice/attention.

P363

Wash contaminated clothing 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 any substances classified as 'Substances of Very High Concern' (SVHC) by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

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

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
CAS: 7758-99-8	GHS07, GHS09	Xn,N		2.5 <= x % < 10
COPPER (II) SULFATE PENTAHYDRATE	Wng Acute Tox. 4, H302 Skin Irrit. 2, H315	Xn;R22 Xi;R36/38 N;R50/53		

	Eye Irrit. 2, H319 Aquatic Chronic 1, H410 Aquatic Acute 1, H400			
CAS: 7783-00-8 EC: 231-974-7 SELENIOS ACID	GHS06, GHS09, GHS08 Dgr Acute Tox. 3, H301 Acute Tox. 2, H330 STOT RE 2, H373 Aquatic Chronic 1, H410 Aquatic Acute 1, H400	T,N T;R23/25 N;R50/53 R33		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	C C;R34	B [1]	2.5 <= x % < 10
INDEX: 009-010-00-X CAS: 16872-11-0 EC: 240-898-3 FLUOROBORIC ACID	GHS05 Dgr Skin Corr. 1B, H314	C C;R34	B	1 <= x % < 2.5
INDEX: 028-009-00-5 CAS: 7786-81-4 EC: 232-104-9 NICKEL SULPHATE	GHS08, GHS07, GHS09 Dgr Carc. 1A, H350i Muta. 2, H341 Repr. 1B, H360 STOT RE 1, H372 Acute Tox. 4, H332 Acute Tox. 4, H302 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Chronic 1, H410 Aquatic Acute 1, H400	T,N Carc. Cat. 1;R49 Repr. Cat. 2;R61 Muta. Cat. 3;R68 T;R48/23 Xn;R42/43-R20/22 Xi;R38 N;R50/53	E [1] [2]	0 <= x % < 1

Information on ingredients :

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

Do not proceed with mouth-to-mouth or mouth-to-nose resuscitation.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, 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.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show 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

Non-flammable.

5.1. Extinguishing media

No data available.

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 :

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 fire-fighters

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 fire-fighters

Fire-fighters 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.

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 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.

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.
- 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.

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.

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 (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
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

- Belgium (Order of 19/05/2009, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7664-38-2	1 mg/m3	2 mg/m3	-	-	-

- France (INRS - ED984 :2008) :

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

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7664-38-2	1 mg/m3	2 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 EN374.

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)

Recommended properties :

- Impervious gloves in accordance with standard EN374

- 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 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 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 breathing vapours.

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****General information :**

Physical state :	fluid liquid.
Colour:	Blue.
Odour:	Odourless.

Important health, safety and environmental information

pH :	Not stated.
	strongly acidic.
Flash point interval :	not relevant.
Vapour pressure (50°C) :	not relevant.
Density :	1.099
Water solubility :	Dilutable.
Evaporation rate :	< 1 (Ethyl Ether)

9.2. Other information

No data available.

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

No data available.

10.5. Incompatible materials

N/A

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

N/A

N/A

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Harmful if swallowed.

Harmful by inhalation.

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 an allergic reaction by skin contact.

Known human carcinogen by inhalation.

Presumed human reproductive toxicant.

May damage the unborn child.

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

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

Skin corrosion/skin irritation :

Corrosive classification is based on an extreme pH value.

SECTION 12 : ECOLOGICAL INFORMATION

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

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

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. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK) :

WGK 3 (VwVwS vom 27/07/2005, KBws) : 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, preferably 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 2011 -

IMDG 2010 - ICAO/IATA 2012).

14.1. UN number

3264

14.2. UN proper shipping name

UN3264=CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(phosphoric acid ...%, fluoroboric 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			
	8	-	III	5 L	F-A,S-B	223 274	E1			
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	

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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:

- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 286/2011

- Container information:

No data available.

Usage restrictions apply to the product : See annex XVII of EC regulation No. 1907/2006.

For professional users only.

- Particular provisions :

No data available.

- German regulations concerning the classification of hazards for water (WGK) :

Germany : WGK 3 (VwVwS vom 27/07/2005, KBws)

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.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Hazard symbols :



Toxic



Dangerous for the environment

Contains :

028-009-00-5 NICKEL SULPHATE
EC 231-974-7 SELENIOUS ACID
CAS 7758-99-8 COPPER (II) SULFATE PENTAHYDRATE

Risk phrase :

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 43 May cause sensitisation by skin contact.
R 20/22 Harmful by inhalation and if swallowed.
R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 33 Danger of cumulative effects.
R 35 Causes severe burns.
R 49 May cause cancer by inhalation.
R 61 May cause harm to the unborn child.
For professional use only.

Safety phrase :

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 53 Avoid exposure - obtain special instructions before use.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
S 60 This material and its container must be disposed of as hazardous waste.
S 9 Keep container in a well-ventilated place.
Product submitted to restrictions on the marketing and use: see Regulation (EC) No 1907/2006.

Title for H, EUH and R indications mentioned in section 3 :

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal 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.
R 20/22	Harmful by inhalation and if swallowed.
R 22	Harmful if swallowed.
R 23/25	Toxic by inhalation and if swallowed.
R 33	Danger of cumulative effects.
R 34	Causes burns.
R 36/38	Irritating to eyes and skin.
R 38	Irritating to skin.
R 42/43	May cause sensitization by inhalation and skin contact.
R 48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R 49.C1	May cause cancer by inhalation.
R 50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 61.G2	May cause harm to the unborn child.
R 68	Possible risk of irreversible effects.

Abbreviations :

CMR: Carcinogenic, mutagenic or reprotoxic.

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 : Wassergefahrdungsklasse (Water Hazard Class).

GHS05 : Corrosion

GHS07 : Exclamation mark

GHS08 : Health hazard

GHS09 : Environment