

Réactif de Fehling A et B**L-B-T-N****Danger****SECTION 1. Identification of the substance/mixture and of the company/undertaking**

Ref. n° : 106 053
Trade name : Réactif de Fehling A et B
Company identification : JEULIN
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Use : laboratory use

SECTION 2 Hazards identification**Classification of the substance or mixture****Hazard Class and Category Code
Regulation EC 1272/2008 (CLP)**

- Health hazards : Skin corrosion - Category 1A - Danger
Serious eye damage - Category 1 - Danger
 - Environmental hazards : Hazardous to the aquatic environment - Chronic hazard - Category 3 (CLP : Aquatic Chronic 3)
- Classification EC 67/548 or EC 1999/45 : C; R35
R52-53

Label elements**Labelling Regulation EC 1272/2008 (CLP) :****• Hazard pictograms**

- Signal words : Danger
- Hazard statements : H314 : Causes severe skin burns and eye damage.
H412 : Harmful to aquatic life with long lasting effects.
- Precautionary statements
 - General : P102 : Keep out of reach of children.
 - Prevention : P280 : Wear protective gloves/protective clothing/eye protection/face protection. P273 : Avoid release to the environment.
 - Response : P305+P351+P338+P310+P321 : IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. Specific treatment. P303+P361+P352 : IF ON SKIN (or hair) : Remove immediately all contaminated clothing. Wash with plenty of soap and water.

Labelling EC 67/548 or EC 1999/45
Symbol(s) : Corrosive.





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SECTION 2 Hazards identification (continued)

- R Phrase(s)** : R35 : Causes severe burns.
R52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S Phrase(s)** : S1/2 : Keep locked up and out of reach of children.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27 : Take off immediately all contaminated clothing.
S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).
S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

SECTION 3 Composition/information on ingredients

This product is considered to be hazardous and contains hazardous components.

Substance name	Value(s)	CAS nr	EC	EC index	REACH	CERTIFICATE
Potassium sodium tartrate tétrahydraté	> 10	6381-59-5	205-698-2	-----	----	Not classified. (DSD/DPD) Not classified. (GHS)
Sodium hydroxide	> 10 %	1310-73-2	215-185-5	011-002-00-6	----	C; R35 Skin Corr. 1A+ (H314)
Sulfuric acid	< 1 %	7664-93-9	231-639-5	016-020-00-8	----	C; R35 Skin Corr. 1A+ (H314)
Eau	> 80 %	7732-18-5	-----	-----	----	Not classified. (DSD/DPD) Not classified. (GHS)
Copper (II) sulfate	< 2 %	7758-98-7	231-847-6	029-004-00-0	----	Xn; R22 Xi; R36/38 N; R50-53 Acute Tox. 4 (H302) Eye irrit. 2 (H319) Skin Irrit. 2 (H315) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

SECTION 4. First aid measures

- Inhalation : If breathing is difficult, give oxygen. If you feel unwell, seek medical advice. Assure fresh air breathing. If not breathing, give artificial respiration.
- Skin contact : Wash skin thoroughly with water. Remove contaminated clothing and shoes.
- Eye contact : In case of eye contact, immediately rinse with clean water for 10-15 minutes. Contact ophthalmologist immediately.
- Ingestion : Give nothing to drink. Do not induce vomiting because of corrosive effects. If swallowed, rinse mouth with water (only if the person is conscious).
: **Seek medical attention immediately.**

SECTION 5. Fire-fighting measures

- Prevention** : Keep away from : Metals.
- Extinguishing media**
- Suitable : Use extinguishing media appropriate for surrounding fire.
- Special exposure hazards** : Under fire conditions, hazardous fumes will be present.
Under some circumstances, may corrode certain metals, including aluminium and zinc, and generate hydrogen gas.
- Protection against fire** : Do not enter fire area without proper protective equipment, including respiratory protection.
- Special procedures** : Avoid (reject) fire-fighting water to enter environment.

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SECTION 6. Accidental release measures

- Environmental precautions** : Prevent entry to sewers and public waters.
- After spillage and/or leakage** : Clean up any spills as soon as possible, using an absorbent material to collect it. (ex: Vermiculite JEULIN réf. 150 039, absorbant pour liquides JEULIN réf. 150 027). Neutralize spills with neutralization agent such as diluted sulfuric acid, or weak acid. Flush/dilute residue with water. Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

SECTION 7. Handling and storage

- Precautions in handling and storage** : Provide local exhaust or general room ventilation. Handle and open container with care.
- Handling** : Wear suitable protective clothing. Avoid all unnecessary exposure.
Do not breathe gas, fumes, vapour or spray.
- Storage** : Close container tightly after use. Store in dry, cool, well-ventilated area. Keep away from heat. (+15°C / +25°C)

SECTION 8. Exposure controls/personal protection

- Personal protection** : Avoid all unnecessary exposure.
- Respiratory protection** : In case of insufficient ventilation, wear suitable respiratory equipment. Where exposure through inhalation may occur from use, approved respiratory protection equipment is recommended.
- Hand protection** : Wear suitable gloves resistant to chemical penetration.
- Skin protection** : Wear suitable protective clothing.
- Eye protection** : Chemical goggles or safety glasses.
- Others** : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take proper precautions to prevent the production of vapors and aerosols. A local extraction is recommended if there is a risk of producing vapors or aerosols.
- Exposure controls**
- France**
- VME [mg/m3]** : No data available.
- VME [ppm]** : No data available.
- VLE [mg/m3]** : No data available.
- VLE [ppm]** : No data available.

SECTION 9. Physical and chemical properties

- Chemical name** : Réactif de Fehling ; Liqueur de Fehling . Solution d'hydroxyde de sodium de sulfate de cuivre et de tartrate de sodium et potassium.
- Physical state** : Liquid.
- Colour** : Blue.
- Odour** : None.
- pH value** : ~10
- Molecular weight** : No data available.
- Melting point [°C]** : No data available.
- Initial boiling point [°C]** : No data available.
- Density** : ~1
- Vapour pressure [hPa]** : No data available.
- Solubility in** : Water. (20 °C) : soluble.
- Flash point [°C]** : Not applicable.
- Auto-ignition temperature [°C]** : Not applicable.
- Explosion limits**



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SECTION 9. Physical and chemical properties (continued)

- Explosion limits - lower [%] : Not applicable.
Explosion limits - upper [%] : Not applicable.
Log P octanol / water at 20°C : No data available.

SECTION 10. Stability and reactivity

- Conditions to avoid** : Absorbs carbon dioxide and moisture from the air.
Contact with metallic substances.
Heat.
- Materials to avoid** : Alkali metals: Sodium (Na), Potassium (K).
Alkaline-earth metals: Magnesium (Mg), Calcium (Ca).
Ammonium compounds.
Strong bases.
- Hazardous reactions** : This compound reacts violently with acid (very exothermic reaction).
Reacts with metals and light metals, releasing hydrogen, gas that can cause fires and explosions.
- Hazardous Polymerization** : Will not occur.
- Hazardous properties** : On contact with ordinary metals (steel, galvanized, aluminium) corrosion may occur and generate highly flammable hydrogen gas.

SECTION 11. Toxicological information

- Acute toxicity**
- Inhalation : Fumes / dust / aerosols very corrosive to the respiratory tract and mucous membranes.
Risk of pulmonary oedema.
Respiratory oedema and hemorrhage.
 - Dermal : Causes severe burns.
Necrosis.
 - Ocular : Highly corrosive to eyes.
May cause destruction of eye tissue.
Risk of serious permanent damages to eyes if the product is not rapidly removed.
Necrosis.
 - Ingestion : The ingestion causes severe corrosion can lead to tissue destruction of the mouth, throat and gastrointestinal tract.
Gastrointestinal Bleeding, stomach and esophageal perforations, necrosis and metabolic acidosis, digestive stenosis.
 - Other : Collapse.
Death in extreme cases.
Other toxic properties can not be excluded.
- Rat oral LD50 [mg/kg]** : No data available.
- Rabbit dermal LD50 [mg/kg]** : No data available.
- Rat inhalation LC50 [mg/kg]** : No data available.
- Rat inhalation LC50 [mg/l/4h]** : No data available.
- Dermal irritation (rabbit)** : No data available.
- Eyes irritation (rabbit)** : No data available.
- Mucous membrane irritation (rabbit)** : No data available.
- Chronic toxicity**
- Other : There are potential chronic health effects to consider.
- Other toxicological information** : To our knowledge, the toxicological properties have not been extensively researched. Other toxic properties can not be excluded. Observe all precautions for handling chemicals.



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SECTION 12. Ecological information

Ecological effects information	: Harmful to aquatic organisms. Harmful effect by changing the pH. Avoid release to the environment. (NaOH anhydre) Toxicity for daphnias : Daphnia Magna CE50 : 76 mg/L/24h (CuSO4 anhydre) Toxicity for daphnias : Daphnia Magna : CE50 : 0,024 mg/L/48h. (NaOH anhydre) Toxicity for fishes: O. Mykiss Cl 50 : 45,4 mg/L/96 h. L. Macrochirus CL 50 : 99 mg/L/48 h. (CuSO4 anhydre) Toxicity for fishes: CL50 : 0,1-2,5 mg/L/96h. (CuSO4 anhydre) Toxicity for algae : Sc. quadricauda CE50 : 0,1 mg/L/4h.
ThOD (gO2/g)	: No data available.
COD	: No data available.
BOD	: No data available.
BOD 5 (gO2/g)	: No data available.
Persistence and degradability	: No data available.
Bioaccumulative potential	: No data available.
Information on elimination	: Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Biodegradation [%]	: No data available.

SECTION 13. Disposal considerations

Disposal	: Dispose of this material and its container at hazardous or special waste collection point. Containers, or internal liners coming from a container, having contained this product are also considered as hazardous wastes. Do not re-use empty container. Dispose in a safe manner in accordance with local/national regulations.
Waste-disposal procedures	: Do not empty into drains. Refer to the MSDS before handling or disposing.

SECTION 14. Transport information

- Proper shipping name	: UN3266 LIQUIDE INORGANIQUE CORROSIF, BASIQUE, N.S.A., 8, II
- UN No.	: 3266
- H.I. nr :	: 80
Land transport	
- ADR/RID	: Group : II Class : 8
Sea transport	
- IMO-IMDG code	: UN 3266 Liquide inorganique corrosif, basique, n.s.a. (Réactif de Fehling).
- Class	: 8
- Packing group	: II
Air transport	
- ICAO/IATA	: UN 3266 Corrosive liquid, basic, inorganic, n.o.s. (Fehling's Reagent).
- IATA - Class or division	: 8
IATA Packing group	: II

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Other : None.

SECTION 16. Other information**Further information**

The contents and format of this MSDS are in accordance with Regulation (EC) N°1907/2006.

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