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

1.1. Product identifier
Product form: Substance
Substance name: Cupric Sulfate Anhydrous
EC-No.: 231-847-6
CAS-No.: 7758-98-7
Formula: CuSO₄

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Use of the substance/mixture: Nutrient; Dietary Supplement

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Manufacturer: Jost Chemical Co.
8150 Lackland Rd.
63114 Saint Louis, Missouri
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

Distributor: JOST CHEMICAL EUROPE SPRL
rue du Bois Portal n° 30/1-3
B - 5300 Andenne - BELGIQUE
T +32 85-552-655 - F +32 85-552-654
info@jostchemical.com

1.4. Emergency telephone number
Emergency number: For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
United States and Canada: 1-800-424-9300 / +1 703-527-3887
Global: +1 703-741-5970

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Acute toxicity (oral), Category 4
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
Hazardous to the aquatic environment — Acute Hazard, Category 1 (M=100)
Hazardous to the aquatic environment — Chronic Hazard, Category 1

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms (CLP):

GHS07 GHS09

Signal word (CLP): Warning
Hazard statements (CLP):
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.
Cupric Sulfate Anhydrous
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Precautionary statements (CLP):
- P264 - Wash hands thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves, eye protection, face protection.
- P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P321 - Specific treatment (see supplemental first aid instruction on this label).
- P330 - Rinse mouth.
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P337+P313 - If eye irritation persists: Get medical advice/attention.
- P362+P364 - Take off contaminated clothing and wash it before reuse.
- P391 - Collect spillage.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards
PBT: not yet assessed
vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Substance type</th>
<th>Product identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric Sulfate Anhydrous</td>
<td>Mono-constituent</td>
<td>(CAS-No.) 7758-98-7 (EC-No.) 231-847-6</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
- Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation.
- First-aid measures after ingestion:
  - Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation:
- Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:
- Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact:
  - Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion:
- Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation:
- AFTER INHALATION OF DUST: Dry/sore throat. Coughing. ON HEATING: Metal fume fever.

Symptoms/effects after skin contact:
- Tingling/irritation of the skin. Irritation.

Symptoms/effects after eye contact:
- Irritation of the eye tissue. Eye irritation.

Symptoms/effects after ingestion:

Chronic symptoms:

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

Treat symptomatically.
Cupric Sulfate Anhydrous
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according to Regulation (EC) No. 453/2010

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard: DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard: No data available on direct explosion hazard. No data available on indirect explosion hazard.
Hazardous decomposition products in case of fire: On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metallic fumes.

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions: Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up
For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray.
Methods for cleaning up: Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures: Observe strict hygiene. Keep container tightly closed. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
Storage conditions: Store in a well-ventilated place. Keep cool.
Incompatible products: MAGNESIUM POWDER, hydroxylamine phosphate. HYDROXYLAMINE SULPHATE.
Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage: KEEP SUBSTANCE AWAY FROM: reducing agents. (strong) bases. water/moisture.
Storage area: Store in a dry area. Keep container in a well-ventilated place. May be stored under nitrogen. Meet the legal requirements. Keep out of direct sunlight.
Special rules on packaging: SPECIAL REQUIREMENTS: hermetrical, watertight, dry, clean, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Personal protective equipment:
Dust production: dust mask with filter type P2. Gloves. Safety glasses.

Materials for protective clothing:
GIVE GOOD RESISTANCE: chloroprene rubber. chlorosulfonated polyethylene. butyl rubber. PVC. viton

Hand protection:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles. Safety glasses

Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Solid
Appearance: Grayish white to greenish white powder.
Molecular mass: 159.61 g/mol
Colour: White-grey to green-blue.
Odour: Odourless.
Odour threshold: No data available
pH: 4 (3.2 %)
Relative evaporation rate (butylacetate=1): No data available
Melting point: 560 °C
Freezing point: Not applicable
Boiling point: Not applicable
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: 560 °C
Flammability (solid, gas): Non flammable.
Vapour pressure: No data available
Relative vapour density at 20 °C: Not applicable
Relative density: 3.6
Density: 3600 kg/m³
Cupric Sulfate Anhydrous Safety Data Sheet according to Regulation (EC) No. 453/2010

Solubility : Soluble in water. Soluble in methanol. Soluble in glycerol.
- Water: 20 g/100ml
- Ethanol: 1 g/100ml

Log Pow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

 Explosive properties : No data available

 Oxidising properties : No data available

 Explosive limits : Not applicable

9.2. Other information

VOC content : 0 %

Other properties : Hygroscopic. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts exothermically with (some) compounds: (increased) risk of fire. Reacts violently with (strong) reducers. Reacts on exposure to water (moisture) with (some) metals.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Hydroxylamine phosphate. HYDROXYLAMINE SULFATE. MAGNESIUM POWDER.

10.6. Hazardous decomposition products

Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Harmful if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Cupric Sulfate Anhydrous (7758-98-7)

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>300 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg (OECD 402 method) (hydrated product) (Published data)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 1000 mg/kg (Rabbit)</td>
</tr>
</tbody>
</table>

Causes serious eye damage. : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

pH: 4 (3.2 %)

Respiratory or skin sensitisation : Not classified (Lack of data)

Germ cell mutagenicity : Not classified (Lack of data)

Carcinogenicity : Not classified (Lack of data)

Reproductive toxicity : Not classified (Lack of data)

STOT-single exposure : Not classified (Lack of data)

STOT-repeated exposure : Not classified (Lack of data)

Cupric Sulfate Anhydrous (7758-98-7)

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL (oral, rat, 90 days)</td>
<td>1000 mg/kg bodyweight/day (hydrated product; Published data)</td>
</tr>
</tbody>
</table>

Aspiration hazard : Not classified (Lack of data)

Potential adverse human health effects and symptoms : Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Dangerous for the environment.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
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Safety Data Sheet
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12.2. Persistence and degradability

Cupric Sulfate Anhydrous (7758-98-7)

Persistence and degradability: Not applicable.
Biochemical oxygen demand (BOD): Not applicable
Chemical oxygen demand (COD): Not applicable
ThOD: Not applicable
BOD (% of ThOD): Not applicable

12.3. Bioaccumulative potential

Cupric Sulfate Anhydrous (7758-98-7)

Bioconcentration factor (BCF REACH): 13 Cyprinus Carpio
Bioaccumulative potential: Bioaccumulable.

12.4. Mobility in soil

Cupric Sulfate Anhydrous (7758-98-7)

Ecology - soil: Toxic to flora.

12.5. Results of PBT and vPvB assessment

Cupric Sulfate Anhydrous (7758-98-7)

PBT: not yet assessed
vPvB: not yet assessed

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste): LWCA (the Netherlands): KGA category 05.
Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations: Do not discharge into the sewer. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

14.1. UN number

UN-No. (ADR): 3077
UN-No. (IMDG): 3077
UN-No. (IATA): 3077

14.2. UN proper shipping name

Proper Shipping Name (ADR): Environmentally hazardous substance, solid, n.o.s.
Proper Shipping Name (IMDG): Environmentally hazardous substance, solid, n.o.s.
Proper Shipping Name (IATA): Environmentally hazardous substance, solid, n.o.s.
Transport document description (ADR): UN 3077 Environmentally hazardous substance, solid, n.o.s. (Cupric Sulfate), 9, III, (-)
Cupric Sulfate Anhydrous
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according to Regulation (EC) No. 453/2010

<table>
<thead>
<tr>
<th>Transport document description (IMDG)</th>
<th>UN 3077 Environmentally hazardous substance, solid, n.o.s. (Cupric Sulfate), 9, III, MARINE POLLUTANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport document description (IATA)</td>
<td>UN 3077 Environmentally hazardous substance, solid, n.o.s. (Cupric Sulfate), 9, III</td>
</tr>
</tbody>
</table>

### 14.3. Transport hazard class(es)

**ADR**
- Transport hazard class(es) (ADR): 9
- Danger labels (ADR): 9

**IMDG**
- Transport hazard class(es) (IMDG): 9
- Danger labels (IMDG): 9

**IATA**
- Transport hazard class(es) (IATA): 9
- Hazard labels (IATA): 9

### 14.4. Packing group

- Packing group (ADR): III
- Packing group (IMDG): III
- Packing group (IATA): III

### 14.5. Environmental hazards

- Dangerous for the environment: Yes
- Marine pollutant: Yes
- Other information: No supplementary information available

### 14.6. Special precautions for user

**Overland transport**
- Transport regulations (ADR): Subject
- Classification code (ADR): M7
- Hazard identification number (Kemler No.): 90
- Orange plates: 90
- Tunnel restriction code (ADR): -

**Transport by sea**
- Transport regulations (IMDG): Subject
- Special provisions (IMDG): 274, 335, 966, 967, 969
- Limited quantities (IMDG): 5 kg
- Excepted quantities (IMDG): E1
- Packing instructions (IMDG): P002, LP02
- Special packing provisions (IMDG): PP12
- IBC packing instructions (IMDG): IBC08
- IBC special provisions (IMDG): B3
- Tank instructions (IMDG): T1, BK1, BK2, BK3
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Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW23

Air transport
Transport regulations (IATA) : Subject to the provisions
PCA Exempted quantities (IATA) : E1
PCA limited quantities (IATA) : Y956
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 956
PCA max net quantity (IATA) : 400kg
CAO packing instructions (IATA) : 956
CAO max net quantity (IATA) : 400kg
Special provisions (IATA) : A97, A158, A179, A197
ERG code (IATA) : 9L

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Cupric Sulfate Anhydrous is not on the REACH Candidate List
Cupric Sulfate Anhydrous is not on the REACH Annex XIV List
VOC content : 0 %
Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
Listed on the Canadian DSL (Domestic Substances List)

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information
Indication of changes:
This sheet was updated (refer to the date at the top of this page).

Full text of H- and EUH-statements:

| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4
Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2
Skin Irrit. 2 | Skin corrosion/irritation, Category 2

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.