



## 1. PRODUCT IDENTIFICATION

SAFETY DATASHEET NAME:	Pentahydrate Copper Sulfate
CHEMICAL NAME:	Copper (II) Sulfate
CHEMICAL FORMULA:	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
SYNONYMS:	Sulfuric acid pentahydrate copper (II) salt
COLOR:	Vitriol Blue
N° CAS =	7758-99-8
P.M =	249.6
SUPPLIER INFORMATION:	TECNOLOGÍA TOTAL S.A.C. Avenida Mariscal La Mar 638, Miraflores – Lima. +51 1 7151545.

## 2. HAZARDS IDENTIFICATION

Harmful if swallowed. Irritating to eyes and skin. Very toxic to aquatic organisms, it can cause long-term negative effects in the aquatic environment.

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|------------------------|-------------------|
| - Health (Blue):       | 2 – Moderate risk |
| - Flammability (Red):  | 0 – Insignificant |
| - Reactivity (Yellow): | 0 – Insignificant |
| - Specials (White) -   | Empty             |



## 3. COMPOSITION

Purity: 98 %  
Present copper: 25 %  
Heavy metals: 40ppm at most.

## 4. FIRST AID MEASURES

### GENERAL MEASURES

If unconscious, never give anything by mouth nor induce vomiting.

### AFTER INHALATION

Remove the victim into fresh air. Seek medical help.

### AFTER SKIN CONTACT

Wash immediately with plenty of water. Remove affected clothing.

### AFTER EYE CONTACT

Rinse immediately with plenty of water. Obtain medical attention if pain persists.

### AFTER INGESTION

Give lots of water to drink. Do NOT induce vomiting. Obtain medical attention.



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**5. FIREFIGHTING MEASURES**

**EXTINGUISHING MEDIA:**

Adapt extinguishing media to the environment.

**SPECIAL HAZARDS:**

Non combustible. Incombustible. In case of fire, SO<sub>x</sub> toxic vapors can appear.

**PROTECTION DURING FIREFIGHTING:**

Do not enter fire area without proper protective equipment.

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**6. ACCIDENT RELEASE MEASURES**

**PERSONAL PRECAUTIONS:**

Do not inhale the dust.

**ENVIRONMENTAL PRECAUTIONS:**

Prevent soil and water pollution. Prevent spreading in sewers.

**METHODS FOR CONTAINMENT AND CLEANING UP**

Scoop solid spill into closing containers. Minimize generation of dust. Deposit in waste containers for later disposal in accordance with current regulations.

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**7. HANDLING AND STORAGE**

**SAFE HANDLING:**

Avoid raising dust. Provide good ventilation. Keep away from naked flames/heat.

**SAFE STORAGE:**

Store in a dry area. Keep container in a well-ventilated place- Keep substance away from heat sources.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:**

Dust mask with filter type P2. Wear appropriate mask.

**HAND PROTECTION:**

Wear protective gloves.

**EYE PROTECTION:**

Protective goggles.

CONTROLS OF THE EXPOSURE OF THE ENVIRONMENT:



**PARTICULAR HYGIENE MEASURES:**

Take off contaminated clothing. Wear suitable work clothes. Wash your hands before breaks and at the end of work.

**ENVIRONMENTAL EXPOSURE CONTROLS:**

Comply with current local legislation on environmental protection.

The supplier of the protection means must specify the type of protection to be used for handling the product, indicating the type of material and, where appropriate, the penetration time of said material, in relation to the amount and duration of exposure.

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**9. CHEMICAL AND PHYSICAL PROPERTIES**

Appearance: Crystalline blue powder.

Odour: Odourless.

Melting point: >110°C

Density (20/4): 2.284 gr/l

Solubility (water): 330 g/l at 20°C

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**10. STABILITY AND REACTIVITY**

**CONDITIONS TO AVOID:**

Direct sunlight. Extremely high or low temperatures.

**INCOMPATIBLE MATERIALS:**

Strong acids. Strong bases.

**HAZARDOS DECOMPOSITION PRODUCTS:**

Sulfur compounds.

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**11. TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY:**

- LD50 oral rat: 300 mg/kg (referred to anhydrate substance)
- LD50 oral man: 50 mg/kg.

**POTENTIAL ADVERSE HUMAN HEALTH EFFECTS AND SYMPTOMS:**

- After inhalation of dust: Respiratory irritations. It can cause edema in the respiratory tract.
- After skin contact: skin and mucosa irritations.
- After eye contacts: Irritations.
- After ingestion: Irritations in mucous membranes of the mouth, throat, esophagus and intestinal tract. It can cause stomach pain, vomiting, intestinal disorders, hypotension, disturbances of circulation, collapse.

Watch for usual precautions in handling chemical products.



## 12. ECOLOGICAL INFORMATION

### ENVIRONMENT:

Copper accumulates in plants and animals, but does not appear to biomagnify from plants to animals. This lack of biomagnification commonly appears with heavy metals. In the air, copper sprays (in general) have a residence time of 2 to 10 days in an uncontaminated environment and 0.1 to 4 days in polluted, urban areas.

### PHYSICAL:

No se encontró evidencia para indicar que no hay ningún proceso de biotransformación para los compuestos de cobre que tendría una repercusión importante en el destino de cobre en ambientes acuáticos.

### RECEIVING MEDIUM:

Risk to the aquatic environment = High

Risk to the Earth environment = Medium

### OBSERVATIONS:

Highly toxic throughout the food chain. Significant eco-toxic effect in aquatic environments.

### OTHER POSSIBLE EFFECTS ON THE NATURAL ENVIRONMENT:

Do not allow its incorporation into the soil or into aquifers. Bactericidal effect.

## 13. DISPOSAL CONSIDERATIONS

### SUBSTANCE OR PREPARATION:

In the European Union, there are no homogeneous guidelines for the elimination of chemical residues, which have the character of special residues, their treatment and elimination being subject to the internal regulations of each country. Therefore, in each case, it is necessary to contact the competent authority, or the legally authorized managers for waste disposal.

2001/573 / EC: Council Decision of 23 July 2001 amending Commission Decision 2000/532 / EC as regards the list of waste.

Council Directive 91/156 / EEC of 18 March 1991 amending Directive 75/442 / EEC on waste.

In Spain: Law 10/1998, of April 21, on Waste.

Published in BOE 04/22/98.

ORDER MAM / 304/2002, of February 8, by which the waste disposal recovery operations and the European list of waste are published. Published in BOE 02/19/02.

### CONTAMINATED CONTAINERS:

Containers and containers contaminated with dangerous substances or preparations will have the same treatment as the products themselves.

Directive 94/62 / EC of the European Parliament and of the Council of December 20, 1994, on packaging and packaging waste.

In Spain: Law 11/1997, of April 24, on Containers and Packaging Waste.

Published in BOE 04/25/97.

Royal Decree 782/1998, of April 30, which approves the Regulation for the development and execution of Law 11/1997, of April 24, on Packaging and Packaging Waste. Published in BOE 05/01/98.



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14. TRANSPORT INFORMATION

**GROUND TRANSPORTATION (ADR/RID)**

**Proper shipping name:** Environmentally hazardous substances, solid, N.O.S.  
ONU 3077 Class: 9 Packing group: III

**MARINE TRANSPORT (IMDG):**

**Proper shipping name:** Environmentally hazardous substances, solid, N.O.S.  
ONU 3077 Class: 9 Packing group: III

**AIR TRANSPORT (ICAO-IATA):**

**Proper shipping name:** Environmentally hazardous substances, solid, N.O.S.  
ONU 3077 Class: 9 Packing group: III

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15. REGULATORY INFORMATION

**LABELING ACCORDING TO THE EC DIRECTIVE**

Symbols: Harmful Dangerous for the environment

Hazard statements: Harmful Dangerous for the environment

**R phrases:**

22: harmful if swallowed

36/38: Irritating to eyes and skin.

50: Very toxic to aquatic organisms

53: May cause long-term negative effects for the environment:

**S-phrases:**

22-60-61 Do not breathe dust.

Eliminate the product and its recipient as dangerous waste. Avoid release to the environment.

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16. OTHER INFORMATION

The information in this document is considered accurate and represents the best information currently available to us.