

# Material Safety Data Sheet



## Copper Sulphate Pentahydrate

### 1. Product and company identification

**Common name** : Copper Sulphate  
**Trade name** : Copper Sulphate Pentahydrate  
**Material uses** : Not available.  
**Supplier/Manufacturer** : Pestell Minerals & Ingredients  
141 Hamilton Road  
New Hamburg, Ontario  
Canada, N3A 2H1  
Tel : (519) 662-2877  
Fax : (519) 662-6242  
E-mail: pestellgroup@pestell.com  
**In case of emergency** : CANUTEC (613) 996-6666  
**MSDS authored by:** : Kemika XXI Inc. + 1-450-435-7475

7/12/2010

### 2. Hazards identification

**Physical state** : Solid. (Crystals.)  
**Odor** : Odorless.  
**Color** : Blue.  
**Hazard status** : This material is classified hazardous under OSHA regulations in the United States and the WHMIS Controlled Product Regulation in Canada.  
**Emergency overview** : WARNING !  
HARMFUL IF SWALLOWED.  
CAUSES EYE IRRITATION.  
MAY CAUSE SKIN IRRITATION.  
Do not ingest. Avoid contact with skin and clothing. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.  
**Potential acute health effects**  
**Eyes** : Irritating to eyes.  
**Skin** : Moderately irritating to the skin.  
**Inhalation** : No known significant effects or critical hazards.  
**Ingestion** : Harmful if swallowed.  
**Potential chronic health effects** : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.  
Mutagenic effects: Not available.  
Teratogenic effects: Not available.  
**Medical conditions aggravated by over-exposure** : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated exposure of the eyes to a low level of dust can produce eye irritation.

See toxicological information (section 11)

### 3. Composition/information on ingredients

#### United States

Name	CAS number	%
Copper (II) sulphate pentahydrate	7758-99-8	60 - 100

**Canada**

Name	CAS number	%
Copper (II) sulphate pentahydrate	7758-99-8	60 - 100

**4 . First aid measures**

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

**5 . Fire-fighting measures**

- Flammability of the product** : Non-flammable.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
  - Not suitable** : None known.
- Special exposure hazards** : No specific hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**6 . Accidental release measures**

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

**7 . Handling and storage**

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

**8 . Exposure controls/personal protection****United States**

Product name	Exposure limits
Copper (II) sulphate pentahydrate	<b>ACGIH TLV (United States).</b> TWA: 1 mg/m <sup>3</sup> 8 hour(s). Form: Dusts and mists <b>OSHA PEL (United States).</b> TWA: 1 mg/m <sup>3</sup> 8 hour(s). Form: Dusts and mists

## Canada

**Product name**

Copper (II) sulphate pentahydrate

**Exposure limits****ACGIH TLV (Canada).**TWA: 1 mg/m<sup>3</sup> 8 hour(s). Form: Dusts and mists**Engineering measures**

: No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protection****Eyes**

: Safety glasses.

**Skin**

: Lab coat.

**Respiratory**

: A respirator is not needed under normal and intended conditions of use.

**Hands**

: Natural rubber (latex).

**HMIS Code/Personal protective equipment**

: B

**Personal protection in case of a large spill**

: Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

**Hygiene measures**

: Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.

## 9 . Physical and chemical properties

**Physical state**

: Solid. (Crystals.)

**Color**

: Blue.

**Odor**

: Odorless.

**pH**

: 3.7 to 4.2 (Conc. (% w/w): 10) [Acidic.]

**Melting/freezing point**

: 110°C (230°F)

**Relative density**

: 2.284 (Water = 1)

**Vapor density**

: 8.6 (Air = 1)

**Solubility**

: Easily soluble in cold water, hot water.

## 10 . Stability and reactivity

**Stability and reactivity**

: The product is stable.

**Incompatibility with various substances**

: Reactive with oxidizing materials.

**Hazardous polymerization**

: Will not occur.

**Conditions of reactivity**

: Not available.

## 11 . Toxicological information

### Toxicity data

Product/ingredient name	Test	Result	Route	Species
Copper (II) sulphate pentahydrate	LD50	300 mg/kg	Oral	Rat
	LD50	>5050 mg/kg	Dermal	Rabbit

### Acute Effects

<b>Eyes</b>	: Irritating to eyes.
<b>Skin</b>	: Moderately irritating to the skin.
<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Ingestion</b>	: Harmful if swallowed.
<b>Potential chronic health effects</b>	: Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH. Mutagenic effects: Not available. Teratogenic effects: Not available.

## 12 . Ecological information

### Ecotoxicity data

Product/ingredient name	Species	Period	Result
Copper (II) sulphate pentahydrate	Daphnia magna (EC50)	48 hour(s)	0.18 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.032 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.13 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	0.892 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	1.2 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	1.3 mg/l

<b>Environmental precautions</b>	: Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
<b>Products of degradation</b>	: These products are sulfur oxides. Some metallic oxides.
<b>Toxicity of the products of biodegradation</b>	: The products of degradation are less toxic than the product itself.

## 13 . Disposal considerations

<b>Waste disposal</b>	: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.
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## 14 . Transport information

**AERG** : 171

Regulatory information	Proper shipping name	Class	UN number	PG	Label
<b>UN / IMDG / IATA Classification</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper (II) sulphate pentahydrate)	9	UN3077	III	
<b>DOT Classification</b>	RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper (II) sulphate pentahydrate). Marine pollutant (Copper (II) sulphate pentahydrate)	9	UN3077	III	

**TDG Classification** ENVIRONMENTALLY HAZARDOUS 9 UN3077 III  
 SUBSTANCE, SOLID, N.O.S. (Copper (II) sulphate pentahydrate)



<b>Additional information</b>	<b>UN</b>	<b>IMDG</b>	<b>IATA</b>	<b>DOT</b>	<b>TDG</b>
	-	-	-	<b>Marine pollutant</b> Severe marine pollutant (PP)	<b>Remarks</b> Not regulated by road or by rail, regulated for marine transport only. See TDG 2.43(b)(ii).
				<b>Remarks</b> This product is regulated according to those regulations as per RQ 10 lbs (4.54 kg).	

## 15 . Regulatory information

### United States

**HCS Classification** : Toxic material  
 Irritating material

**U.S. Federal regulations** : TSCA 6 proposed risk management: Lead  
 TSCA 8(b) inventory: All components listed.  
 TSCA 12(b) annual export notification: Lead

SARA 302/304/311/312 extremely hazardous substances: No products were found.  
 SARA 302/304 emergency planning and notification: No products were found.  
 SARA 302/304/311/312 hazardous chemicals: Copper (II) sulphate pentahydrate  
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Copper (II) sulphate pentahydrate: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: Copper (II) sulphate pentahydrate; Lead; Cadmium; Arsenic  
 Clean Water Act (CWA) 311: No products were found.  
 Clean Air Act (CAA) 112 accidental release prevention: No products were found.  
 Clean Air Act (CAA) 112 regulated flammable substances: No products were found.  
 Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

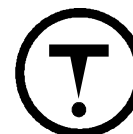
**State regulations** : Pennsylvania RTK: Copper (II) sulphate pentahydrate: (environmental hazard, generic environmental hazard); Lead: (environmental hazard, generic environmental hazard); Cadmium: (special hazard, environmental hazard, generic environmental hazard); Arsenic: (environmental hazard, generic environmental hazard)  
 Massachusetts RTK: Lead; Cadmium; Arsenic  
 New Jersey: Copper (II) sulphate pentahydrate; Lead; Cadmium; Arsenic

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Lead	Yes.	Yes.	15 µg/day (ingestion)	Yes.
Cadmium	Yes.	Yes.	0.05 µg/day (inhalation)	Yes.
Arsenic	Yes.	No.	0.06 µg/day (inhalation)	No.

### Canada

**WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).



DSL : All components listed.

This product has been classified in accordance with the hazard criteria of the Canadian CPR and the United States OSHA. This MSDS contains all the information required by the CPR and OSHA, the American National Standard Institute (ANSI) Z400.1.

**International lists** : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

## 16 . Other information

**Label requirements (U.S.A.)** : HARMFUL IF SWALLOWED.  
CAUSES EYE IRRITATION.  
MAY CAUSE SKIN IRRITATION.

**Hazardous Material Information System (U.S.A.)** :

### HMIS RATING

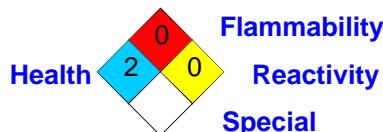
Health	2
Fire hazard	0
Physical Hazard	0
Personal protection	B

### HAZARD RATINGS

4- Extreme  
3- Serious  
2- Moderate  
1- Slight  
0- Minimal

See section 8 for more detailed information on personal protection.

**National Fire Protection Association (U.S.A.)** :



**References** : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

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**Version** : 1

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.