



MATERIAL SAFETY DATA SHEET

COPPER SULPHATE PENTAHYDRATE

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1. SUPPLIER / MANUFACTURER INFORMATION

1.1	Supplier/Manufacturer	:	Meridian World Sdn. Bhd.
1.2	Supplier/Manufacturer Address	:	Lot 39, Jalan PKNK 1/6, Kawasan Perusahaan Sungai Petani, 08000 Sungai Petani, Kedah Darul Aman.
1.3	Telephone No.	:	604-4411868
1.4	Facsimile No.	:	604-4412868

2. PRODUCT INFORMATION

2.1	Product Name	:	Copper Sulphate Pentahydrate
2.2	Other Name	:	Copper Sulphate; Blue Vitrol; Blue Stone; Blue Copperas
2.3	Chemical Name	:	Copper (II) Sulphate Pentahydrate
2.4	Chemical Formula	:	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
2.5	UN No	:	N/A

3. COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No	Content (%)
Copper Sulphate Pentahydrate	7758-99-8	97% as $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

4. PHYSICAL & CHEMICAL PROPERTIES

4.1	Appearance	:	Blue powder
4.2	Odor	:	Insignificant
4.3	Boiling Point	:	Not applicable
4.4	Melting Point (decomposes)	:	Not applicable
4.5	Flash Point	:	> 100°C (Closed up)
4.6	Specific Gravity (Water = 1)	:	2.284 @ 20°C
4.7	Molecular Weight	:	249.68
4.8	pH (5% solution)	:	4
4.9	Solubility in Water	:	203 g/1 100ml (100°C)

5. HAZARD IDENTIFICATION

5.1	Classification	:	None.	
5.2	Most Important Hazard	:	Skin	May cause irritation and itching. Prolonged or repeated skin exposure may cause dermatitis.
			Eyes	Dust may cause irritation. Contact may cause conjunctivitis, ulceration, or clouding of the cornea.
			Inhalation	Causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.
			Ingestion	May cause burning pain in the mouth, esophagus, and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects, paralysis and coma. Death may occur from shock or renal failure. Fatalities have occurred as a result of ingesting gram quantities of copper sulfate.

6. FIRST AID MEASURES

6.1	Eye Contact	:	Irrigate with water for 15 minutes. If any irritation persists, obtain medical advice.
6.2	Skin Contact	:	Wash contaminated area with water.
6.3	Inhalation	:	Remove victim to fresh air area. If recovery is delayed, seek medical advice.
6.4	Ingestion	:	Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.

7. FIRE FIGHTING MEASURES

7.1	Hazchem No.	:	N/A
7.2	Fire Hazards	:	Not combustible material.
7.3	Flash Point (Closed up)	:	> 100°C
7.4	Extinguishing Media	:	Product will not burn; use media appropriate for surrounding material.

7.5	Special Fire Fighting Procedure	:	Fire Fighters should wear full protective clothing with proper eye and skin protection and Self Contained Breathing Apparatus (SCBA).
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8. ACCIDENTAL RELEASE MEASURE

8.1	Spillage	:	Sweep up the residual and put in the chemical waste container. Flush the spilled area with plenty of water.
8.2	Environmental Information	:	Prevent spills from entering sewers, water sources and rivers.

9. HANDLING AND STORAGE

9.1	Handling	:	Do not eat, drink or smoke while handling the product. Wash hands after use. Remove contaminated clothing immediately and launder before use.
9.2	Storage	:	Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Solutions are corrosive to mild steel. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

10. EXPOSURE CONTROL AND PERSONAL PROTECTION

10.1	Engineering Control	:	Adequate ventilation required.	
10.2	Personal Protection	:	Respiratory	Dust or filter respirator.
		:	Skin	Wear appropriate protective clothing & gloves.
		:	Eye	Chemical safety goggles.
10.3	Exposure Limit	:	TLV not established for this materials	

11. STABILITY AND REACTIVITY

11.1	Stability	:	Stable at room temperature in closed containers under normal storage and handling conditions.
11.2	Hazardous decomposition	:	When heated to decomposition cupric oxide and sulfur oxide may form
11.3	Hazardous Polymerization	:	Will not occur
11.4	Incompatibilities	:	Substance will ignite hydroxylamine. Solutions are acidic and can react with magnesium to evolve flammable hydrogen gas. May react with acetylene to form dangerous acetylides.
11.5	Conditions to Avoid	:	Incompatibles

12. TOXICOLOGICAL INFORMATION

12.1	Toxicity information	:	Oral LD50 (rat): 300 mg/kg Skin LD50 (rat): > 2 g/kg
12.2	Irritating data	:	Ingestion May cause mild irritation of the mouth and throat, salivation, abdominal cramps, nausea, vomiting, diarrhea, shock.
		:	Skin Can cause mild irritation.
		:	Eye Causes severe eye irritation and may cause eye damage.
		:	Inhalation Dust may irritate respiratory tract and mucous membranes.
		:	Chronic No data available.
12.3	Carcinogenicity	:	No information available.
12.4	Epidemiology	:	No information available.
12.5	Teratogenicity	:	No information available.
12.6	Reproductive Effects	:	No information available.
12.7	Neurotoxicity	:	No information available.
12.8	Mutagenicity	:	DNA Inhibition: Human, Lymphocyte = 76 umol/L Unscheduled DNA Aynthesis: Rat, Liver = 31 umol/L Cytogenetic Analysis: Rat, Ascites tumor = 300 mg/kg Micronucleus Test: Mouse, Intraperitoneal = 5 mg/kg

13. ECOLOGICAL INFORMATION

13.1	Environmental Fate	:	No Data.
13.2	Aquatic Toxicity	:	Very toxic to aquatic organisms – may cause long term damage in the environment. LC50 (<i>L.macorchirus</i>): 0.7 – 1.1 mg/l


14. DISPOSAL CONSIDERATIONS

14.1	Disposal should be in accordance with Environment Quality (Scheduled Wastes) Regulations 2005 and other regulation issued by DOE or local authority.		
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15. TRANSPORT INFORMATION

15.1	Name	:	RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CUPRIC SULFATE)
15.2	Hazard Class/Division	:	9
15.3	Packing Group	:	III
15.4	UN No.	:	3077

16. REGULATORY INFORMATION

16.1	Danger Symbol	:	XN
16.2	Classification	:	Harmful / Irritant
16.3	Risk Phrases	:	R22 – Harmful if swallowed. R36/38 – Irritating to Eyes and Skin.
16.4	Safety Phrases	:	S2 – Keep out of reach of children S22 – Do not breathe dust.
16.5	Hazard Symbol	:	

17. OTHER INFORMATION

The information contained herein based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.