



# COPPER SULPHATE PENTAHYDRATE

## Safety data sheet- MSDS

Update version -IV-

### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Copper Sulphate
Other Names:	Sulfuric acid, copper (II) salt pentahydrate; Cupric sulphate pentahydrate; Bluestone; Blue vitriol; Copper vitriol.
Product Code:	N/A
Recommended Use:	As a fertilizer ingredient. Animal Feed Supplement, electroplating, Flotation Grade
Restrictions of Use:	Refer to Section 15
Company Identification:	Dron Industries
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### Section 2 - HAZARDS IDENTIFICATION

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval No: Additives, Process Chemicals and Raw Materials (subsidiary) - HSR002503

Pictograms:



Signal Word:

Warning

HSNO Classification

Acute oral toxicity Cat. 4

Skin irritation Cat. 2

Eye irritation Cat. 2

Hazard Code

H302

H315

H319

Hazard Statement

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

Skin sensitisation Cat. 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity – repeated exposure Cat. 2	H373	May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment Acute/chronic Cat. 1	H400/H410	Very toxic to aquatic life with long lasting effects.
Hazardous to terrestrial vertebrates	H433	Hazardous to terrestrial vertebrates.

<b>Prevention Code</b>	<b>Prevention Statement</b>
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dust.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.

<b>Response Code</b>	<b>Response Statement</b>
P101	If medical advice is needed, have product container or label at hand.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P362	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician 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.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

<b>Storage Code</b>	<b>Storage Statement</b>
None allocated	

<b>Disposal Code</b>	<b>Disposal Statement</b>
P501	Dispose of according to Local Regulations or Authorities

### Section 3: COMPOSITION INFORMATION

<b>INGREDIENT</b>	<b>CAS No.</b>	<b>CONTENT</b>
Copper (II) sulphate pentahydrate	7758-99-8	99%

## Section 4 - FIRST AID MEASURES

### Routes of Exposure:

<b>If in eyes:</b>	Flush with plenty of water for several minutes, holding eyelids open if necessary. Remove contact lenses if present and easy to do. If eye irritation persists: Get medical advice/attention.
<b>If on skin:</b>	Remove contaminated clothing and wash before reuse. Wash affected area thoroughly with soap and water. If skin irritation or rash occurs: Get medical advice/attention.
<b>If ingested:</b>	Rinse mouth. Never give anything by mouth to an unconscious person. If swallowed DO NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
<b>If inhaled:</b>	Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance if needed.

### Most important symptoms and effects, both acute and delayed

#### Symptoms:

<b>Eyes:</b>	Causes severe eye irritation.
<b>Skin:</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Ingested:</b>	Harmful if swallowed. Ingestion of large quantities may lead to vomiting, abdominal pain, dizziness, convulsions, shock, coma, and possible death.
<b>Inhaled:</b>	Irritation of mucous membranes (nose & throat). Inhalation of large amounts may lead to symptoms shown for ingestion.
<b>Chronic:</b>	May cause damage to organs through prolonged or repeated exposure. Chronic exposure can lead to kidney damage, liver enlargement, jaundice and nervous system damage, dermatitis.

## Section 5 - FIRE FIGHTING MEASURES

<b>Hazard Type</b>	Non-Flammable
<b>Hazards from combustion products</b>	Sulphur oxides, copper oxides. May release copper dusts and fume.
<b>Suitable Extinguishing media</b>	Use extinguishing media suitable for surrounding area.
<b>Precautions for firefighters and special protective clothing</b>	Breathing apparatus and protective gloves.
<b>HAZCHEM CODE</b>	22

## Section 6: ACCIDENTIAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures:

Wear appropriate protective clothing as detailed in Section 8. Exclude non-essential people from the area.

### Environmental precautions:

Avoid from entering drains, waterways or sewers.

### Methods and material for containment and cleaning up:

Contain spill and sweep up. Collect and place in sealable containers. Avoid generating dust. Dispose of according to Section 13.

## Section 7: HANDLING AND STORAGE

<b>Handling:</b>	Read label before use.
	Do not breathe dust. Avoid generating dusts. Use only outdoors or in a well-ventilated area.
	Wash hands thoroughly after handling.
	Do not eat, drink or smoke when using this product.
	Contaminated work clothing should not be allowed out of the workplace.
	Avoid release to the environment.
	Wear protective clothing as detailed in Section 8.
	Use personal protective equipment as required.
<b>Storage:</b>	In case of inadequate ventilation wear respiratory protection.
	Store away from incompatible materials listed in Section 10.
	Keep out of the reach of children. Keep container tightly closed.
	Store in sealed packaging in cool, dry, well ventilated area.

## Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

### WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA	STEL
	ppm mg/m <sup>3</sup>	ppm mg/m <sup>3</sup>

No exposure limits have been assigned for this product.

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WES-STEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2019 11<sup>TH</sup> EDITION.

#### Engineering Controls:

If dusts are generated use local extraction to control.

#### Personal Protection Equipment



<b>Eyes:</b>	Safety glasses. If dusts present wear goggles. Ensure eye wash facilities should be available.
<b>Skin/Hands:</b>	When contact with product is likely, wear protective gloves and overalls
<b>Respiratory:</b>	If dusts present wear dust mask.
<b>General:</b>	Do not eat, drink or smoke while using this product. Remove protective clothing and wash daily after work. Contaminated clothing should not be allowed out of the workplace.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Crystals or granules
<b>Colour</b>	Blue
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available

<b>pH</b>	(50g.L <sup>-1</sup> in water, 20°C) 3.5-4.5
<b>Boiling Point</b>	Not available
<b>Melting Point</b>	90-245°C (release of crystalline water)
<b>Freezing Point</b>	Not available
<b>Flash Point</b>	Not available
<b>Flammability</b>	Not available
<b>Upper and Lower Explosive Limits</b>	Not available
<b>Vapour Pressure</b>	Not available
<b>Vapour Density</b>	Not available
<b>Specific Gravity</b>	2.29 g/cm <sup>3</sup>
<b>Bulk Density</b>	1225 kg.m-3
<b>Water Solubility</b>	Soluble
<b>Partition Coefficient:</b>	Not available
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	340-650°C
<b>Kinematic Viscosity</b>	Not available
<b>Particle Characteristics</b>	Not available

## Section 10: STABILITY AND REACTIVITY

<b>Stability of Substance</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Not available
<b>Conditions to Avoid</b>	Heat. Releases water of crystallisation when heated. High temperatures may result in release of copper fume.
<b>Incompatible Materials</b>	Hydroxylamine, acetylene.
<b>Hazardous Decomposition Products</b>	Sulphur oxides, copper oxides. May release copper dusts and fumes.

## Section 11: TOXICOLOGICAL INFORMATION

### Acute Effects:

<b>Swallowed</b>	Harmful if swallowed. Ingestion of large quantities may lead to vomiting, abdominal pain, dizziness, convulsions, shock, coma, and possible death. LD50 (oral, rat)960 mg.kg <sup>-1</sup>
<b>Dermal</b>	Not applicable.
<b>Inhalation</b>	Not triggered however if inhaled irritation of mucous membranes (nose & throat). Inhalation of large amounts may lead to symptoms shown for ingestion.
<b>Eye</b>	Causes severe eye irritation.
<b>Skin</b>	Causes skin irritation. May cause an allergic skin reaction.

### Chronic Effects:

<b>Carcinogenicity</b>	Not applicable.
<b>Reproductive Toxicity</b>	Not applicable.
<b>Germ Cell Mutagenicity</b>	Not applicable.
<b>Aspiration</b>	Not applicable.
<b>STOT/SE</b>	Not applicable.

**STOT/RE**

May cause damage to organs through prolonged or repeated exposure. Chronic exposure can lead to kidney damage, liver enlargement, jaundice and nervous system damage, dermatitis.

## Section 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects. Hazardous to terrestrial vertebrates.

<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulation</b>	No data available.
<b>Mobility in Soil</b>	No data available.
<b>Other adverse effects</b>	No data available.

Do not allow to enter waterways.

## Section 13: DISPOSAL INFORMATION

Disposal Method:	Dispose of product only by using according to label or at an approved landfill. Recycle where possible. Do not contaminate bodies of water with chemical or empty container. Refer to the Local council bylaws and Land Waste Management Authority. Dissolved material in excess water is normally suitable for disposal in storm water system.
Container Disposal:	Rinse containers thoroughly prior to re-use. Otherwise render unusable, and dispose of as hazardous waste.
Precautions or methods to avoid:	Do not allow to enter waterways.

## Section 14: TRANSPORT INFORMATION



### Road, Rail, Sea and Air Transport

<b>UN No</b>	<b>3077</b>
<b>Class - Primary</b>	<b>9</b>
<b>Packing Group</b>	<b>III</b>
<b>Proper Shipping Name</b>	<b>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S</b>
<b>Marine Pollutant</b>	<b>Yes</b>
<b>Special Provisions</b>	If the product's individual container is below 5kg, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

## Section 15: REGULATORY INFORMATION

This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

**EPA Approval Code:** Additives, Process Chemicals and Raw Materials (subsidiary) - HSR002503



<b>GHS Classification:</b>	Acute oral toxicity Cat. 4 Skin irritation Cat. 2 Eye irritation Cat. 2 Skin sensitisation Cat. 1 Specific target organ toxicity – repeated exposure Cat. 2 Hazardous to the aquatic environment Acute/chronic Cat. 1 Hazardous to terrestrial vertebrates
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<b>HSW (HS) Regulations 2017</b>	<b>Trigger Quantity</b>
Signage Trigger Quantities (Schedule 3)	100kg
Emergency Response Plan (Schedule 5)	100kg
Secondary Containment (Schedule 5)	100kg
Tracking (Schedule 26)	Not required
Certified Handlers	Not required
Restrictions of use	None known.

## Section 16: OTHER INFORMATION

### Glossary

	Category
Cat	Category
EC <sub>50</sub>	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC <sub>50</sub>	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD <sub>50</sub>	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

### References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

### Disclaimer

This Safety Data Sheet (SDS) has been prepared by Dron Industries based on information provided by the manufacturer and reputable third-party sources. It reflects the current understanding of the product's safety and handling requirements at the time of publication. While Dron Industries has made every effort to ensure the accuracy and currency of the information, no warranty is given as to its completeness or reliability. To the extent permitted by law, Dron Industries accepts no liability for any loss, injury, or damage resulting from reliance on this SDS. For further information, please contact Dron Industries directly.