



# FABRICA DE SULFATO EL AGUILA S.A. DE C.V.

## SAFETY DATA SHEET

CAL – SDS – 1 - 06

### Quimag Quimicos Aguila Copper Sulfate Crystal

**Product Name:** Copper Sulfate Pentahydrate

Date Revised: January, 2018

#### Section 1 – Identification.

**Chemical Name:** Copper Sulfate Pentahydrate

**CAS #:** 7758-99-8

**Synonyms:** Bluestone; Blue Vitriol; Cupric sulfate

**Product Use:** For Commercial Use

**GHS (Globally Harmonized System):** 2833 2501

**Company Name:**

Fabrica de Sulfato el Aguila, S.A. de C.V.

Phone: (52+33) 3688-6719

Carr. Guadalajara-Chapala Km. 17.5 m 8100

Tlajomulco de Zuñiga, Jalisco C.P. 45640 Mexico

Emergency: CHEMTREC (USA) (800) 424-9300  
(24 hours)

#### Section 2 – Hazards identification.

**Product Classification :**

**GHS Classification (Globally Harmonized System).**

Acute Toxicity, Category 4, Oral, H302

Eye Irritation, Category 1, H318

Chronic aquatic environment, Category 1, H410

Signal word:

Danger

Hazard Statements:

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Hazard pictograms:



Precautionary Statements:

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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; P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P330 Rinse mouth.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with local authorities requirements.

P270 Do not eat, drink or smoke when using this product.

P264 Wash ... thoroughly after handling.

P321 Specific treatment (see ... on this label).

### Emergency Overview:

Copper Sulfate Crystal is a blue crystalline odorless solid. Potentially fatal if swallowed. May cause irritation to the eyes and skin. Fire may produce irritating, corrosive and / or toxic fumes. Firefighters should use full protective equipment and clothing

### Section 3 – Composition / Information on Ingredients

CAS #	Components	Percentage	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
7758-99-8	Sulfato de cobre Pentahidratado	99%	N	N	N	Y	Y	1 mg/M3	1 mg/M3	1 mg/M3

Chemical Name: Copper Sulfate Pentahydrate.

Synonymous: Blue Vitriol; Copper Sulfate

Formula:  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

No. CE: 231-847-6

Molar Mass: 249,68 g/mol

CAS #: 7758-99-8

<b>Section 4 - First aid measures</b>
---------------------------------------

**Route(s) of Entry:**

Eye, Skin, Ingestion

**Health Hazards (Acute and Chronic):**

Can cause skin and eye irritation. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated contact may cause conjunctivitis.

**Signs and Symptoms:**

EYE: Can cause severe eye irritation and may result in irreversible eye damage.

SKIN CONTACT: Can cause severe skin irritation. May cause localized discoloration of the skin.

INGESTION: Can result in digestive tract irritation with abdominal pain.

**Emergency First Aid Procedure:**

If in eyes:

< Flush with plenty of water. Call a physician.

If on skin:

< Wash with plenty of soap and water. Get medical attention.

If swallowed:

< Drink promptly a large quantity of milk, egg white, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol.

**Other Health Warnings:**

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

<b>Section 5 – Fire-Fighting Measures</b>
---

**Flash Point:** \*

**Upper Flammable Limit:** \*

**Auto Ignition:** \*

**Rate of Burning:** \*

**Method Used:** \*

**Lower Flammable Limit:** \*

**Flammability Classification:** \*

\* see Section 9.

**General Fire Hazards:**

Copper Sulfate Pentahydrate is not combustible, but may decompose in the heat of a fire to produce corrosive and/or toxic fumes.

**Hazardous Combustion Products:**

Sulfur oxides and copper fumes

**Extinguishing Media:**

Dry chemical, carbon dioxide, water spray or foam. For large fires use water spray, for or alcohol foam.

**Fire Fighting Equipment / Instructions:**

Firefighters should wear full protective clothing including self-contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Avoid direct water stream on molten material, move containers from fire area if possible, do not scatter spilled area with more water than needed for fire control, dike fire control water for later disposal. Use agents suitable for type of fire. Avoid breathing vapors or dust.

**NFPA Ratings: Health: 2 Fire: 0 Reactivity: 1 Other:**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

<b>Section 6 - Accidental Release Measures</b>
--

**Steps to be Taken in Case Material is Released or Spilled:**

Use clean-up methods that avoid dust generation (vacuum, wet). Wear a NIOSH or MSHA approved respirator if dust will be generated in clean-up. Use protective clothing if skin contact is likely. If spilled solution is in a confined area, introduce lime or soda ash to form insoluble copper salts and dispose of by approved method. Prevent accidental entry of solution into streams and other water bodies. Shovel any spills into plastic bags and seal with tape. Copper sulfate solution may deteriorate concrete.

<b>Section 7 - Handling and Storage</b>
---

**Precautions to be Taken:**

Avoid breathing dust or solution mist. Sweep up crystals or powder, vacuum is preferred. Eye wash stations should be available in work areas. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Other Precautions:**

Store in closed containers in cool, dry, well-ventilated area away from heat sources and reducing agents. Store copper sulfates in stainless steel, fiberglass, polypropylene, PVC=s or plastic equipment. If container or bag is damaged, place the container or bag in a plastic bag. Use good housekeeping practices to avoid dust accumulation.

<b>Section 8 - Exposure Controls / Personal Protection</b>
--

Occupational Exposure Limits: Required to include OSHA Permissible Exposure Limits (PEL) or ACGIH Threshold Limit Values (TLV) if applicable. For the copper sulfate pentahydrate, could provide the ACGIH generic limit assigned to copper, dusts and mists 8-hr TLV of 1 mg/m<sup>3</sup>.

**Ventilation Requirements:**

Use adequate general or local ventilation to keep airborne concentrations below the exposure limits.

**Personal Protective Equipment:**

Respirator:	NIOSH approved respirator for toxic dust mist. The respirator selected must be based on contamination levels found in the work area. Supply air respirator with full-face piece.
Immediately Dangerous Life or Health Conditions:	Self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.
Clothing:	Individuals must wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact.
Gloves:	Individuals must wear appropriate gloves to prevent contact with substance.
Eye-Protection:	Individuals must wear splash proof or dust resistance safety goggles to prevent eye contact with this substance.

**Section 9 - Physical and Chemical Properties**

**Physical State:** Solid.

**Appearance and Odor:** Blue, odorless crystals.

**Vapor Pressure:** No information available.

**Odor Threshold:** Not applicable.

**Vapor density:** No information available.

**pH:** 3.5 to 4.5 (at 50 g / l and 20 °C).

**Relative density:** No information available.

**Melting Point:** Not applicable.

**Solubility (H<sub>2</sub>O):** 317 g / l at 20 °C.

**Solvent solubility:** Solvent methanol, glycerol and slightly soluble in ethanol.

**Initial boiling point and boiling range:** Not applicable.

**Evaporation Rate:** No information available.

**Flash point:** Not applicable.

**Flammability:** Product is not flammable.

**Upper / Lower Flammable or Explosive Limit:** Not applicable.

**Partition coefficient n-octanol / water:** No information available.

**Autoignition Temperature:** No information available.

**Decomposition Temperature:** 88-245 °C

Removing water from the crystallization  
340-650 °C

**Viscosity:** No information available.

**Section 10 - Stability and Reactivity**

**Reactivity:** Stable

**Stability:** Stable under normal temperatures and pressures.

**Incompatibility (Materials to Avoid):** None when product remains dry. Acetylene gas, aluminum powder, hydroxylamine, magnesium, moist air. Contact with magnesium metal can generate dangerous levels of hydrogen gas.

**Conditions to Avoid:** None known

**Hazardous Decomposition Products:** At temperatures >600 °C material decomposes to cupric oxide and sulfur dioxide.

**Possibility of hazardous:** Will not occur.

**Section 11 - Toxicological Information**

**Dermal LD<sub>50</sub>:** >5050 mg/kg (rabbit)

**Oral LD<sub>50</sub>:** 352 mg/kg (rat)

**Inhalation LC<sub>50</sub>:** N/A

**Primary Eye Irritation:** Irritant

**Primary Skin Irritation:** Irritant

**Carcinogenic:** Not listed by NTP, IARC, or OSHA.

Poisoning may affect the liver and/or kidneys and gastrointestinal tract. Persons with a history of chronic respiratory or skin disease may be at increased risk from exposure.

**Section 12 - Ecological Information**

**Subacute Dietary LC<sub>50</sub>:** >10,000 ppm (quail and duck)

**96-hr Acute Toxicity LC<sub>50</sub>:** 0.65 ppm (bluegill), 0.056 ppm (trout), 16 ppm (pink shrimp)

**48-hr EC<sub>50</sub>:** 54 ppb (eastern oysters)

**48-hr LC<sub>50</sub>:** 17 ppm (pink shrimp), 600 ppb (daphnia)

**24-hr LC<sub>50</sub>:** 6.9 ppm (blue crab), 600 ppb (daphnia)

**Bioaccumulation:** Not available.

**Section 13 - Disposal Considerations**

**Container Disposal: (Paper Bag)**

If empty: Do not reuse this container. Dispose of empty bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

**Container Disposal: (Plastic Pail)**

If empty: Do not reuse this container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.




If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

**Section 14 - Transport Information**

	Proper Shipping Name	Hazard Class	ID	PG
	Environmentally Hazardous Substance, Solid, N.O.S., (Cupric Sulfate)*	9	UN3077	III
<b>DOT</b>	Reportable Quantity (RQ) = 10 pounds (4.54 kg)			

\*Applicable when product is shipped in packaging of 10 pounds or greater.

Land and Sea transport:

UN Number	3077	
Land Transport (DOT) Proper shipping name	Environmentally hazardous substance, Solid. N.O.S., (Cooper II Sulfate)	
Class	9	
Packing group	III	
Environmentally Hazardous	-	

EmS: F-A, S-F

**Section 15 - Regulatory Information**

US State Regulations

Massachusetts Right To Know Ingredients	Pennsylvania Right To Know Ingredients	New Jersey Right To Know Ingredients	California Prop 65 Components
Copper (II) sulphate pentahydrate			This product does not contain any chemicals known to the State of California to cause cancer, birth or any other reproductive defects.

Hazard Data	Globally Harmonized System
Acute toxicity	Category 4, Oral H302 Harmful if swallowed.
Skin irritation	Category 2 H315 Causes skin irritation.
Eyes irritation	Category 1 H318 Causes serious eye damage.
Acute aquatic toxicity	Category 1 H400 Very toxic to aquatic life.
Chronic aquatic toxicity	Category 1 H410 Very toxic to aquatic life with long lasting effects.
Carcinogenicity	N/A



**Section 16 - Other Information**

HMIS ratings: Health Hazard: 2\* Fire Hazard: 0 Physical Hazard: 0  
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \*=Chronic Hazard

Date of preparation of the SDS or last change to it October 2014

The information and statements in this Material Safety Data Sheet are believed to accurately reflect the scientific evidence used in making the hazard determination, but is not to be construed as a warranty or representation for which we assume legal responsibility. Additional information may be necessary or desirable depending on particular, exceptional or variable conditions or circumstances of use or storage or because of locally applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information available to you and must make independent determinations of the suitability of the information for your particular circumstances or conditions and of the completeness of the information available from all sources to assure both the proper use of the material described herein and the safety and health of employees.