



# M. MEDINA TEX, Lda.

IMPORTAÇÃO — EXPORTAÇÃO

## Copper Sulfate Pentahydrate $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

We are glad to offer you our high quality product – Copper Sulfate Pentahydrate. Timna produces various grades of copper sulfate for animal feed, catalysts, fertilizers, electroplating and other industrial applications. Tailor-made grades are also produced to customers specifications.

Timna's capability for producing copper sulfate is 5000 tons per annum.

The highest purity and total absence of any anti-caking agent turns the copper sulfate pentahydrate manufactured by Timna to a really unique product in comparison with our competitors.

Timna Copper Mines manufactures copper sulfate pentahydrate for more than three decades, since 1971. Due to the excellent quality and physical properties of our copper sulfate, it is capable to be used in such a various applications as trace element in animal feed industry and pharmaceutical compounds, chemical reagent in preparation of dyestuffs intermediates and other materials, algacide for pool maintenance, fungicide such as Bordeaux mixture, and many others.

### Available grades of Copper Sulfate Pentahydrate

Please follow the link in order to view the product specification (chemical analysis and size distribution).

[Diamond Crystal](#)

[Feed Grade - Fine Crystals](#)

[Powder - Very Fine Crystal](#)

[Special Technical Grade](#)

[Technical Grade](#)

[Very High Purity](#)



*Copper sulfate manufactured by Timna Copper Mines*



## Packaging

Copper sulfate pentahydrate is available in 25 kg polyethylene-lined polypropylene bags or 500/1000 kg polyethylene-lined polypropylene big-bags. Tailored packaging is also available on customer request.



Warehouse

## Product physical characteristics

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

Copper sulfate crystallizes as pentahydrate in the form of blue triclinic crystals. It slowly effloresces in dry air already at 29°C and will lose two moles of water to yield the trihydrate. Two additional moles of water will be removed by heating to 110°C and it will become anhydrous at 250°C. The anhydrous copper sulfate,  $\text{CuSO}_4$ , is off-white orthorhombic crystal.

The specific gravity of copper sulfate pentahydrate is 2.28 g/cm<sup>3</sup>. Apparent bulk density of copper sulfate pentahydrate is about 1.2 g/cm<sup>3</sup>.

The copper sulfate pentahydrate is very soluble in water (about 22g in 100 ml of water at 0°C, 120g in 100 ml at 100°C), soluble in methanol and glycerol and slightly soluble in ethanol.

## Timna process for producing Copper Sulfate

The Timna process is a unique one, different from every other existing process. It yields products in a crystal form that promotes the free flow, dryness and extended shelf life typical of all grades manufactured by Timna. No anti-caking is required, and consequently all Timna grades are pure and have superior physical properties.

Metallic copper in the form of granulated scrap copper from established industrial sources is oxidized by the air at ambient temperatures in the presence of dilute copper sulfate solution. The resulting intermediate copper compound is subsequently oxidized by sulfuric acid. The oxidation, performed in mild conditions, enables the efficient removal of impurities. The process eventually generates a hot and concentrated solution that, upon cooling, crystallizes out copper sulfate pentahydrate. The crystals are separated from the mother liquor by centrifugation and then dried, sized and packed. The mother liquor is purified and recycled.