

Copper Sulphate

CAS 7758-99-8 · $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ · 98% pentahydrate

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1. Product identity

Product name	Copper Sulphate
Synonyms	copper sulfate, blue vitriol, tutiya, copper sulphate pentahydrate, CuSO_4
C.A.S. number	7758-99-8 (copper sulphate pentahydrate). The ANHYDROUS salt is CAS 7758-98-7 and carries a different, milder harmonised classification - do not interchange them. EC number 231-847-6.
Molecular formula	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Molecular weight	249.7 (ILO ICSC 1416). Anhydrous CuSO_4 is 159.6.
Grade supplied against	98% pentahydrate
Appearance	Blue to light blue crystals, granules or crystalline powder, odourless
Product group	Industrial Salts & Inorganics
HSN code	2833 25 00
Country of origin	As stated on the producer's documents for the lot supplied; confirmed at offer stage
Packing	25 / 50 kg bag
Storage	Store in the original, well-closed container in a cool, dry, well-ventilated place out of direct sunlight, on a bunded floor with no drain or sewer access. Protect from moisture and humidity; the pentahydrate cakes, and in a hot dry store it effloresces and loses its blue colour. Segregate from bases, ammonia and amines, reducing agents, acetylene, metal powders, and from foodstuffs and animal feed. Do not use mild steel or galvanised containers, scoops or pipework - use plastic, stainless steel or lined equipment. Contain all spillage and washings; they must not reach surface water, groundwater or drains.

2. Analytical specification

S. No.	Test parameter	Specification	Method
1	Description	Blue to light blue crystals, granules or crystalline powder, odourless	Visual
2	Identification	Conforms to the substance supplied	Instrumental or chemical test, per method agreed
3	Assay / grade	98% pentahydrate	Titrimetry or instrumental, per method agreed
4	Physical state	Solid	Visual
5	Solubility in water	Freely soluble - 317 g/L at 20 C (ILO ICSC 1416); about 22 g/100 g water at 25 C. Also soluble in methanol, ethanol and glycerol.	Per the test method agreed

S. No.	Test parameter	Specification	Method
6	pH	3.7-4.5 in a 50 g/L (5% w/v) aqueous solution at 25 C - acidic through hydrolysis. The dry solid has no pH.	Potentiometry on an aqueous suspension
7	Relative density	2.28-2.286 g/cm3	Pyknometry or gas displacement
8	Melting / freezing point	Not applicable - the pentahydrate loses water of crystallisation rather than melting. Producer data: about 2 H2O lost near 30 C, a further 2 H2O near 110 C, becoming anhydrous by about 250 C. ILO ICSC 1416 records 'decomposes at 110 C'.	Thermal analysis
9	Boiling point	Not applicable - decomposes before boiling	Distillation range
10	Flash point	Not flammable	Not applicable — the substance is not combustible
11	Additional parameters	To the specification agreed before order	As agreed

3. Transport classification

UN 3077 · Class 9 (miscellaneous dangerous substances and articles), classification code M7 · Packing group III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER SULPHATE PENTAHYDRATE) - marine pollutant. The technical name in brackets is mandatory under special provision 274.

What this document is. This is a product specification sheet. It states the grade this material is supplied against, its packing and its identity. **It is not a certificate of analysis, it carries no test results, and it certifies no batch.** Tested values for the consignment actually loaded appear on the batch certificate of analysis issued against that batch, which travels with the despatch documents. Identity and physical data are drawn from PubChem, the ECHA CLP inventory and ILO safety cards; the producer's documents for the grade quoted govern. Velora Chemicals Private Limited is a bulk supplier and trader, not a manufacturer.