

Zinc Sulphate

CAS 7446-19-7 · $\text{ZnSO}_4 \cdot \text{H}_2\text{O}$ · Mono 33% Zn / hepta 21% Zn (FCO)

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1. Product identity

Product name	Zinc Sulphate
Synonyms	zinc sulphate monohydrate, zinc sulphate heptahydrate, ZnSO_4 , zinc sulphate 33, zinc sulphate 21
C.A.S. number	7446-19-7 (monohydrate, $\text{ZnSO}_4 \cdot \text{H}_2\text{O}$). Heptahydrate is CAS 7446-20-0; anhydrous is CAS 7733-02-0. All three share the EU harmonised entry for zinc sulphate.
Molecular formula	$\text{ZnSO}_4 \cdot \text{H}_2\text{O}$ (monohydrate); $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ (heptahydrate)
Molecular weight	179.45 g/mol (monohydrate); 287.54 g/mol (heptahydrate); 161.47 g/mol (anhydrous)
Grade supplied against	Mono 33% Zn / hepta 21% Zn (FCO)
Appearance	Monohydrate: white to beige free-flowing crystalline powder or granules, odourless. Heptahydrate: colourless to white crystals, granules or crystalline powder, odourless; efflorescent in dry air.
Product group	Industrial Salts & Inorganics
HSN code	2833 29 90
Country of origin	As stated on the producer's documents for the lot supplied; confirmed at offer stage
Packing	50 kg bag · 1 MT jumbo
Storage	Store in a cool, dry, well-ventilated place with the container tightly closed. Keep away from strong oxidising agents. Protect the monohydrate from moisture (caking) and the heptahydrate from dry heat (efflorescence and loss of water of crystallisation, which shifts the assay). Bund or otherwise contain the storage area so that spills and wash water cannot reach drains, surface water or soil - the substance is very toxic to aquatic life with long-lasting effects.

2. Analytical specification

S. No.	Test parameter	Specification	Method
1	Description	Monohydrate: white to beige free-flowing crystalline powder or granules, odourless. Heptahydrate: colourless to white crystals, granules or crystalline powder, odourless; efflorescent in dry air.	Visual
2	Identification	Conforms to the substance supplied	Instrumental or chemical test, per method agreed
3	Assay / grade	Mono 33% Zn / hepta 21% Zn (FCO)	Titrimetry or instrumental, per method agreed
4	Physical state	Solid (crystalline powder or granules)	Visual

S. No.	Test parameter	Specification	Method
5	Solubility in water	Freely soluble in water. 57.7 g/100 g water at 25 C and 101 g/100 g water at 70 C (peer-reviewed data via PubChem); an additional PubChem entry gives 22 g/100 mL at 20 C. Insoluble in ethanol.	Per the test method agreed
6	pH	4 to 6 in a 5 % w/w aqueous solution (Loba Chemie heptahydrate SDS). PubChem records that the aqueous solution is acid to litmus with pH about 4.5 for the heptahydrate. Aqueous solutions are acidic through hydrolysis of the zinc ion. A monohydrate-specific pH value with a stated concentration was not confirmed; expect the same acidic range on an equivalent zinc basis.	Potentiometry on an aqueous suspension
7	Relative density	3.20 g/cm ³ (monohydrate); 1.957 g/cm ³ at 25 C (heptahydrate, CRC via PubChem; Loba Chemie SDS gives 1.97 g/cm ³); 3.8 g/cm ³ (anhydrous)	Pyknometry or gas displacement
8	Melting / freezing point	Neither hydrate has a true melting point - both lose water of crystallisation and then decompose. Monohydrate decomposes at about 238 C; heptahydrate loses water from about 100 C; anhydrous zinc sulphate decomposes at about 680 C (all PubChem/CRC). The figure of 100 C quoted as 'melting point' on some heptahydrate SDS (e.g. Loba Chemie) is a dehydration temperature, not a melt.	Thermal analysis
9	Boiling point	Not available (the substance decomposes before boiling)	Not applicable
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) · Packing group III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate). Confirmed for the monohydrate by the CDH Fine Chemical SDS and for the heptahydrate by the Loba Chemie SDS. The classification arises from the aquatic hazard (H400/H410), not from toxicity or corrosivity, so packages also require the environmentally hazardous substance mark.

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.