



**Ranhill
SAJ**

**SPECIFICATION FOR COPPER SULPHATE USED
FOR POTABLE SUPPLY**

**SPECIFICATION SAJ CH/CS/001
(Rev.3.0 / 12.2018)**

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QUALITY ASSURANCE DEPARTMENT
RANHILL SAJ SDN. BHD.

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Specification For Copper Sulphate Used For Potable Water Supply

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Specification for Copper Sulphate Used For Potable Water Supply

1.0 GENERAL

- 1.1) This specification is applicable to Copper Sulphate Used For Potable Water Supply accordingly to Spesifikasi JKR 20200-0087-00, JKR Standard Specification For Copper Sulphate Used For Potable Water Supply.
- 1.2) Features required for this specification are as follows or otherwise the above specification will be applied.

2.0 FEATURES REQUIRED

- 2.1) Copper Sulphate Used for Potable Water Supply shall comply with requirement as specified in Table 1 – Product Specification.

Table 1 – Product Specification

Parameter	Requirement	Test Method
A. Chemical Requirement		
Copper Sulphate Pent hydrate content, %(w/w)	98 min	AWWA B602-91
B. Impurities		
	Limit	Test Method
Insoluble matter, %(w/w)	0.5 max	DIN EN 112386:1998
Moisture, %(w/w)	0.5 max	DIN EN 112386:1998
Free sulphuric acid, %(w/w)	0.2 max	DIN EN 112386:1998
Iron, as Fe, ppm	200	ISO 6332
C. Toxic Substances		
	Limit as ppm of product (CuSO₄.5H₂O)	Test Method
Arsenic (As)	5	DIN EN 112386:1998
Cadmium (Cd)	10	ISO 6353-1 GM29
Chromium (Cr)	5	ISO 6353-1 GM29
Mercury (Hg)	0.1	ISO 5993
Nickel (Ni)	100	ISO 6353-1 GM29
Lead (Pb)	70	ISO 6353-1 GM29
Antimony (Sb)	1	DIN EN 112386:1998
Selenium (Se)	1	DIN EN 112386:1998

2.2) Physical Properties of Copper Sulphate are as follows:

No.	Physical Properties	Descriptions
1.	Appearance	i. Powder or Crystal ii. Deep Blue Colour iii. No Odour
2.	Solubility	i. 266g/L (20°)

2.3) Copper Sulphate shall contain not less than 98 percent, by weight of copper sulphate pent hydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$)

2.4) Copper Sulphate supplied shall not contain any impurities and additives.

3.0 TEST AND INSPECTION

3.1 All Copper Sulphate shall comply with test in accordance with the requirement of specification.

4.0 PACKING AND STORAGE

4.1 Copper Sulphate shall be delivered in a bag form

4.2 For storage purposes, Copper Sulphate shall be store in cool-dry and well ventilated area

4.3 Protect against physical damage and moisture

4.4 Under proper storage condition, Copper Sulphate shall be stable up to 12 months.

5.0 MANDATORY MARKING

Each bag of Copper Sulphate shall have mark legibly on it including: -

5.1 “copper sulphate pent hydrate”, trade name and grade/type;

5.2 Net weight;

5.3 Name, address and telephone number or supplier and/or manufacturer;

5.4 Batch number;

5.5 Date of manufacturing / packaging and shall bear such other marking as required by applicable laws;

6.0 TRANSPORTATION AND LABELLING

The product shall be categorized under the following transportation guideline and labelling ;

- 6.1 RID : class 6.1 item 87c;
- 6.2 ADR : class 6.1 item 87c;
- 6.3 IMO-IMDG : class 6.1, UN 2775; and
- 6.4 IATA : class 6.1, UN 2775, packing group III

7.0 PRE-DELIVERY INSPECTION AND EVALUATION

- 7.1 It is the responsibility of the tenderer to inform SAJ for inspection purposes during manufacturing and before delivery.
- 7.2 SAJ reserve the right to inspect and witness the testing of the product offered without any prior notice.
- 7.3 At any time, when requested, the supplier is to provide SAJ a sample of the product offered for evaluation purposes. All cost shall be borne by the supplier.
- 7.4 If at any time, the supplier fails to deliver the required sample, the product is deemed fail to meet the specification.

8.0 CERTIFICATION

- 8.1 Manufacturer and/or supplier of the product are required to provide the copy of the certificate and testing report from SIRIM, IKRAM and/or other certification bodies.
- 8.2 Tests report required should be those tests conducted within a year period.
- 8.3 SAJ has the right to refuse offer or reject supply if those documents required are not enclosed.

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