SRI LANKA STANDARD 665:1984
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SPECIFICATION FOR
ZINC SULFATE
(FERTILIZER GRADE)

SRI LANKA STANDARDS INSTITUTION

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SLS 665:1984

Gr. 4

SRI LANKA STANDARDS INSTITUTION
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Sri Lanka.

SRI LANKA STANDARD

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FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1984-10-31, after the draft, finalized by the Drafting Committee on Fertilizers, had been approved by the Agricultural and Food Products Divisional Committee.

All standard values given in this specification are in SI units.

For the purpose of deciding whether a particular requirement of this specification is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with CS 102. The number of significant places retained in the rounded off value should be the same as that of the specified value in this specification.

In the preparation of this specification valuable assistance derived from relevant publications of the Indian Standards Institution is gratefully acknowledged.

1 SCOPE

This specification prescribes the requirements and methods of sampling and test for zinc sulfate (fertilizer grade).

2 REFERENCES

CS 102 Presentation of numerical values

CS 124 Test sieves

SLS 301 Determination of copper

SLS 311 Determination of lead

SLS 559 Sampling of fertilizers

SLS 645 Test for fertilizers.

3 REQUIREMENTS

3.1 General requirements

The material shall be dry and free-flowing, consisting essentially of $ZnSO_4.7H_2O$.

3.2 Other requirements

The material shall also comply with the requirements given in Table 1 when tested according to the methods given in Column 4 of the table.

TABLE 1 - Requirements for zinc sulfate

(Fertilizer grade)

Sl. No. (1)	Characteristic (2)	Requirements (3)	Method of test (4)
i	Zinc content (as Zn), per cent by mass, min.	22.0	SLS 645
ii	Magnesium content (as Mg), per cent by mass, max.	0.5	SLS 645
iii	Copper content (as Cu), per cent by mass, max.	0.1	SLS 301
iv	Lead content (as Pb), per cent by mass, max.	0.003	SLS 311
v	pH of 10 per cent (m/v) solution, min.	4.0	SLS 645
vi	Matter insoluble in water, per cent by mass, max.	1.0	Appendix A

4 PACKAGING AND MARKING

4.1 Packaging

The material shall be packed in sound and strong moisture proof multi-wall paper bags, polypropylene bags, or jute bags, with an inner lining, or in such other containers as agreed to between the purchaser and supplier.

4.2 Marking

4.2.1 The following shall be legibly and indelibly marked on each package or container :

a) The words *Zinc sulfate, fertilizer grade,* in capital letters;

b) The name and address of the manufacturer/importer/distributor;

c) Registered trade mark, if any;

d) Net mass, in kilograms;

e) Batch or code number;

f) Date of manufacture; and

g) Zinc content, per cent by mass.

4.2.2 The packages or containers may also be marked with the Certification Mark of the Sri Lanka Standards Institution illustrated below on permission being granted for such marking by the Sri Lanka Standards Institution.

NOTE - The use of the Sri Lanka Standards Institution Certification Mark (SLS mark) is governed by the provisions of the Sri Lanka Standards Institution Act and the regulations framed thereunder. The SLS mark on products covered by a Sri Lanka Standard is an assurance that these have been produced to comply with the requirements of the relevant standard under a well defined system of inspection, testing and quality control, which is devised and supervised by the Institution and operated by the producer. SLS marked products are also continuously checked by the Institution for conformity to the relevant standards as a further safeguard. Details of conditions under which a permit for the use of the Certification Mark is granted to manufacturers or processors may be obtained from the Sri Lanka Standards Institution.

5 SAMPLING

5.1 Sampling shall be carried out as prescribed in **SLS 559.**

5.2 Each package selected as prescribed shall be examined for packaging and marking requirements.

5.3 Tests for requirements specified in 3 shall be carried out on the composite sample prepared as in SLS 559.

6 METHODS OF TEST

Tests shall be carried out as prescribed in **SLS 645, SLS 301, SLS 311** and Appendix A.

7 CONFORMITY TO STANDARD

A lot shall be declared as conforming to the requirements of this specification if the following conditions are satisfied.

7.1 Each package examined as in **5.2** satisfies the requirements for packaging and marking.

7.2 The composite sample tested as in 5.3 satisfies the relevant requirements.

7.2.1 The total zinc content of the composite sample is not less than the declared zinc content of the material.

APPENDIX A

DETERMINATION OF MATTER INSOLUBLE IN WATER

A.1 REAGENT

A.1.1 *Dilute sulfuric acid*, 10 per cent.

A.2 PROCEDURE

Weigh to the nearest milligram, about 25 g of the material and dissolve in 125 ml of water. Add one milligram of dilute sulfuric acid and heat the solution to boiling. Filter through a dried and tared Gooch crucible or sintered glass crucible. Wash residue thoroughly with hot water. Dry the crucible at 110 ± 5 °C and weigh. Repeat drying and weighing the crucible till the difference between two successive weighings does not exceed one milligram.

A.3 CALCULATION

$$\text{Matter insoluble in water, per cent by mass} = \frac{m_1}{m_0} \times 100$$

where,

m_0 = Mass, in grams, of the sample; and

m_1 = Mass, in grams, of the residue.

SLS CERTIFICATION MARK

The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI *which includes surveillance inspection of the factory, testing of both factory and market samples.*

Further particulars of the terms and conditions of the permit may be obtained from the Sri *Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.*

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.