

**CORPORATE PURCHASING SPECIFICATION**

AA 536 13

Rev. No. 02

PREFACE SHEET

SODIUM SILICATE FOR USE IN FOUNDRIES – Gr.:3

**FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS**

Comparable Standards:

1. INDIAN : IS: 6773-1978, Gr:3

Suggested/Probable Suppliers and Grades:

1. Refer Plant vendor directory.

User Plants /References:

1. CFFP, HARDWAR : FF06038
2. BHOPAL :
3. HYDERABAD :

Revisions :
As per 23rd MOM of MRC-FN

APPROVED :
**INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (FN)**

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1.0 GENERAL

This specification governs the quality requirements of Sodium Silicate for use in foundries.

2.0 APPLICATION

Used as binder in the preparation of sand (silica or chromite) for moulds and cores. Strength in the prepared sand shall be built by passing CO₂ gas through vents.

3.0 COMPLIANCE WITH NATIONAL STANDARDS

The material shall comply, in general, with the following national standards and also meet the requirements of this specification:

IS: 6773 –1978, Gr.:3 : Sodium Silicate for use in Foundries.

4.0 TEST SAMPLE

Sample should be draw in accordance with IS: 6773

5.0 PROPERTIES:

The material should be in the form of translucent thick liquid and when tested in accordance with IS: 6773-1978 shall comply with the following:

- 5.1 Total Soluble Silica (as SiO₂) : 28 – 34 percent by mass.
- 5.2 Total Alkalinity (as Na₂O) : 12-15% by mass.
- 5.3 Mass ratio of total soluble silica (as SiO₂) to total Alkalinity (as Na₂O) : 2.2 – 2.4.
- 5.4 Relative Density at 20 °C : 1.54-1.60
- 5.5 Viscosity at 27 °C : 51-55 Baumme

6.0 SHOP TEST/TESTING OF SAND MIX:

In order to evaluate the service quality of sodium silicate, a mixture of silica sand and sodium silicate shall be prepared by taking 1 kg of silica sand and mixing with 60 g of sodium silicate and mulling it for 3 minutes, then passing carbon dioxide for 45 seconds at 2 kg/cm² on each side.
The standard mixture shall give a minimum compressive strength of 130 N/cm².

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7.0 ACCEPTANCE

For established suppliers, the material shall be accepted based on Clause 6.0. Properties at Clause No. 5 shall be checked on surveillance basis. For new suppliers properties at both Clause No. 5 and 6 shall be tested at BHEL.

8.0 INSPECTION, DEVIATION & REPLACEMENT

- 8.1 BHEL reserves the right to inspect material at site before despatch. However inspection at BHEL shall be final. The supplier shall offer BHEL's representative all reasonable test facilities, without charge to satisfy the latter that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed test elsewhere. The supplier shall notify BHEL in advance about the readiness of the material for inspection and testing.
- 8.2 If the material received at BHEL is not found in accordance with the requirements, it shall be rejected and the supplier will have to replace it free of cost at the earliest.
- 8.3 For any deviation from the specification demanded by the supplier prior approval of BHEL must be obtained in writing

9.0 Test Certificates

- 9.1 Unless otherwise specified, one original and three copies of original manufacturer's test certificates must be supplied alongwith each consignment. In addition, the supplier shall ensure to send one copy of test certificates along with the dispatch documents to facilitate quick change of the material.

The certificates shall bear the following information:

- a. Specification No. & item description
- b. BHEL PO No. with Date
- c. Supplier reference / trade mark, if any
- d. Identification No. / Batch No.
- e. Date of manufacture
- f. Test results as per Clause 5
- g. Any other specific information which the supplier would like to convey.

- 9.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificate with linkage to supplier's invoice stating the batch No., Lot No., etc. of the supply.

10.0 Packing and Marking

Packing should be that of Original Manufacturer's. The material shall be supplied in clean and good quality non-reactive drums of capacity upto 200 litres or in road tankers of suitable batch capacity which will then unloaded in drums kept in foundry meant for the purpose. If the supply is in drums, each of these drums shall bear the following information legibly marked or labelled.

- (a) Supplier's name and trade mark, if any.
- (b) Name of the product and grade
- (c) Batch No.
- (d) Net Weight

11.0 Referred Standards

IS: 6773:1998