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भारतीय मानक मसौदा

अल्फा नेफथाइल एसिटिक एसिड सॉल्युबल कॉन्सन्ट्रेट (एस एल) – विशिष्ट

(आइ एस 13138 का पहला पुनरीक्षण)

Draft Indian Standard

**ALPHA NAPHTHYL ACETIC ACID SOLUBLE CONCENTRATE (SL)
— SPECIFICATION**

(First Revision of IS 13138)

ICS No. 65.100.99

Pesticides Sectional Committee, FAD 01

Last Date of Comments: 30 June 2024

FOREWORD

(Formal clauses would be added later)

Alpha naphthyl acetic acid soluble concentrate (SL) is used as a plant growth regulator in agriculture and horticulture. It is generally manufactured to contain 4.5 percent (m/m) of alpha naphthyl acetic acid.

This standard was first published in 1991. In this revision, the standard has been brought out in the latest style and format of the Indian Standards, and references to Indian Standards wherever applicable have been updated.

In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act, 1968* and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022. ‘Rules for rounding off numerical values (*second revision*)’ This number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

This standard prescribes requirements and the methods of sampling and test for *alpha* naphthyl acetic acid soluble concentrate (SL).

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
IS 1070 : 2023	Reagent grade water — Specification (<i>fourth revision</i>)
IS 6940 : 1982	Methods of test for pesticides and their formulations (<i>first revision</i>)
IS 10627 : 1983	Methods for sampling of pesticidal formulations
IS 13070 : 202X	Alpha naphthyl acetic acid, technical — Specification (<i>first revision</i>) [<i>Under preparation Doc: FAD 01(25455)WC</i>]

3 REQUIREMENTS

3.1 Constituents

This material shall consist of *alpha* naphthyl acetic acid, technical conforming to IS 13070, dissolved in suitable solvent(s).

3.2 Description

The material shall be in the form of clear bright pale yellow solution with a slight naphthalene odour. It shall be free from extraneous impurities.

3.3 Relative Density

The relative density of the material at 27/27 °C shall be 1.014 – 1.024 when tested by the method prescribed in IS 6940.

3.4 pH

The pH of the material shall be 6.0 – 8.5 at 20 °C when tested by pH meter with glass electrodes. About 20 ml of the material shall be taken for the test.

3.5 *Alpha* Naphthyl Acetic Acid Content

When determined by the method prescribed in Annex A, the observed copper content, percent (*m/m*) of any of the samples shall not differ from the declared nominal value by more than tolerance limits indicated underneath: –

<i>Nominal Value, percent</i>	<i>Tolerance limit, percent</i>	
Up to 9	+10 - 5	} of the nominal value
Above 9 and below 50	±5	
50 and above	+5 - 3	

The actual value of copper content shall be calculated to two decimal places and then rounded off to one decimal place before applying the tolerance.

3.6 Cold Test

No turbidity or separation of solid matter shall occur when the material is subjected to cold test at 10 °C as prescribed in IS 6940 or any other lower temperature as agreed to between the purchaser and the vendor.

4 PACKING

The material shall be packed in a bag as agreed to between the purchaser and the manufacturer. The container shall also comply with the general packing requirements specified in IS 8190 (Part 1).

5 MARKING

5.1 The containers shall be securely closed and shall bear legibly and indelibly the following information:

- a) Name of the material;
- b) Name and address of the manufacturer;
- c) Batch number;
- d) Date of manufacture;
- e) Date of expiry;
- f) Net quantity;
- g) Nominal *alpha* naphthyl acetic acid content, percent (*m/m*);
- h) Cautionary notice as worded in the *Insecticides Act*, 1968, and Rules framed thereunder; and
- j) Any other information required under the *Legal Metrology (Packaged Commodities) Rules*, 2011.

5.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 SAMPLING

Representative samples of the material shall be drawn as prescribed in IS 10627.

7 TESTS

7.1 Tests shall be carried out by appropriate methods as referred in **3.3** to **3.6**.

7.2 Criteria for Conformity (Bulk Sampling)

When material is offered in bulk and sampled according to the provisions given under IS 10627, the average *alpha* naphthyl acetic acid content in samples not more than 90 days old shall not be less than the declared nominal value.

8 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE – ‘Pure chemicals’ shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A
[Clause 3.5]
DETERMINATION OF *ALPHA* NAPHTHYL ACETIC ACID

A-1 REAGENTS

A-1.1 Buffer Solution

Dissolve 2.035 g citric acid and 2.924 g disodium hydrogen phosphate in water and make up the volume to 200 ml with water. The solution shall have pH 5.

A-1.2 Ether – AR grade

A-1.3 Methanol – AR grade, neutralized, alternatively, neutralized ethanol or isopropanol may be used.

A-1.4 Standard Sodium Hydroxide Solution – 0.5 N.

A-1.5 Phenolphthalein Indicator Solution

A-1.6 Brine Solution

A-2 PROCEDURE

Weigh accurately about 10 g of the sample transfer to a 250 ml separatory funnel, add 50 ml buffer solution and 50 ml ether. Shake the mixture for 2 min and allow to separate for 5 min. Add brine solution for clear separation, if necessary. Transfer the aqueous layer to a second 250 ml separatory funnel and extract with further 2 portions each of 25 ml ether. Transfer the ether extract to a 500 ml Erlenmeyer flask and evaporate to dryness on a steam bath. Dissolve the residue in 50 ml neutralized methanol and titrate with standard sodium hydroxide solution using phenolphthalein as indicator.

A-3 CALCULATIONS

$$\text{Alpha naphthyl acetic acid content, percent by mass} = \frac{18.62 \times V \times N}{M}$$

where,

V = volume, in ml, of standard sodium hydroxide solution used in the titration;

M = mass, in g, of the sample taken for the test; and

N = Normality of standard sodium hydroxide.