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“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 15939 (2011): Pesticide - Bifenthrin Wettable Powder
[FAD 1: Pesticides and Pesticides Residue Analysis]
Indian Standard

PESTICIDE — BIFENTHRIN WETTABLE POWDER — SPECIFICATION

ICS 65.100.10
FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Pesticides and Pesticides Residues Analysis Sectional Committee had been approved by the Food and Agriculture Division Council.

Bifenthrin wettable powder (WP) is used as an insecticidal formulation. It is generally manufactured to contain 10 percent (m/m) of bifenthrin.

In the preformulation of this standard, due consideration has been given to the provisions of Insecticides Act, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under the Insecticides Act and Rules, 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 2:1960 ‘Rules for rounding off numerical values (revised)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.
Indian Standard

PESTICIDE — BIFENTHRIN WETTABLE POWDER — SPECIFICATION

1 SCOPE
This standard prescribes the requirements and the methods of sampling and test for bifenthrin, WP.

2 REFERENCES
The following standards contain provisions which through reference in this text, constitute provisions 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:

<table>
<thead>
<tr>
<th>IS No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1070 : 1992</td>
<td>Reagent grade water (third revision)</td>
</tr>
<tr>
<td>6940 : 1982</td>
<td>Methods of test for pesticides and their formulations (first revision)</td>
</tr>
<tr>
<td>8190 (Part 1) : 1988</td>
<td>Requirement for packing of pesticides: Part 1 Solid pesticides (second revision)</td>
</tr>
<tr>
<td>10627 : 1983</td>
<td>Methods for sampling of pesticidal formulations</td>
</tr>
<tr>
<td>15936 : 2010</td>
<td>Pesticide — Bifenthrin, technical — Specification</td>
</tr>
</tbody>
</table>

3 REQUIREMENTS

3.1 Constituents
3.1.1 The material shall consist of bifenthrin technical, together with suitable carrier(s), stabilizer(s), binder(s), and other formulant(s).
3.1.2 Bifenthrin technical, employed in the formulation of this material shall conform to IS 15936.

3.2 Description
The material shall be in the form of a fine, free flowing, beige or off-white to brownish white homogeneous powder, free from lumps and extraneous impurities. It shall wet readily on mixing with water providing a suspension for suitable use as spray.

3.3 The material shall also comply with the requirements given in Table 1.

3.4 Bifenthrin Content
When determined by the method described in Annex A, the observed bifenthrin content percent (m/m) of any of the samples shall not differ from the declared nominal value by more than the tolerance limits given below:

<table>
<thead>
<tr>
<th>Nominal Value Percent</th>
<th>Tolerance Limits Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 9</td>
<td>+10</td>
</tr>
<tr>
<td></td>
<td>−5</td>
</tr>
<tr>
<td>Above 9 and below 50</td>
<td>±5</td>
</tr>
<tr>
<td>50 and above</td>
<td>+5</td>
</tr>
<tr>
<td></td>
<td>−3</td>
</tr>
</tbody>
</table>

4 PACKING
The material shall be packed in polyethylene pouches. Bulk quantity shall be packed in mild steel drums or fibre board containers lined with polyethylene liner. Closures provided shall be such as not to allow any materials to leak through them. These shall be leak proof and pilfer proof. In addition, the packing shall also comply with the general requirements as specified in IS 8190 (Part 1).

Table 1 Requirements for Bifenthrin, WP
(Clause 3.3)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Tests</th>
<th>Requirements</th>
<th>Methods of Test, Ref to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Annex of this Standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Annex/Clause of IS No.</td>
</tr>
<tr>
<td>i)</td>
<td>Bifenthrin content, percent by mass</td>
<td>Nominal value as declared on the container (see 3.4)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Annex A of IS 15936</td>
</tr>
<tr>
<td>ii)</td>
<td>Sieve test (particle retained on 300 mesh)</td>
<td>Maximum 3.0 percent (m/m)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11.1 of IS 6940</td>
</tr>
<tr>
<td>iii)</td>
<td>Wettability, in seconds, Max</td>
<td>120</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11.4 of IS 6940</td>
</tr>
<tr>
<td>iv)</td>
<td>pH of 5 percent suspension in distilled water</td>
<td>7.0 to 9.0</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11.3 of IS 6940</td>
</tr>
<tr>
<td>v)</td>
<td>Alkalinity (as NaOH), percent by mass, Max</td>
<td>0.3</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11.2 of IS 6940</td>
</tr>
<tr>
<td>vi)</td>
<td>Suspensibility, percent by mass, Min</td>
<td>60.0</td>
<td>—</td>
</tr>
</tbody>
</table>
5 MARKING

5.1 The container shall be marked legibly and indelibly with the following information and other additional information, as is required under the Insecticides Act, 1968, and Rules framed thereunder:

a) Name of the material;
b) Name and address of the manufacturer;
c) Batch number or Code number;
d) Date of manufacture;
e) Date of expiry;
f) Nominal bifenthrin content, percent (m/m);
g) Net quantity;
h) A cautionary notice as worded in Insecticides Act, 1968 and Rules framed thereunder; and
j) Any other information required under Standards of Weights and Measures (Packaged Commodities) Rules, 1977.

5.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

5.2.1 The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of the conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 SAMPLING

6.1 When freshly manufactured material in bulk quantity and/or the retail pack of the formulated product is/are offered for inspection, representative sample of the material shall be drawn as prescribed in IS 10627 and if tested within 90 days of its date of manufacture, the criteria for conformity shall be the contents in percent (m/m), shall not be less than the declared nominal value. The upper limit for conformity shall be the same as those given in 3.4.

6.2 When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627, however, the criteria for conformity of the material, when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under 3.4.

7 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 3.4; and Table 1, Sl No. (iv)]

DETERMINATION OF pH IN BIFENTHRIN WETTABLE POWDER

A-1 GENERAL

This procedure is applicable for aqueous suspensions of wettable powder.

A-2 PRINCIPLE

The pH is determined using a pH meter having a range of 0-14 with a precision of 0.1 pH.

A-3 APPARATUS

A-3.1 pH Meter — Direct reading, with glass electrode and a calomel reference electrode or any other suitable electrode along with temperature compensation.

A-3.2 Balance (Analytical) — Sensitive to 0.1 g.

A-3.3 Buffer Tablets — Tablets of pH 4.0, 7.0 and 9.2.

A-3.4 Standard Glassware Beaker

A-3.5 Wash Bottle — Containing distilled water.

A-4 PROCEDURE

From the buffer tablets, prepare 4.0, 7.0 and 9.2 pH buffer solutions, following the prescribed instruction given with the tablets.

Standardize the pH meter using the buffers as follows:

Immerse the electrodes of the pH meter in 7.0 pH buffer solution and adjust the meter to read 7.0 pH. Remove the buffer solution from the electrodes, wash these with water and wipe the electrodes free from water.

Replace with pH buffer solution 9.2 and adjust the meter to read 9.2 pH. Remove the buffer solution from the electrodes, wash these with water and wipe the electrodes free from water.

Weigh accurately about 5.0 g of the sample and add 100 ml of distilled water. Mix the sample thoroughly to get a uniform suspension in a beaker. Measure the pH of the suspension.

Report result to nearest 0.1 pH.
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This Indian Standard has been developed from Doc No.: FAD 1 (1556).

Amendments Issued Since Publication

<table>
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<th>Amend No.</th>
<th>Date of Issue</th>
<th>Text Affected</th>
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<tr>
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Published by BIS, New Delhi