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"पुराने को छोड़ नये के तरफ"  
Jawaharlal Nehru  
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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"  
Bhartrhari—Nitisatakam  
"Knowledge is such a treasure which cannot be stolen"
Indian Standard

POWDER HAIR DYES — SPECIFICATION

( Second Revision )

ICS 71.100:70

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR
NEW DELHI 110002

March 1999
FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cosmetics Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

In general, hair dyes may be broadly classified as powder hair dyes and liquid hair dyes.

This standard covers the requirements for powder hair dyes only. However, in liquid/emulsion hair dyes there are four types, namely, (a) oxidation hair dye (liquid), (b) lead salt based hair darkener, (c) emulsion type hair dye, and (d) vegetable based hair dye. Amongst these, requirements for oxidation hair dyes, liquid are covered in IS 8481.

A powder hair dye usually contains an arylamine, that is, paraphenylenediamine (PPD) as the active ingredient and a solid peroxide as the oxidizing agent. The brown variety may contain other dye chemicals like ortho amino phenol, para amino phenols, etc, besides arylamine. The dyes may, in addition contain one or more of the following ingredients:

a) Thickening agent,
b) Water softening agent,
c) Dispersing agent/surface active agents,
d) Fillers,
e) Perfume,
f) Hair conditioner, and
g) Antioxidant.

This standard was first published in 1982. After gaining the experience on the subject, the committee revised this standard in 1993 incorporating two types of powder hair dyes on the basis of shades in vogue in the country. Also the lower limit for dye content was considered essential in order to safeguard consumer’s interest and get him his money’s worth whereas an upper limit was fixed to allow only a safe dye concentration in the ready to use product in the market. A new requirement for active matter in the dye ready for use, prepared after recommended dilution with water as per manufacturer’s instructions was also added. The marking clause was also modified to include expiry date and declaration of ingredients as regular requirements.

The marking clause was further elaborated, according to which the batch number, manufacturing date and maximum PPD content for dyes in powder form will be mandatory for the manufacturers to declare on the carton/pouches.

In the present version (Second Revision) the requirements of active matter as PPD content has been modified for both the types of powder hair dyes as well as for dye ready for use. The test method for dye content has also been modified.

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.
AMENDMENT NO. 1 FEBRUARY 2001
TO
IS 10350: 1999 POWDER HAIR DYSES —
SPECIFICATION
(Second Revision)

[Page 1, Table 1, Sl No. (i)] — Substitute the following for the existing:

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>pH of 5 percent (m/m) solution in water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 to 10</td>
<td>6 to 10</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

[Page 2, clause 5.2(g)] — Substitute the following for the existing:

'g) Best use before............(Month and year to be declared by the manufacturer).

Note — This is exempted in case of pack sizes of 10 g/25 ml or less and if the shelf life of the product is more than 24 months.'

[Page 2, clause 5.2, second para (c)] — Substitute the following for the existing:

'c) List of key ingredients.

Note — This is exempted in case of pack sizes of 30 g/60 ml or less.'

(Page 2, Annex A, clause A-2) — Substitute the following for the existing:

'A-2 procedure

Make 5 percent solution of powder hair dyes at 27± 2°C. Determine its pH after stabilization using the pH meter.'

(PCD 19)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 MAY 2002
TO
IS 10350: 1999 POWDER HAIR DYSES —
SPECIFICATION
(Second Revision)

[Second cover page, foreword, para 4, Sl No. (g)] — Insert the following after (g).

'h) Coupling agents'

(Second cover page, foreword, para 6, line 2) — Substitute 'minimum' for 'maximum'.

[Page 2, clause 5.2 (j)] — Substitute 'Minimum' for 'Maximum'.

[Page 2, clause 5.3.1, para 2, line 12] — Substitute 'dye' for 'eye'.

(PCD 19)

Reprography Unit, BIS, New Delhi, India
Indian Standard

POWDER HAIR DYES — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for powder hair dyes.

2 NORMATIVE REFERENCES

The following Indian 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>3958 : 1984</td>
<td>Methods of sampling cosmetics (first revision)</td>
</tr>
<tr>
<td>4011 : 1984</td>
<td>Methods of test for safety evaluation of cosmetics (second revision)</td>
</tr>
<tr>
<td>4707</td>
<td>Classification of cosmetic raw materials and adjuncts:</td>
</tr>
<tr>
<td>(Part 1) : 1988</td>
<td>Dyes, colours and pigments (first revision)</td>
</tr>
<tr>
<td>(Part 2) : 1993</td>
<td>List of raw materials generally not recognized as safe for use in cosmetics (first revision)</td>
</tr>
</tbody>
</table>

3 TYPES

There shall be two types of the dyes, namely,

Type 1 Black
Type 2 Brown

4 REQUIREMENTS

4.1 The powder hair dye shall be a fine, free flowing powder, usually coloured grey or greyish black.

4.2 Ingredients

Unless specified otherwise, all the raw materials used in the manufacture of powder hair dye shall conform to the requirements prescribed in the relevant Indian Standards where such standards exist, subject to the provisions of The Drugs and Cosmetics Act, as amended from time to time and updated.

4.3 Ingredients other than dyes shall comply with the provisions of IS 4707 (Part 1) and IS 4707 (Part 2).

4.4 The powder hair dye shall comply with the requirements given in Table 1 when tested according to the methods prescribed in Annex A and Annex B.

4.5 Dye Ready for Use

The dye ready for use is prepared after mixing the powder dye with water as recommended by the manufacturer in the leaflet which is enclosed in the container, packed with the powder dye or may be printed on the carton itself, as the case may be. PPD content in dye ready for use may be calculated by the procedure given in Table 2. The upper limit is being prescribed to check the concentration of PPD to ensure that the same remains within the safe limits.

Table 1 Requirements for Powder Hair Dyes

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Method of Test, Ref to Annex</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>i)</td>
<td>pH of 5 percent (m/m) solution in water</td>
<td>7 to 10</td>
<td>A</td>
</tr>
<tr>
<td>ii)</td>
<td>Total active matter (dye content), percent by mass</td>
<td>3 to 30</td>
<td>2 to 20</td>
</tr>
</tbody>
</table>

Table 2 Requirements for Dye Ready for Use

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Method of Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>i)</td>
<td>Calculated active matter (as PPD) in solution after recommended dilution with water, percent by mass</td>
<td>3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

NOTE — The procedure for calculation of PPD content in solution after recommended dilution with water is as follows:

If PPD content in powder hair dye is x percent and manufacturer recommends that 1 part of dye may be mixed with y parts of water then PPD content in dye ready for use is...
5 PACKING AND MARKING

5.1 Packing

5.1.1 The material shall be packed in suitable air-tight containers.

NOTE — The chemical gets oxidized in air and it is essential to keep it away from light and moisture, in air-tight containers.

5.2 Marking

Each container (pouch/glass bottles, etc) and the package (carton/box) containing the same shall be marked with the following information:

a) Name of the material;

b) Indication of the source of manufacture;

c) Warning ‘Shall not be used for dyeing eyelashes or eyebrows’;

d) Declaration ‘Maximum arylamine (p-phenylenediamine) after dilution as per manufacturer’s instruction for use (to be declared by manufacturer);

e) Net content;

f) Shade of dye;

gh) Best use before ..... (Month and year to be declared by the manufacturer);

h) Any other information required by statutory authorities;

j) Maximum PPD content for dyes in powder form;

k) Batch number; and

m) Month and year of manufacture.

In addition to the above, the following information shall also be given in the attached leaflet:

a) Procedure for conducting preliminary test for sensitivity (patch test);

b) Instruction for use; and

c) List of ingredients.

5.2.1 BIS Certification Marking

The containers may also be marked with the BIS Certification Mark.

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

5.3 Caution

Para-Phenylenediamine may cause skin irritation in certain cases and so a preliminary test according to the accompanying direction should first be made (see 5.3.1). The material should not be used for dyeing the eyelashes or eyebrows, as its use may cause blindness.

5.3.1 Each package shall contain instructions in English and local language on the following lines for carrying out the test.

‘Para-Phenylenediamine containing preparations may cause serious inflammation of the skin in some cases and so a preliminary test should always be carried out to determine whether or not special sensitivity exists. For carrying out the test, cleanse a small area of skin behind the ear or upon the inner surface of the forearm, using either soap and water or alcohol. Apply a small quantity of the hair dye as prepared for use to the area and allow it to dry. After 24 hours, wash the area gently with soap and water. If no irritation or inflammation is apparent, it may be assumed that no hypersensitivity to the eye exists. The test should, however, be carried out before each and every application. This preparation should on no account be used for dyeing eyebrows or eyelashes as severe inflammation of the eye or even blindness may result.

6 SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed in IS 3958.

6.2 Test for all characteristics shall be carried out on the composite sample.

6.3 The material shall be taken to have conformed to the specification if the composite sample passes all the tests.

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 4.1, and Table 1, Sl No. (i)]

DETERMINATION OF pH

A-1 APPARATUS

A pH meter preferably equipped with glass electrode.

A-2 PROCEDURE

Make 5 percent solution of powder, hair dye at 27 ± 2°C. Determine its pH within 3 minutes using the pH meter.
ANNEX B

[Clause 4.1, and Table 1, Sl No. (ii)]

DETERMINATION OF DYE CONTENT

B-1 OUTLINE OF THE METHOD
This method estimates the para-phenylenediamine as diacetyl derivative of para-phenylenediamine.

B-2 APPARATUS
B-2.1 G 4 Sintered Glass Crucible
B-2.2 Soxhlet Apparatus
B-2.3 250 ml Beaker

B-3 REAGENTS
B-3.1 Chloroform
B-3.2 Acetic Anhydride

B-4 PROCEDURE
Weigh accurately 1 to 2 g of the sample in a thimble and extract it with chloroform in a Soxhlet extractor for about 3 hours. Transfer the extract to a 250 ml beaker. Rinse the flask with few small portions of chloroform. Evaporate chloroform to about 25 ml and add 1 ml of acetic anhydride slowly with stirring. Let it stand for one hour and filter on a weighed G4 sintered glass crucible. Transfer all the precipitate to the crucible. Wash the beaker and precipitate with three 5 ml portions of chloroform. Dry the crucible to constant mass at 120°C and weigh.

B-5 CALCULATION

\[ p\text{-Phenylenediamine, percent by mass} = \frac{M_1 \times 0.5626 \times 100}{M_2} \]

where
\[ M_1 = \text{mass in g of the precipitate, and} \]
\[ M_2 = \text{mass in g of the sample taken.} \]
Bureau of Indian Standards

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This Indian Standard has been developed from Doc: No. PCP 19 (1486).

Amendments Issued Since Publication

<table>
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<th>Text Affected</th>
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BUREAU OF INDIAN STANDARDS

Headquarters:
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 323 01 31, 323 33 75, 323 94 02

Regional Offices:
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002 323 76 17, 323 38 41
Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola CALCUTTA 700054 337 84 99, 337 85 61 337 86 26, 337 91 20
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022 60 38 43 60 20 25
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