Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

IS 15205 (2002): Oxidation Hair Dyes (Emulsion Type) [PCD 19: Cosmetics]
Indian Standard

OXIDATION HAIR DYES
(EMULSION TYPE) — SPECIFICATION

ICS 71.100.70
Hair Dyes are cosmetic products intended for imparting color to hair to produce varying shades. Hair dyes may be broadly classified as liquid hair dyes and powder hair dyes. Liquid hair dyes may be further classified into the following types:

a) Oxidation hair dyes (liquid),
b) Oxidation hair dyes (emulsion type), and
c) Vegetable based hair dyes.

In the recent past, a number of oxidation hair dyes (emulsion types) have appeared in the Indian markets and it was felt necessary to develop specification for this category of dyeing preparation. The product being in emulsion form, this standard intends to include requirement limits for fatty matter content in the preparation.

This specification covers only oxidation hair dyes (emulsion type) containing phenylene diamine and other colourants as active ingredients. Modern hair dyes are commonly distinguished on the basis of duration up to which their colour effect lasts. Broadly, dyes are sold in the market entitled as temporary, semi-permanent and permanent hair dyes. Though, no time limit has been defined in this specification to categorize a dye to a particular category.

The oxidation hair dyes (emulsion type) are frequently used as permanent hair colourants. Apart from their long lasting nature, they differ from temporary and semi-permanent colours in two respects, namely, temporary and semi-permanent colours use ready coloured dyes, which add to the existing colour of the hair. On the other hand, oxidation hair dyes (emulsion type) contain an oil phase dispersed in water, the system stabilized with an emulsifying agent. These are oil-in-water type of preparations and contain ingredients that impart colour on the hair after being oxidized with atmospheric oxygen. Oxidation hair dyes (emulsion type) are single phase dyes with no bleaching agent or developers like ammonia or hydrogen peroxide required to be supplied along with the dye. The final colour can be darker than the original colour.

Oxidation hair dyes (emulsion type) work on the same principle of oxidation hair dyes (liquid) with a difference that the oxygen required for the process of oxidation is not readily available in the form of a developer but it takes oxygen from the atmosphere for the dyeing process. Since the process of oxidation is very slow, emulsion type dyes require repeated applications on consecutive 2 to 3 days.

Furthermore, ideal properties of oxidation hair dyes have been listed in Annex A for guidance only. Some of these properties are presently not adequate for standardization, hence included for information only.

A scheme for labelling environment friendly products known as ECO-Mark has been introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO-Mark is being administered by the Bureau of Indian Standards (BIS) under the BIS Act, 1986 as per the Resolution No.71 dated 21 February 1991 and No.768 dated 24 August 1992 published in the Gazette of the Government of India. For a product to be eligible for marking with ECO logo, it shall also carry the Standard Mark of BIS besides meeting additional environment friendly requirements. For this purpose, the Standard Mark of BIS would be a single mark being a combination of the BIS monogram and the ECO logo. Requirements for ECO friendliness will be additional. Manufacturing units will be free to opt for Standard Mark alone also.

These requirements are included based on the Gazette Notification No.170 dated 18 May 1996 for environment friendly products published in the Gazette of India.

The composition of the Committee responsible for formulation of this standard is given in Annex E.

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
OXIDATION HAIR DYES
(EMULSION TYPE) — SPECIFICATION

1 SCOPE

1.1 This standard prescribes the requirement and method of sampling and test for oxidation hair dyes (emulsion type).

1.2 This Indian Standard does not cover oxidation hair dyes (liquid and cream), for which a separate standard IS 8481 exists.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard. The 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 : 1997</td>
<td>Methods of test for safety evaluation of cosmetics (second revision)</td>
</tr>
<tr>
<td>4707</td>
<td>Classification of cosmetics raw materials and adjuncts:</td>
</tr>
<tr>
<td>Part 1 : 2001</td>
<td>Dyes, colours and pigments (second revision)</td>
</tr>
<tr>
<td>Part 2 : 2001</td>
<td>List of raw materials generally not recognized as safe for use in cosmetics (second revision)</td>
</tr>
<tr>
<td>4730 : 1994</td>
<td>Methods for determination of density of liquids — Specification (first revision)</td>
</tr>
<tr>
<td>8481 : 2001</td>
<td>Oxidation hair dyes liquid — Specification (second revision)</td>
</tr>
</tbody>
</table>

3 TYPES

3.1 Oxidation hair dyes (emulsion type) are broadly classified in two categories depending upon the colour, which they impart to the hair after application of dye:

a) Type 1 — Black, and
b) Type 2 — Brown.

4 REQUIREMENTS

4.1 Description

These hair dyes (emulsion types) are ready for use and slightly thick, light grey to bluish black viscous liquids.

4.2 Ingredients

Ingredients of dye shall comply with the provisions of IS 4707 (Part 1) and IS 4707 (Part 2) subject to the provisions of the Drugs and Cosmetics Act and Rules, 1945.

4.3 Unless otherwise specified, all the raw materials used in the manufacture of oxidation hair dyes (emulsion type) shall conform to the requirement prescribed in the relevant Indian Standards wherever such standards exist.

4.4 Dye

The active ingredient may be an arylamine (para-phenylenediamine, PPD) dispersed in a suitable vehicle in an emulsion form. The brown coloured dye may contain ortho or para amino phenol, etc, besides arylamine. It may also contain suitable modifiers. The dye shall comply with the requirements given in Table 1 when tested according to the method given in Annex B to D and referred Indian Standard.

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Method of Test, Ref to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Black</td>
<td>Density 0.90 to 0.98</td>
<td>IS 4730</td>
</tr>
<tr>
<td>Type 2</td>
<td>Brown</td>
<td>Density 0.90 to 0.98</td>
<td>IS 4730</td>
</tr>
</tbody>
</table>

4.5 Additional Requirements for ECO-Mark (Optional)

4.5.1 General Requirements

4.5.1.1 The product shall conform to the requirements for quality, safety and performance prescribed under 4.5.1.2 to 4.5.1.5.

4.5.1.2 All the ingredients that go into formulation of cosmetics shall comply with the provisions of IS 4707 (Part 1) and IS 4707 (Part 2). The product shall also
meet specific requirements as given in the standard.

4.5.1.3 The product package shall display a list of key ingredients in descending order of quantity present.

4.5.1.4 The product shall not be manufactured from any carcinogenic ingredients.

4.5.1.5 The manufacturer shall produce to BIS environmental consent clearance from the concerned State Pollution Control Board as per the provisions of the Water (Prevention and Control of Pollution) Cess Act, 1977 and the Air (Prevention and Control Pollution) Act, 1981 along with the authorization, if required under the Environment (Protection) Act, 1986 and the Rules made thereunder, while applying for ECO-Mark. Additionally, provisions of the Drugs and Cosmetics Act, 1940 and the Rules thereunder shall also be complied with.

4.6 Specific Requirements

4.6.1 Heavy metals calculated as lead (Pb) and arsenic (As$\text{O}_3$) shall not exceed 20 and 2 ppm, respectively when tested by the respective method prescribed in Indian Standards.

5 PACKING AND MARKING

5.1 Packing

The dye shall be filled in an amber coloured glass bottle properly capped or any other suitable container like collapsible plastic tubes, etc. The bottles/collapsible tubes/other suitable container of dye and the carton shall be suitably labelled.

5.2 Storage

The material shall be stored in a cool, dark place.

5.3 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) Identification of the source of manufacture;

c) Warning 'shall not be used for dyeing eyelashes or eyebrows';

d) Declaration 'arylamine (p-phenylenediamine) not more than 4 percent for Type 1 and not more than 3 percent for Type 2';

e) Net content;

f) Shade of dye;

g) The words, 'For best results use before ....*'

*(month and year to be given);

h) List of key ingredients; and

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

j) Any other information required by statutory authorities.

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), and

b) Instructions for use.

5.3.1 BIS Certification Marking

The containers may also be marked with Standard Mark.

5.3.1.1 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.

5.4 Caution

p-Phenylenediamine (PPD) may cause skin irritation in certain cases, so a preliminary test according to the accompanying direction should first be made (see 5.4.1). The material shall not be used for dyeing the eyelashes or eyebrows as its use may cause blindness.

5.4.1 Each package shall contain instructions in English and local languages on the following lines for carrying out the test:

'p-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 used and allow it to dry. After 24 h, wash the area gently with soap and water. If no irritation or inflammation is apparent, it may be assumed that no hypersensitivity to the dye 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 the requirements shall be carried out on a composite sample.

6.3 The oxidation hair dyes, emulsion type preparation shall be taken to have conformed to this specification if the composite sample passes all the tests.

7 TEST METHODS
Test for the requirements listed under 4 and Table 1 shall be carried out according to methods prescribed in Annex B to D and referred Indian Standard as mentioned under col 5 and 6 of Table 1.

8 QUALITY OF REAGENTS
Unless specified otherwise, pure chemicals and distilled water (see IS 1070) shall be used in tests.

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

ANNEX A
(Foreword)

IDEAL PROPERTIES OF OXIDATION HAIR DYE (EMULSION TYPE)

1) When seen visually oxidation hair dye (emulsion) shall be homogeneous and uniform. There should not be any sign of separation. It shall be thick and viscous but must be easily pourable.
2) Must impart the desired colour on hair for a longer duration.
3) When applied on hair, it must spread easily and disperse quickly over the hair.
4) Hair dye after application should rinse out easily and should not have any residual tackiness and should not affect the texture of hair.
5) Dye should have an agreeable odour/perfume.
6) The product should have good stability for the period as declared by the manufacturer.

ANNEX B
[Table 1, Sl No. (i)]

DETERMINATION OF pH

B-1 APPARATUS
A pH meter, preferably equipped with glass electrode.

B-2 PROCEDURE
Take 50 ml of the dye and determine its pH at 27 ± 2°C using pH meter.
ANNEX C

DETERMINATION OF ARYLAMINE CONTENT

C-1 REAGENTS

C-1.1 Sodium Hypochlorite Solution — 5 percent (available chlorine NLT 3.5 percent).

C-1.2 Sodium Arsenite Solution — 10 percent, dissolve 10 g of sodium arsenite (reagent grade) in 100 ml of water or dissolve by heating 8.5 g of arsenuous oxide and 1.5 g of sodium hydroxide in 100 ml water.

C-1.3 Sodium Carbonate

C-1.4 Chloroform

C-1.5 Potassium Iodide

C-1.6 Hydrochloric Acid Concentrated — 38 percent (w/v).

C-1.7 Sodium Thiosulphate Solution — 0.1 N.

C-1.8 Starch Solution
Triturate 5 g of starch, add 0.01 g of mercuric iodide in 30 ml of cold water and slowly pour it with stirring into one litre of boiling water. Boil for 3 min, allow to cool and decant off the supernatant liquid for test.

C-2 PROCEDURE

C-2.1 Preparation of Sample Solution
Weigh accurately about 10 g of dye sample and dilute to 250 ml using water in a standard volumetric flask such that 10 ml of the solution contains about 0.01 g of paraphenylenediamine.

C-2.2 Add to a separating funnel containing 5 ml of sodium hypochlorite solution and 1 g of sodium carbonate, 10 ml of the sample solution. Gently swirl the separating funnel during addition so that the solution is thoroughly mixed (insufficient sodium hypochlorite is indicated by the presence of brown colour). If brown colour appears, repeat the operation by using larger quantity of sodium hypochlorite. Stopper the separating funnel and shake for 10 s. Add 10 ml of sodium arsenite solution, stopper and shake again.

C-2.3 Extract the dichlorimide with two 25 ml portions of chloroform and collect combined extracts in a second separating funnel. Wash the extracts with two 10 ml portions of water and transfer into an iodine flask. Make additional chloroform extractions, if necessary, wash with water and combine with the major portion (any emulsion formed during extraction may be broken by adding a few drops of alcohol). Add 50 ml of water containing 1 g of potassium iodide and 3 ml of hydrochloric acid to the iodine flask. Stopper the flask and shake vigorously at intervals during titration. The iodine in the chloroform acts as an indicator. Towards the end of the titration, add starch solution for final end point.

C-3 CALCULATION
Total active matter (dye content), \( \frac{45.05 \times V \times N}{M} \) percent by mass
where
\( V \) = volume of sodium thiosulphate required to titrate 10 ml of sample solution,
\( N \) = normality of sodium thiosulphate solution, and
\( M \) = mass of dye taken to prepare 250 ml of sample solution.

ANNEX D

DETERMINATION OF TOTAL FATTY SUBSTANCES

D-1 PRINCIPLE OF THE METHOD
The emulsion is broken with a dilute mineral acid and fatty matter is extracted with petroleum ether or ethyl ether. It is weighed after removal of the solvent.

D-2 REAGENTS

D-2.1 Dilute Hydrochloric Acid 1 : 1 (w/v)
D-2.2 Ethyl Ether (40 to 60°C) or Petroleum Ether (60 to 80°C)
D-2.3 Methyl Orange Indicator Solution — Dissolve 0.1 g of methyl orange in 100 ml of water.

D-2.4 Sodium Sulphate Anhydrous

D-3 PROCEDURE

Weigh accurately about 4 to 5 g of the material into the conical flask, add 25 ml dilute hydrochloric acid, fit a reflux condenser into the flask, boil the contents until the solution is perfectly clear. Pour the contents of the flask into a 300 ml separating funnel and allow it to cool to 20°C. Rinse the conical flask with ethyl ether in portions of 10 ml. Pour the ether rinsings into the separating funnel. Shake the separating funnel well and leave until the layers separate. Separate out the aqueous phase and shake it out with 50 ml of ether twice. Combine all the ether extracts and wash them with water until free of acid (when tested with methyl orange indicator solution).

Filter the ether extracts through filter paper containing sodium sulphate into a conical flask, which has been previously dried at a temperature of 105 ± 2°C and then weigh. Wash the sodium sulphate on the filter with ether and combine the washings with filtrate. Distil off the ether and dry the material remaining in the flask at a temperature of 105 ± 2°C to constant mass.

D-4 CALCULATION

Total fatty substance, percent by mass = 100 \( \frac{M_1}{M_2} \)

where

\( M_1 \) = mass in gram of the residue, and

\( M_2 \) = mass in gram of the sample taken for the test.
## ANNEX E

(Foreword)

### COMMITTEE COMPOSITION

Cosmetics Sectional Committee, PCD 19

<table>
<thead>
<tr>
<th>Organization</th>
<th>Representative(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directorate General of Health Services, New Delhi</td>
<td>[Chairman] SIRI ASHWINI KUMAR</td>
</tr>
<tr>
<td>All India Small Scale Cosmetic Manufacturer’s Association, Mumbai</td>
<td>[Alternate] SIRI B. M. DESAI</td>
</tr>
<tr>
<td>Bengal Chemicals &amp; Pharmaceuticals Ltd, Kolkata</td>
<td>[Alternate] SIRI B. M. CHOPRA</td>
</tr>
<tr>
<td>Central Drugs Laboratory, Kolkata</td>
<td>[Alternate] SIRI S. CHATTERJEE</td>
</tr>
<tr>
<td>Central India Pharmacopoeia Laboratory, Ghaziabad</td>
<td>[Alternate] DR. S. C. CHOWHURY</td>
</tr>
<tr>
<td>Consumer Education and Research Centre, Ahmedabad</td>
<td>DR. A. K. MANDAL</td>
</tr>
<tr>
<td>Consumer Guidance Society, Mumbai</td>
<td>DR. M. K. MAZUMDER</td>
</tr>
<tr>
<td>Colgate-Palmolive (India) Ltd, Mumbai</td>
<td>[Alternate] DR. A. C. DAS GUPTA</td>
</tr>
<tr>
<td>Commissioner, Food &amp; Drugs Administration, Mumbai</td>
<td>[Alternate] DR. S. C. SAXENA</td>
</tr>
<tr>
<td>Dabur Research Foundation, Sahibabad (UP)</td>
<td>[Alternate] DR. V. R. BAMBHUKAR</td>
</tr>
<tr>
<td>Food &amp; Drugs Control Administration, Gujarat State, Gandhinagar</td>
<td>[Alternate] SIRI V. K. SHIVAMARTANA</td>
</tr>
<tr>
<td>Godrej Soaps Ltd, Mumbai</td>
<td>[Alternate] SIRI M. B. DESAI</td>
</tr>
<tr>
<td>Hindustan Lever Research Centre, Mumbai</td>
<td>[Alternate] SIRI N. G. WAGLE</td>
</tr>
<tr>
<td>Hygienic Research Institute, Mumbai</td>
<td>DR. D. B. A. NARAYANA</td>
</tr>
<tr>
<td>Indian Soaps and Toiletries Members’ Association, Mumbai</td>
<td>DR. P. J. THOMAS</td>
</tr>
<tr>
<td>Johnson &amp; Johnson Ltd, Mumbai</td>
<td>[Alternate] SIRI J. J. SIRIYU</td>
</tr>
<tr>
<td>Lady Irwin College, New Delhi</td>
<td>[Alternate] SIRI A. RANGABANDAN</td>
</tr>
<tr>
<td>Lady Amritbai Dogra College, Nagpur</td>
<td>[Alternate] DR. PUSHKER SINGH</td>
</tr>
<tr>
<td>Maharishi Ayurved Products, Noida (UP)</td>
<td>[Alternate] SIRI N. S. BHALAN</td>
</tr>
<tr>
<td>Nahira Cosmetic Enterprises Pvt Ltd, Mumbai</td>
<td>[Alternate] SIRI CYRUS DALAL</td>
</tr>
<tr>
<td>National Test House, Kolkata</td>
<td>[Alternate] SIRI M. B. DESAI</td>
</tr>
<tr>
<td>Procter &amp; Gamble, Mumbai</td>
<td>[Alternate] SIRI M. RANGABANDAN</td>
</tr>
<tr>
<td>Shingar Ltd, Mumbai</td>
<td>[Alternate] SIRI V. P. MUNDON</td>
</tr>
<tr>
<td></td>
<td>[Alternate] DR. P. K. ASHTYANandan</td>
</tr>
<tr>
<td></td>
<td>[Alternate] DR. P. K. ASHTYANandan</td>
</tr>
<tr>
<td></td>
<td>The Principal</td>
</tr>
<tr>
<td></td>
<td>DR. SHRIMATI S. B. KULKAR</td>
</tr>
<tr>
<td></td>
<td>[Alternate] DR. S. C. SAXENA</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI V. K. SHIVASTAVYA</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI MADHUKAR Y. BORDWNEK</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI G. I. LAD</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI K. C. NASKAR</td>
</tr>
<tr>
<td></td>
<td>[Alternate] DR. S. K. SAH</td>
</tr>
<tr>
<td></td>
<td>[Alternate] DR. ALEN VISWANATH</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI M. SIVAPRASADAR</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI V. K. SINGH</td>
</tr>
<tr>
<td></td>
<td>[Alternate] SIRI V. K. SINGH</td>
</tr>
</tbody>
</table>

(Continued on page 7)
(Continued from page 6)

Organization
Shriram Institute for Industrial Research, New Delhi
In personal capacity (B-22, Manish Complex No. 10, Convent Road, Bangalore 560021)
BIS Directorate General

Representative(s)
SIRI S. K. CHID
DR. U. C. BASU (Alternate)

ANJAN KAR, Director & Head (PCD)
[Representing Director General (Ex-officio)]

Member Secretary
DR. (SHIRMATI) VIJAY MALIK
Director (PCD), BIS

Hair Care Products Subcommittee, PCD 19 : 2

Godrej Soaps Ltd, Mumbai

Bengal Chemicals & Pharmaceuticals Ltd, Kolkata

Cavin Kare Ltd, Chennai

Consumer Guidance Society, Mumbai

Food & Drugs Administration, Mumbai

Food & Drugs Control Admn, Chandigarh

Geoffrey Manners & Co Ltd, Mumbai

Hindustan Lever Research Centre, Mumbai

Heena Exports Corporation, Faridabad

Hygienic Research Institute, Mumbai

Impression Cosmetics, Faridabad

Johnson & Johnson Ltd, Mumbai

Marico Industries Ltd, Mumbai

Micky Products, Faridabad

Procter & Gamble India Ltd, Mumbai

Shriram Institute for Industrial Research, New Delhi

In personal capacity (B-22, Manish Complex No. 10, Convent Road, Bangalore 560021)
Bureau of Indian Standards

BIS is a statutory institution established under the Bureau of Indian Standards Act, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of ‘BIS Catalogue’ and ‘Standards: Monthly Additions’.

This Indian Standard has been developed from Doc : No. PCD 19 (1735)

Amendments Issued Since Publication

<table>
<thead>
<tr>
<th>Amend No.</th>
<th>Date of Issue</th>
<th>Text Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 323 01 31, 323 33 75, 323 94 02

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110 002
Telephones : 323 76 17, 323 38 41

Eastern : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi
KOLKATA 700 054
Telephones : 337 84 99, 337 85 61, 337 86 26, 337 91 20

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160 022
Telephones : 60 38 43, 60 20 25

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600 113
Telephones : 254 12 16, 254 14 42, 254 25 19, 254 13 15

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
MUMBAI 400 093
Telephones : 832 92 95, 832 78 58, 832 78 91, 832 78 92

Branches : AHMEDABAD, BANGALORE, BHOPAL, BHUBANESHWAR, COIMBATORE, FARIDABAD, GHAZIABAD, GUWAHATI, HYDERABAD, JAIPUR, KANPUR, LUCKNOW, NAGPUR, NALAGARH, PATNA, PUNE, RAJKOT, THIRUVANANTHAPURAM, VISAKHAPATNAM

Reprography Unit, BIS, New Delhi, India