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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.

“जाने 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”

Indian Standard
REFINED SUGAR — SPECIFICATION
(Second Revision)

ICS 67.180.10
FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Sugar Industry Sectional Committee had been approved by the Food and Agriculture Divisional Council.

Refined sugar is manufactured from any type of sugar or sugar cane or sugar beet, in general by a process of purification, consisting broadly of affination, melting, chemical treatment, filtration, decolourization and subsequent recrystallization in vacuum pan, the treatment depending upon the nature of the initial material. It may be of any grain size (large, medium or small).

This standard was published in 1958 and subsequently revised in 1969 to incorporate the international recommendations in respect of requirements and methods of tests for colour and specific conductivity of refined sugar. This revision is being undertaken to align with the revised Codex Standard for Sugars, CODEX STAN 212-1999 and to align the methods of test with the International Commission for Uniform Methods of Sugar Analysis (ICUMSA).

In the preparation of this standard due consideration has been given to the provisions of Prevention of Food Adulteration Act, 1954 and Rules framed thereunder. However, this standard is subject to restrictions imposed under this Act, 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.
IS 1151:2003
Indian Standard
REFINED SUGAR — SPECIFICATION
(Second Revision)

1 SCOPE
This standard prescribes the requirements and the methods of sampling and test for refined sugar.

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>1152 : 2003</td>
<td>Icing sugar — Specification (second revision)</td>
</tr>
<tr>
<td>4905 : 1968</td>
<td>Methods for random sampling</td>
</tr>
<tr>
<td>10146 : 1982</td>
<td>Specification for polyethylene for its safe use in contact with foodstuffs, pharmaceuticals and drinking water</td>
</tr>
<tr>
<td>10910 : 1984</td>
<td>Specification for polypropylene and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals and drinking water</td>
</tr>
<tr>
<td>14350 : 1996</td>
<td>Code for hygienic conditions in sugar factories</td>
</tr>
<tr>
<td>15279 : 2003</td>
<td>Sugar and sugar products — Methods of test</td>
</tr>
</tbody>
</table>

3 TERMINOLOGY
3.1 Refined Sugar
Purified and crystallized sucrose (saccharose) with a polarization not less than 99.7°Z

4 REQUIREMENTS
4.1 Description
Refined sugar shall be crystalline, white, odourless and free from dirt, iron filings and other extraneous matter.

4.2 The product shall also comply with the requirements given in Table 1.

4.3 Refined sugar shall be manufactured, packed, stored and distributed under hygienic conditions (see IS 14350).

Table 1 Requirements for Refined Sugar
(Clause 4.2)

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Characteristics</th>
<th>Requirement</th>
<th>Method of Test, Ref to Cl of IS 15279</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>i)</td>
<td>Loss on drying, percent by mass, Max</td>
<td>0.05</td>
<td>4</td>
</tr>
<tr>
<td>ii)</td>
<td>Polarization, Min</td>
<td>99.7°Z</td>
<td>5</td>
</tr>
<tr>
<td>iii)</td>
<td>Reducing sugar, percent by mass, Max</td>
<td>0.04</td>
<td>7</td>
</tr>
<tr>
<td>iv)</td>
<td>Colour in ICUMSA units, Max</td>
<td>60</td>
<td>8</td>
</tr>
<tr>
<td>v)</td>
<td>Conductivity ash, percent by mass, Max</td>
<td>0.04</td>
<td>9</td>
</tr>
<tr>
<td>vi)</td>
<td>Sulphur dioxide, mg/kg, Max</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>vii)</td>
<td>Lead, mg/kg, Max</td>
<td>0.5</td>
<td>15</td>
</tr>
<tr>
<td>viii)</td>
<td>Chromium, μg/kg, Max</td>
<td>20</td>
<td>16</td>
</tr>
</tbody>
</table>

5 PACKING
5.1 Refined sugar shall be packed in clean, sound and new jute bags (see IS 1943) or bags made of polypropylene (see IS 10910) or bags made of high density polyethylene (see IS 10146). The jute bags may be lined with polyethylene film. The mouth of each bag shall be either machine-stitched or rolled over and hand-stitched. If hand-stitched, the stitches shall be in two rows with at least 14 stitches in each row.

5.1.1 In the case of smaller consumer packs, the product shall be packed in food grade plastics conforming to relevant Indian Standard or any other suitable non-toxic material.

6 MARKING
6.1 Each bag/pack shall bear legibly and indelibly the following particulars:

a) Name of the product;
b) Name and address of the manufacturer;
c) Net weight of sugar;
d) Month and year of manufacture;
e) Batch or Code number;
f) The words ‘Best before …….’ (month and year to be indicated); and
g) Any other markings as specified under the
6.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

6.2.1 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 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.

7 SAMPLING

Representative samples of refined sugar shall be drawn and the criteria for conformity to this standard shall be established, according to the method prescribed in Annex A. In case of consumer packs, samples of refined sugar shall be drawn and the criteria for conformity to this standard shall be established, according to the method prescribed in Annex A of IS 1152.

ANNEX A

(Clauses 7, 8 and 9)

SAMPLING OF REFINED SUGAR

A-1 GENERAL REQUIREMENTS

A-1.0 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

A-1.1 The sample shall be taken in a protected place not exposed to damp air, dust or soot.

A-1.2 The sampling instrument shall be clean and dry when used.

A-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

A-1.4 The samples shall be placed in clean, dry and moisture-proof containers.

A-1.5 The sample containers shall be sealed air-tight after filling and marked with full details of sampling, that is, name of the material, the date of sampling, month and year of manufacture, name of the producer, name of the person carrying out the sampling and such other particulars as considered necessary.

A-2 SCALE OF SAMPLING

A-2.1 Lot

All the bags in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the group of bags in each batch shall constitute separate lots.

A-2.1.1 Each lot shall be tested for ascertaining the conformity of refined sugar to the requirement of this standard.

A-2.2 The number of bags to be selected for sampling shall be in accordance with col 2 and 3 of Table 2.

Table 2 Number of Bags to be Selected for Sampling

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>No. of Bags in each Lot</th>
<th>No. of Bags to be Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>i)</td>
<td>2 - 25</td>
<td>2</td>
</tr>
<tr>
<td>ii)</td>
<td>26 - 100</td>
<td>3</td>
</tr>
<tr>
<td>iii)</td>
<td>101 - 500</td>
<td>5</td>
</tr>
<tr>
<td>iv)</td>
<td>501 - 1000</td>
<td>7</td>
</tr>
<tr>
<td>v)</td>
<td>1 001 and above</td>
<td>8</td>
</tr>
</tbody>
</table>

A-2.3 These bags shall be selected at random from the lot and in order to ensure the randomness of selection, the procedure given in IS 4905 may be followed.
A-3 TEST SAMPLES AND REFEREE SAMPLE
From the top, middle and bottom portions of each of the selected bags (see A-2) approximately equal quantity of the sugar shall be taken with the help of a suitable sampling instrument. The sample collected from each of the bags shall be mixed thoroughly to constitute a composite sample of 600 g. The composite sample thus prepared shall be divided approximately into three equal parts; one for the purchaser, one for the supplier and the third for the referee; and sealed air-tight with the particulars as given in A-1.5.

A-4 NUMBER OF TESTS
The composite sample prepared as under A-3 shall be tested for the characteristics as prescribed in Table 1.

A-5 CRITERIA FOR CONFORMANCE
The lot shall be declared as conforming to this standard when the test results on various characteristics obtained on the composite sample satisfy the corresponding requirements as specified in 4 and Table 1.
Bureau of Indian Standards

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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. FAD 2 (1370).

Amendments Issued Since Publication

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

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AMENDMENT NO. 1 FEBRUARY 2005
TO
IS 1151 : 2003 Refined Sugar — Specification
(Second Revision)

(Page 1, clause 6.1) — Insert the following new sub-clause 6.1.1 after clause 6.1:

‘6.1.1 In case of wholesale packages, the declaration of particulars as given under clause 6.1 (d) and (f) are optional.’

(FAD 2)

Reprography Unit, BIS, New Delhi, India
AMENDMENT NO. 2 JUNE 2011
TO
IS 1151 : 2003 Refined Sugar — Specification
(Second Revision)

[Page 1, clause 6.1(c)] — Substitute ‘Net quantity’ for ‘Net weight’.

(FAD 2)

Reprography Unit, BIS, New Delhi, India