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भारतीय मानक

शेविंग साबुन — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

SHAVING SOAP — SPECIFICATION

(First Revision)

ICS 71.100.40

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

September 2001

Price Group 3

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Soaps And Other Surface Active Agents Sectional Committee had been approved by the Chemical Division Council.

This standard was originally published in 1970. Based on the experience gained over the years, the technical committee responsible for formulation of this standard decided to revise it. In the present (first revision), a new requirement of potassium content in total alkali has been incorporated alongwith its test method.

Shaving soaps are designed to soften the beard which is a necessary prerequisite for a smooth and clean shave. They may be manufactured by the cold or semi-boiled or full boiled process where high grade oils, fats, fatty acids, etc, are saponified with a mixture of caustic potash and caustic soda.

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 would be administered by the Bureau of Indian Standards (BIS) under the *Bureau of Indian Standards Act*, 1986 as per the Resolutions No. 71 dated 21 February 1991 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 ISI Mark of BIS besides meeting additional environment friendly requirements. The requirements to be satisfied for a product to qualify for the BIS Standard Mark for ECO friendliness, has been included in this revision. These requirements will be optional; manufacturing units will be free to opt for the ISI mark alone also.

There is no ISO specification on this subject. This standard is formulated based on indigenous technology and data available.

Composition of the Committee responsible for formulating this standard is given in Annex B.

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

SHAVING SOAP — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and method of sampling and test for shaving soap.

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:

IS No.	*Title*
286 : 1978	Methods of sampling and test for soaps (*second revision)*
1070 : 1992	Reagent grade water (*third revision*)
4955 : 1993	Household laundry detergent powder (*third revision*)
13424 : 1992	Safety evaluation of bathing bar and toilet soap — Methods of test

3 REQUIREMENTS

3.1 Description

Shaving soap shall be of high grade, thoroughly saponified soap, milled and plodded, white or coloured, and perfumed, and compressed to firm smooth cakes in the form of cup soaps or sticks. They shall produce profuse, stable and creamy lather.

3.2 Ingredients

In addition to perfume and moisture, shaving soaps may contain colouring matter, preservatives, medicaments and super fatting agents and such additional substances as are declared on the label. All these materials shall be non-injurious in use with soap.

3.3 Shaving soaps shall also comply with the requirements specified in Table 1.

3.4 Additional Requirements for ECO-Mark

3.4.1 *General Requirements*

3.4.1.1 The product shall conform to the requirements for quality, safety and performance prescribed under **3.1** to **3.3**.

Table 1 Requirements For Shaving Soap

(*Clause* 3.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Clause No. in IS 286	Annex of this Standard
(1)	(2)	(3)	(4)	(5)
i)	Moisture and volatile matter, percent by mass, *Max*	12.0	4	—
ii)	Matter insoluble in alcohol, percent by mass, *Max*	2.0	5	—
iii)	Free caustic alkali (as KOH), percent by mass, *Max*	0.01	6	—
iv)	Chlorides (as KCl) percent by mass, *Max*	1.5	10	—
v)	Unsaponified fatty matter, percent by mass, *Max*	0.5	13	—
vi)	Rosin acids, percent by mass, *Max*	Nil	14	—
vii)	Total fatty matter, percent by mass *Min*	74.0	15	—
viii)	Titre of total fatty acids, °C , *Min*	45	16	—
ix)	Glycerol, percent by mass, *Min*	2.0	22	—
x)	Free carbonate alkali, percent by mass, *Max*	0.5	28	—
xi)	Potassium content, (as K_2O) in total alkali, percent by mass, *Min*	50.0	—	A

3.4.1.2 The manufacturers shall produce to BIS environmental consent clearance from the concerned State and Pollution Control Board as per the provisions of the *Water (Prevention and Control of Pollution) Act*, 1974 along with the authorization, if required under the *Environment (Protection) Act* 1986, while applying for ECO-Mark.

3.4.2 *Specific Requirements*

3.4.2.1 The material shall neither contain any synthetic detergent when tested as per the method given in Annex B and C of IS 4955 nor any phosphate when tested as per the method prescribed in **20** of IS 286.

3.4.2.2 The material shall pass the test for dermatological safety when evaluated as per the method prescribed in IS 13424.

4 SAMPLING

Sampling and criteria for conformity material shall be as prescribed in **3** of IS 286.

5 PACKING AND MARKING

5.1 Packing

The material shall be packed as agreed to between the purchaser and the supplier.

5.1.1 For ECO-Mark the product shall be packed in such packages which are made from recyclable/ reusable or biodegradable material and declared by the manufacturer and may be accompanied with detailed instructions for proper use.

5.2 Marking

The packages shall be securely closed and clearly marked with the following:

a) Name of the material;
b) Indication of source of manufacture;
c) Recognized trade-mark;
d) Year of manufacture;
e) Batch No./Control unit No; and
f) Following critical ingredients mentioning the actual compound in descending order up to a limit of 0.5 percent by mass, except moisture:
   1) Total fatty matter (TFM), and
   2) Matter insoluble in alcohol.

5.2.1 Each package may also be marked with the Standard Mark.

5.2.2 *Additional Marking for Eco-Mark*

The criteria for which the product has been labelled as ECO-Mark.

6 QUALITY OF REAGENTS

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

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

ANNEX A

[(*Table* 1, *Sl No.* (xi)]

DETERMINATION OF POTASSIUM IN SHAVING SOAP

A-1 GENERAL

Two methods, namely, gravimetric and flame photometric methods have been prescribed for determination of K_2O.

A-2 METHOD 1 (GRAVIMETRIC METHOD)

A-2.1 Apparatus

A-2.1.1 *Muffle Furnace*

A-2.1.2 *Platinum Crucible*

A-2.1.3 *Sintered Glass Crucible* (Porosity No. 4)

A-2.1.4 *Air Oven*

A-2.1.5 *Desiccators*

A-2.2 Reagents

A-2.2.1 *Hydrochloric Acid* — 0.1 N and 2 N.

A-2.2.2 *Sodium Tetraphenylboron Solution*

Dissolve 3.0 g of the solid reagent in 500 ml of distilled water in a glass-stoppered bottle. If the solution is turbid add about 1 g moist aluminium hydroxide gel, break up the gel if necessary, and shake the suspension for 15 min. Filter through a Whatman No. 40 filter paper. Refilter the first part of filtrate, if necessary, to ensure a clear filtrate.

A-2.2.3 *Wash Solution*

Precipitate about 0.1 g potassium (present as potassium chloride in 50 ml water) with 40 ml of sodium tetraphenylboron solution added slowly and with constant stirring. Allow to stand for 30 minutes, filter through a sintered glass filtering crucible. Wash with distilled water, and dry for one hour at 120°C. Shake 20-25 mg of the dry precipitate with 200 ml distilled water in a stoppered bottle at 5 minutes intervals during one hour. Filter through a Whatman No. 40 filter paper and use the filtrate as wash-liquid.

A-2.3 Procedure

A-2.3.1 Weigh accurately 0.5 to 1.0 g of soap sample in a platinum crucible. Ash in a muffle furnace at 800°C. Extract the residue with 2 N HCl and dilute to 100 ml in a standard volumetric flask. Mix well. This is sample solution.

A-2.3.2 Transfer 50 ml of solution into a 250-ml beaker. Introduce from a burette 40 ml of the sodium

tetraphenylboron reagent slowly taking 5-10 minutes and stir continuously. The temperature throughout must be kept below 20°C. Allow the precipitate to settle during one hour. Collect the precipitate on a sintered glass filtering crucible (porosity No. 4), wash the precipitate with a small volume (5-10 ml in small portion) of wash solution (*see* **A-2.2.3**) and finally with 1-2 ml of ice-cold distilled water. Dry at 120°C and cool the covered crucible in a desiccator.

A-2.4 Calculation

$$\text{Potassium (as } K_2O\text{), percent by mass in total alkali} = \frac{26.32\, M_1 \times 100}{M_2 \times 12.36}$$

where

M_1 = mass in g of the precipitate, and

M_2 = mass in g of soap sample.

A-3 METHOD 2 (FLAME PHOTOMETRIC METHOD)

A-3.1 Apparatus

A-3.1.1 *Flame Photometer*

Use a flame photometer equipped with atomizer, burner, optical selective device consisting of the reflectors, lenses interference filters and diaphragms; and measuring instrument consisting of photocell, amplifier and sensitive galvanometer. The galvanometer scale ranges from 0 to 100 divisions, which measures the intensity of the radiation, transmitted by the element.

A-3.2 Reagents

A-3.2.1 *Standard Potassium Solution*

Weigh exactly 1.582 g of potassium chloride, dissolve in water and dilute to one litre with water in measuring flask. This solution contains 0.1 g K_2O per 100 ml.

A-3.2.2 *Calibration Graph*

Take 10, 20, 40, 60 and 80 ml of standard potassium solution (*see* **A-3.2.1**) and dilute to 100 ml with distilled water in different measuring flasks. Each flask now contains 0.01, 0.02, 0.04, 0.06 and 0.08 g K_2O per 100 ml. Use these dilute solutions to obtain a corresponding galvanometer reading as given in **A-3.3** and plot the concentration against galvanometer reading in a rectangular co-ordination graph. Draw a smooth curve over the points, which gives a calibration graph in the graph in the range 0.01 to 0.1 percent K_2O.

A-3.3 Procedure

A-3.3.1 *Sample Solution*

Prepare the sample solution as in **A-2.3.1**.

A-3.3.2 Insert the potassium filter corresponding to wavelength 767 nm light burner fed by illuminating gas (laboratory gas) and adjust the specified air pressure between 0.5 to 0.7 kg/cm^2 and maintain the control knob. First spray water and adjust the pointer to zero in galvanometer scale by zero adjustment knob. Then spray the standard potassium solution (*see* **A-3.2.1**) and adjust the deflection to maximum (100) by using sensitivity control knob. Again spray water to see pointer comes to zero; then spray standard solution to indicate 100. Repeat till water reads zero and standard solution reads 100 with same adjustment during both the operations. Now reading zero by water and with the same adjustment 100 by standard solution indicate that the instrument is ready for measurement.

A-3.3.3 Without altering the earlier adjustment of the instrument, spray various diluted solutions prepared in **A-3.3.2** and obtain a calibration graph in the range 0.01 to 0.1 percent K_2O. After washing with water, spray the sample solution and obtain the galvanometer reading. From the graph, read out the corresponding concentration of K_2O in the solution (say A).

A-3.4 Calculation

$$\text{Potassium (as } K_2O\text{), percent by mass in total alkali} = \frac{A \times 10^4}{M \times 12.36}$$

where

A = concentration of K_2O in the sample solution from the calibration curve, and

M = mass of soap sample taken for preparing the sample solution, in g.

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Soaps and Other Surface Active Agents Sectional Committee, CHD 25

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Drugs Controller General of India, New Delhi

Members	*Representing*
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SHRI Y. R. DOSHI (*Alternate*)	

(*Continued on page* 5)

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Soaps Subcommittee, CHD 25:1

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Review of Indian Standards

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