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IS 15154 (2002): Kajal [PCD 19: Cosmetics]

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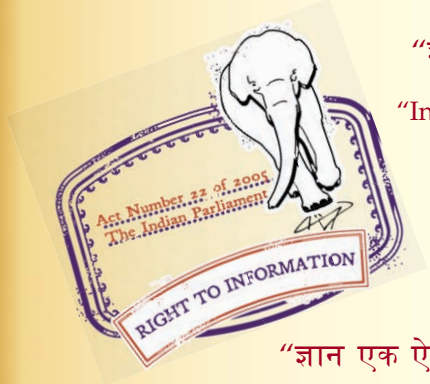

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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भारतीय मानक

काजल — विशिष्टि

Indian Standard

KAJAL — SPECIFICATION

ICS 71.100.70

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

August 2002

Price Group 4

FOREWORD

This Indian Standard 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.

Kajal is a homogenous suspension of vegetable carbon in a fatty (waxy) base, available in the form of pots, sticks, pencil, etc. It is available in black shades. It is applied to eyelids particularly lower eyelids, close to eyelashes to help to accentuate the expressiveness of eyes.

No stipulations have been made in this standard regarding definite composition of *Kajal*. However, it is necessary that concentration of the raw material used in the formulation of finished product should be free from any harmful effects. For evaluation of safety of a new formulation or of a new raw material used in an old formulation, reference may be made to IS 4011 : 1997 'Methods of test for safety evaluation of cosmetics (*second revision*)'. It shall be the responsibility of the manufacturers of *kajal* to satisfy themselves of the safety of their formulation before releasing the product for sale.

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 as environment friendly products published in the Gazette of the Government of India.

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

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

KAJAL — SPECIFICATION

1 SCOPE

This Indian Standard prescribes the requirements and methods of sampling and test for *kajal*.

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:

IS No.	*Title*
264 : 1976	Nitric acid (*second revision*)
265 : 1993	Hydrochloric acid (*fourth revision*)
266 : 1993	Sulphuric acid (*third revision*)
695 : 1986	Acetic acid (*third revision*)
1070 : 1992	Reagent grade water (*third revision*)
2088 : 1983	Methods for determination of arsenic (*second revision*)
3958 : 1984	Methods of sampling cosmetics (*first revision*)
4011 : 1997	Method of test for safety evaluation of cosmetics (*second revision*)
4707	Classification of cosmetic raw materials and adjuncts:
(Part 1) : 2001	Dyes, colours and pigments (*second revision*)
(Part 2) : 2001	List of raw materials generally not recognized safe for use in cosmetics (*second revision*)
5296 : 1995	Chloroform, pure and technical (*second revision*)
14648 : 1998	Methods of test for microbiological examination of cosmetic

3 REQUIREMENTS

3.1 Description

The *kajal* shall be homogenous waxy mass, moulded either in pots, stick or pencil form. It shall be black in shade and shall be reasonably free from sweating and rancidity.

3.2 Ingredients

Unless specified otherwise, all the raw materials used in the manufacture of *kajal* shall conform to the requirements prescribed in the relevant Indian Standards where such standards exist.

3.3 Colour and Pigments

Kajal mainly consist of carbon black derived from vegetable sources and other inorganic pigments which shall comply with the provisions of IS 4707 (Part 1) subject to the provisions of schedule 'Q' of *Drugs and Cosmetics Act* and *Rules* issued by the Government of India and as amended from time to time. No organic colours shall be used in *Kajal* preparation.

3.4 Other Ingredients

Ingredients other than dyes, colours and pigments shall comply with the provisions of IS 4707 (Part 2).

3.5 *Kajal* shall also comply with the requirements given in Table 1.

3.6 Additional Requirements for ECO Mark

3.6.1 The product shall conform to the requirements for quality, safety and performance prescribed under **3.6.1** to **3.6.4**.

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

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

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

3.6.1.4 The manufacturer shall produce to BIS the environmental consent clearance from the State Pollution Control Board as per the provisions of *Water (Prevention and Control of Pollution) Cess Act,* 1977 and the Air required under the *Environment Protection Act,* 1986 and the Rules made thereunder shall also be complied with.

3.6.2 *Specific Requirements*

3.6.2.1 The product shall be dermatologically safe when tested as prescribed in IS 4011.

3.6.2.2 Heavy metals calculated as lead (Pb) and arsenic (As_2O_3)shall not exceed 20 and 2 ppm, respectively when tested by the respective method prescribed in Indian Standards.

3.6.2.3 For the purpose of formulation of *kajal*, the carbon black derived from vegetable sources and other safe inorganic ingredients shall only be used.

3.6.3 The material for product packaging shall meet the parameters evolved under the scheme of labelling environment friendly packaging/ packaging materials.

3.6.4 The product package shall be suitably marked that ECO Mark label is applicable only to the contents, if the product package is not separately covered under ECO Mark Scheme.

4 PACKING AND MARKING

4.1 Packing

Kajal shall be packed in a suitable well closed containers like metallic, plastic pot, barrel or any other suitable container.

4.2 Marking

Each container shall be legibly marked with the following information:

a) Name of material;

b) Manufacturer's name and/or his recognised trade-mark, if any;

c) Batch or lot number in code or otherwise;

d) Shade name or shade number, if any;

e) Month and year of manufacturing/packing;

f) List of key ingredients[1)];

g) 'Best use before .....' (month and year to be declared by manufacturer)[2)];

h) Net content;

j) Instructions for use; and

k) Any other information required by statutory authorities.

4.3 BIS Certification Marking

4.3.1 Each package may also be marked with the Standard 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

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[1)] This is exempted in case of pack sizes of 30 g/60 ml or less.

[2)] This is exempted in case of pack size of 10 g or less and if the shelf life of the product is more than 24 months.

Table 1 Requirements for *Kajal*

(*Clause* 3.5)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex	IS No
(1)	(2)	(3)	(4)	(5)
i)	Melting point, °C, *Min*	50	A	–
ii)	Peroxide value, m.eq./1 000 g, *Max*	10	B	–
iii)	Freedom from grits	To pass the test	C	–
iv)	Arsenic as As_2O_3 ppm, *Max*	2	D	–
v)	Heavy metals (as Pb) ppm, *Max*	20	E	–
vi)	Microbiological examination:		–	14648
	a) Total viable count, CFU/g, *Max*	100	–	14648
	b) Gram negative Pathogens, CFU/g	Less than 10	–	14648

manufacturers or producers may be obtained from the Bureau of Indian Standards.

5 SAMPLING

5.1 Representative samples of the material shall be drawn and criteria for conformity of the material in a lot to the requirements of the specification shall be determined according to the procedure given in IS 3958.

5.1.1 Melting range, freedom from grits and peroxide number test shall be tested on each of the individual samples and tests for remaining requirements shall be carried out on the composite sample.

5.2 Criteria for Conformity

5.2.1 *For Individual Sample*

The mean x and range R for the test results shall be calculated (range being the difference between the maximum and the minimum test results). The lot shall be declared to have satisfied the requirement for test mentioned in **5.1.1** if the value of expression $(x - 0.6\ R)$ for each characteristic is equal to or greater than 99.

5.2.2 *For Composite Sample*

The test results on the composite sample shall meet the corresponding requirements specified in Table 1.

A lot shall be declared as conforming to this specification if it satisfies the requirements for each of the characteristic listed in Table 1. If the requirements for any of the characteristics are not met, the lot shall be declared to have not satisfied the requirements of the specification.

6 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

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

DETERMINATION OF MELTING POINT

A-1 APPARATUS

A-1.1 Melting Point Tubes — Thin-walled, uniform bore, capillary glass-tubes open at both ends and with the following dimensions:

a) Length — 50 to 60 mm

b) Inside diameter — 0.8 to 1.1 mm, and

c) Outside diameter — 1.2 to 1.5 mm.

A-1.2 Thermometer — Calibrated thermometer with 0.2° subdivision and a suitable range.

A-1.3 Heat Source — Gas burner or electric hot-plate with rheostat control.

A-2 PROCEDURE

Melt the sample and insert a clean melting point tube into the molten product so that a column of the material about 10 mm long is forced into the tube. Cautiously fuse one end of the tube (where the sample is located) in a small flame, taking care not to burn the sample. Place the tube in a beaker and while the sample is still in the liquid state, transfer to a refrigerator and hold at 4 to 10°C overnight (for about 16 hours). Remove the tube from the refrigerator and attach with a rubber band or by any other suitable means to the thermometer so that the lower end of the melting point tube is even with the bottom of the bulb of the thermometer. Suspend the thermometer in a large test tube containing water and immerse it in 600-ml beaker which is about half full of water. The bottom of the thermometer is immersed in the water about 30 mm below the surface. Adjust the starting bath temperature from 8 to 10°C below the melting point of the sample at the beginning of the test. Agitate the water in the large test tube as well as in the beaker with a small stream of air or by other means, and apply heat so as to increase the bath temperature at the rate of about 0.5°C per minute. Heating is continued until the liquid in the tube is completely clear throughout. Observe the temperature at which the liquid becomes clear. Report the average of two such separate determinations as the melting point, provided that the readings do not differ by more than 0.5°C.

ANNEX B

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

DETERMINATION OF PEROXIDE VALUE

B-1 REAGENTS

B-1.1 Acetic Acid — *See* IS 695.

B-1.2 Chloroform — *See* IS 5296.

B-1.3 Potassium Iodide Solution — Saturated.

B-1.4 Sodium Thiosulphate Solution — Approximately 0.01 N.

B-1.5 Starch Solution — Freshly prepared.

B-1.6 Petroleum Ether — 60-80°C.

B-2 PROCEDURE

Weigh 5.000 g of *kajal* sample in a 250-ml beaker and dissolve in 50 ml of petroleum ether with the aid of heat. Filter through Whatman filter paper No. 1 by decantation. Repeat this process at least 3 times. Give sufficient washing to the beaker and the filter paper with hot petroleum ether. Combine the filtrate in a glass stoppered conical flask and evaporate petroleum ether on a water bath. To the residue, add 30 ml acetic acid – chloroform mixture (3:2), heat if necessary to dissolve. Add 0.5 ml of freshly made saturated potassium iodide solution. Stopper the flask and allow to stand for one minute with occasional shaking. Add 30 ml of distilled water and then titrate with 0.01 N sodium thiosulphate solution using starch as an indicator.

B-3 CALCULATION

Peroxide value = Milliequivalents peroxide per 1 000 g sample = $\frac{V \times N \times 1\,000}{\text{Mass of sample in g}}$

where

V = Volume of 0.01 N sodium thiosulphate, and

N = Normality of sodium thiosulphate.

ANNEX C

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

DETERMINATION OF FREEDOM FROM GRITS

C-1 PROCEDURE

Collect approximately 0.5 g of *kajal* paste and spread the paste on butter paper on a high molecular mass high density polyethylene sheet.

Test the paste by pressing it along the length by a finger for presence of any hard and sharp edged abrasive particles, which will be distinguished readily. The material shall be free from hard and sharp edged particles.

ANNEX D

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

TEST FOR ARSENIC

D-1 REAGENTS

D-1.1 Concentrated Sulphuric Acid — *See* IS 266.

D-1.2 Concentrated Nitric Acid — *See* IS 264.

D-2 PROCEDURE

D-2.1 Preparation of Sample

Weigh 2.000 g of the sample in a Kjeldahl flask of 500-ml capacity. Add 15 ml of concentrated sulphuric acid followed by 4 ml of concentrated nitric acid. Heat cautiously. Add drop by drop more nitric acid, if required, from a pipette to speed up the oxidation of the sample. The total amount of nitric acid shall be noted for use in the control test. When oxidation is complete, the solution is a clear and faint yellow. At that stage, add 20 ml of water and again boil to fuming. Ensure removal of all nitric acid.

D-2.2 Carry out the test for arsenic with the solution prepared in **D-2.1** as given in IS 2088. Compare the stain obtained with that produced with 0.004 g of arsenic trioxide.

ANNEX E

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

TEST FOR HEAVY METALS

E-1 OUTLINE OF THE METHOD

The colour produced with hydrogen sulphide solution is matched against that obtained with standard lead solution.

E-2 APPARATUS

E-2.1 Nessler Cylinders — 50-ml capacity.

E-3 REAGENTS

E-3.1 Dilute Hydrochloric Acid — Approximately 5 N.

E-3.2 Dilute Acetic Acid — Approximately 1 N.

E-3.3 Dilute Ammonium Hydroxide — Approximately 5 N.

E-3.4 Hydrogen Sulphide Solution — Saturated.

E-3.5 Standard Lead Solution

Dissolve 1.600 g of lead nitrate in water and make up the solution to 1 000 ml. Pipette out 10 ml of the solution and dilute again to 1 000 ml with water. One millilitre of this solution contains 0.01 mg of lead (as Pb).

E-4 PROCEDURE

E-4.1 Procedure

Weigh about 1.000 g of material in a crucible and heat on a hot plate and then in a muffle furnace to ignite it at 600°C to constant mass. Add 3 ml of dilute hydrochloric acid, warm (wait till no more

dissolution occurs) and make up the volume to 50 ml. Filter the solution. Transfer 25 ml of the filtrate into a Nessler's cylinder. In the second Nessler's cylinder, add 2 ml of dilute acetic acid, 1.0 ml of standard lead solution and make up the volume with water to 25 ml.

Add 10 ml of hydrogen sulphide solution to each Nessler cylinder and make up the volume with water to 50 ml. Mix and allow to stand for 10 minutes. Compare the colour produced in the two Nessler's cylinders. Blank determinations without samples are recommended to avoid errors arising out of reagents.

E-4.2 Result

The sample may be taken to have passed the test, if the colour developed in the sample solution is less than that of standard solution.

ANNEX F

(Foreword)

COMMITTEE COMPOSITION

Cosmetics Sectional Committee, PCD 19

Organization	*Representative(s)*
Directorate General of Health Services, New Delhi	SHRI ASHWINI KUMAR (***Chairman***)
All India Small Scale Cosmetic Manufacturer's Association, Mumbai	SHRI M. B. DESAI SHRI B. M. CHOPRA (*Alternate* I) SHRI S. CHATTERJEE (*Alternate* II)
Bengal Chemicals & Pharmaceuticals Ltd, Kolkata	DR SAJAL K. ROY CHOWDHURY DR A. K. MANDAL (*Alternate*)
Central Drugs Laboratory, Kolkata	DR M.K. MAZUMDER DR A. C. DAS GUPTA (*Alternate*)
Central India Pharmacopoeia Laboratory, Ghaziabad	DR SANTOSH K. TALWAR DR SUKOMAL DAS (*Alternate*)
Colgate-Palmolive (India) Ltd, Mumbai	DR RAJ KOHLI SHRI SUNIL AGGARWAL (*Alternate* I) DR NEENA SHARMA (*Alternate* II)
Commissioner, Food & Drugs Administration, Mumbai	DR PILANKAR
Consumer Education and Research Centre, Ahmedabad	DR C. J. SHISHOO SHRI Y. S. YELLORE (*Alternate*)
Consumer Guidance Society, Mumbai	SHRI N. G. WAGLE DR S. G. BHAT (*Alternate*)
Dabur Research Foundation, Sahibabad	DR D. B. A. NARAYANA
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Hygienic Research Institute, Mumbai	SHRI M. B. DESAI SHRI MANISH K. CHHABRA (*Alternate*)
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Lady Irwin College, New Delhi	THE PRINCIPAL
Maharishi Ayurved Products, Noida (UP)	DR S. C. SAXENA SHRI V. K. SHRIVASTAVA (*Alternate*)
Nahira Cosmetic Enterprises Pvt Ltd, Mumbai	SHRI MADHUKAR Y. BORDAWEKAR SHRI G. J. LAD (*Alternate*)
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Shriram Institute for Industrial Research, New Delhi	SHRI S. K. CHIB DR U. C. BAHRI (*Alternate*)
BIS Directorate General	SHRI ANJAN KAR, Director & Head (PCD) [Representing Director General (*Ex-officio*)]

Member Secretary
DR (SHRIMATI) VIJAY MALIK
Director(PCD), BIS

(*Continued on page* 8)

(*Continued from page 7*)

Decorative Cosmetics Subcommittee, PCD 19 : 4

Organization	*Representative(s)*
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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. PCD 19 (1697).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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