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“Step Out From the Old to the New”

IS 13209 (1991): Indelible ink [CHD 14: Printing, Inks, Stationary and Allied Products]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
न मिटने वाली स्याही – विशिष्ट

Indian Standard

INDELIBLE INK — SPECIFICATION

UDC 667.45

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

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Stationery and Allied Products Sectional Committee had been approved by the Chemical Division Council.

Indelible ink is used for marking voter's fingers during elections — may be panchayat/municipal, district or state level. This standard has been formulated so as to have uniformity in quality of this product.

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 shall be the same as that of the specified value in this standard.

**AMENDMENT NO. 1 JUNE 2005
TO**

IS 13209 : 1991 INDELIBLE INK — SPECIFICATION

(*Second cover, Foreword, para 2, line 1*) — Substitute the following for the existing:

'The indelible ink is used for marking voter's finger during elections — may be panchayat/municipal, district, state or national level.'

(*Page 1, clause 1, lines 3 and 4*) — Substitute 'suitable application' for 'a suitable applicator'.

(*Page 1, clause 3.4*) — Substitute the following for the existing:

'3.4 pH

The pH of the ink shall not be less than 1.0 and more than 3.0 when tested with a suitable pH meter.'

[*Page 1, clause 4.2(b)*] — Substitute 'ml/litre' for 'ml'.

[*Page 1, clause 4.2(c)*] — Substitute 'Name of the manufacturer and his address' for 'Indication of the source of manufacture'.

(*Page 2, Annex B, clause B-2.3, last line*) — Substitute 'forefinger' for 'middle finger'.

(CHD 14)

Indian Standard

INDELIBLE INK – SPECIFICATION

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for indelible ink used for marking voter's fingers with a suitable applicator.

2 REFERENCES

The Indian Standards listed below are the necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
245 : 1970	Trichloroethylene, technical (<i>second revision</i>)
323 : 1959	Rectified spirit
1065 : 1971	Bleaching powder, stable
1070 : 1977	Water for general laboratory use (<i>second revision</i>)
1745 : 1978	Petroleum hydrocarbon solvents (<i>second revision</i>)
2888 : 1983	Toilet soaps (<i>second revision</i>)
4905 : 1968	Methods for random sampling

3 REQUIREMENTS

3.1 General

The ink shall be based on dyes, which shall not irritate the skin and be free from any harmful effects.

3.2 Description

The product (ink) shall be in the form of a solution. It shall transfer freely from the applicator and adhere perfectly to the skin after application. It should be clearly visible. It shall be free from sediments.

3.3 Colour

The ink shall be of any colour, as agreed to between the purchaser and the supplier. Normally it is tinted violet to make it visible, when applied.

3.4 Acidity

The pH of the solution shall not be less than 1.0 and more than 3.0 when tested with a suitable pH meter.

3.5 Total Solids

The material shall contain total solids of not less than 10 g per 100 ml, when tested by the method prescribed in Annex A.

3.6 Development

The marking made on the skin by the material, when exposed to air shall dry completely within 40 seconds and shall not smudge, pick up or smear

when rubbed after drying and shall retain the marking after washing with water and soap.

3.7 Performance

3.7.1 Resistance to Bleaching

When tested as prescribed in Annex B, the marking made by the material shall remain unaffected.

3.7.2 Resistance to Organic Solvents

When tested as prescribed in Annex C, the marking made by the material shall remain unaffected.

3.8 Keeping Quality

The material, when stored away from direct sunlight and in amber coloured bottles, shall continue to satisfy the requirements as given in 3.2, and 3.5 to 3.7, for a minimum period of one year from the date of manufacture.

4 PACKING AND MARKING

4.1 Packing

The material shall be packed in containers made of amber coloured glass or any other suitable material as agreed to between the purchaser and the supplier.

4.2 Marking

Each container shall be marked with the following information:

- a) Name of the material and its colour;
- b) Volume in ml;
- c) Indication of the source of manufacture;
- d) Lot number or batch number in code or otherwise; and
- e) Date of manufacture.

5 SAMPLING

The method of drawing representative samples of the product and the criteria for conformity shall be as prescribed in Annex D.

6 TESTS

6.1 Tests shall be carried out by the methods prescribed in Annexes A to C.

6.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070 : 1977) shall be used in tests.

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

ANNEX A

(Clause 3.5)

DETERMINATION OF TOTAL SOLIDS**A-1 PROCEDURE**

Evaporate on a steam bath 10 ml of ink in a tared porcelain, silica or platinum basin. Dry in an air-oven maintained at $105 \pm 2^\circ\text{C}$. Cool the residue in a desiccator and weigh. Repeat the operation till constant mass is obtained.

A-2 CALCULATION

$$\text{Total solids, percent (} m/v \text{)} = 100 \frac{M}{V}$$

where

M = mass, in g, of the residue after drying,
and

V = volume, in ml, of the ink taken for the test.

ANNEX B

(Clause 3.7.1)

TESTS FOR RESISTANCE TO BLEACHING**B-1 REAGENTS**

B-1.1 Bleaching Powder Suspension — containing 2 g of available chlorine per litre, prepared when required. The use of the bleaching powder stable (see IS 1065 : 1989) is also recommended.

B-1.2 Dilute Hydrochloric Acid — approximate 1 percent.

B-1.3 Soap Solution — Dissolve 20 g of suitable dry toilet soap (see IS 2888 : 1983) in one litre of water.

B-2 PROCEDURE

B-2.1 Mark the lower part of the nail and the adjoining skin of the thumb and middlefinger with more or less identical marks with the ink under testing by means of an applicator, made of glass/

plastic and 2 to 3 mm thick. Allow the marked fingers to dry for a minute. At the end of the period, the marking should be clearly visible.

B-2.2 Prepare a cotton swab with the bleaching powder suspension. Remove the excess liquid from the swab by slight squeeze. Gently rub the marked area on the thumb with the wet swab 5 times. There shall not be any appreciable difference in the intensity of marked area on the thumb from that on the middle finger.

B-2.3 Swab the marked area of the thumb 5 times, successively with warm soap solution (50°C), dilute hydrochloric acid and finally with water. Rinse and wipe the hand dry. There shall be no difference in the intensity of marking on the thumb and middle finger.

ANNEX C

(Clause 3.7.2)

TEST FOR RESISTANCE TO ORGANIC SOLVENTS**C-1 REAGENTS**

C-1.1 Rectified Spirit — (See IS 323 : 1959).

C-1.2 Petroleum Hydrocarbon — 90/135 (see IS 1745 : 1978).

C-1.3 Trichloroethylene — (see IS 245 : 1970) containing 0.5 percent water.

C-2 PROCEDURE

Prepare cotton swabs with rectified spirit petroleum hydrocarbon and trichloroethylene. Gently rub the marked portion of the thumb with each swab successively. There shall not be any difference of intensity of the marking of the thumb and the forefinger in each case.

ANNEX D

(Clause 5)

SAMPLING OF INDELIBLE INK**D-1 LOT**

All containers of the same size and capacity and containing ink of the same colour and composition shall be grouped together to form a lot.

Each lot shall be tested separately for the various requirements of the specifications.

D-2 SCALE OF SAMPLING

The number of containers to be selected for the sample shall be as given in Table 1.

Table 1 Scale of Sampling

(Clause D-2)

No. of Containers in the Lot	No. of Containers to be Selected
Up to 25	3
26 to 50	4
51 to 100	5
101 to 300	7
301 to 500	9
501 and above	12

These containers shall be selected at random from the lot as per IS 4905 : 1968.

D-3 PREPARATION OF TEST SAMPLES

From each of these selected containers a representative portion of material shall be taken, which shall be sufficient for carrying out tests for all characteristics given in the specification.

D-3.1 Composite Sample

Out of these portions, a small but equal quantity of material shall be taken and mixed thoroughly to make a composite sample.

D-3.2 Individual Sample

The remaining portion of the material from each selected container shall constitute an individual test sample.

D-4 NUMBER OF TESTS

Tests for description, resistance to bleaching and resistance to organic solvents shall be performed on individual samples. The test for all other characteristics shall be conducted on composite sample.

D-5 CRITERIA FOR CONFORMITY

The lot shall be deemed to conform to the specifications if all test results according to **D-4** satisfy the corresponding requirements.

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