भारतीय मानक

Indian Standard

IS 10513 : 2024

साबुन नूडल्स — विशिष्टि

(पहला पुनरीक्षण)

Soap Noodles — Specification

(First Revision)

ICS 71.100.40

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

April 2024 **Price Group 5**

Soaps, Detergents and Surface Active Agents Sectional Committee, CHD 25

FOREWORD

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

The saponification of the oil is a relatively simple step and is frequently combined with the subsequent steps of finishing to create a marketable product when soap is created from traditional basic materials. After incorporating additives like colour, optical brighteners, scents, etc, the finishing stage transforms the saponified mass, which is the sodium salt of fatty acids, into a form that is ready for consumer usage.

Due to the shortage of traditional soap making oils and the concomitant necessity for glycerine recovery, the process of soap making has become labour and resource-intensive. As a result, there is a tendency to carry out the expensive glycerine recovery process at one plant and sell the intermediate saponified mass to another facility for further processing into consumer-acceptable soap.

Soap Noodles contains sodium salts of fatty acids, primarily C8-C18 unsaturated and saturated acids, along with additional preservatives and essential electrolytes, either constructed or unbuilt, and in a form unfit for direct domestic usage, like soap noodles.

This standard was first published in 1983. This revision includes the following modifications:

a) Change in the title of the standard from “Sodium oleostearate noodles” to “Soap noodles” since with the latest technology development and trends, soap noodles are made from different blends of oils and benefit ingredients;
b) The references clause has been added;
c) Three types of soap noodles namely pure soap noodles, soap noodles for laundry use and other soap noodles have been defined in the standard based on their use;
d) Requirement for the ingredients when used in cosmetic products has been incorporated;
e) Requirements for Type 3 have been modified; and
f) The requirement of nickel has been removed.

The first type refers to “pure soap noodles”, which comprise of pure soap and can be used for personal care and laundry use. The second type is specific for laundry use. The third type is “other soap noodles” which covers different combinations of soap and other beneficial ingredients as agreed to between the manufacturer and supplier. This specification is for the “soap noodles”, which is a raw material in principle or intermediate, while the finished product made using such noodles, may need to be guided further by the requirements of the relevant BIS standard as and if applicable.

This standard contains **5.2**, **5.4** and **6.1** which call for agreement between the purchaser and the supplier.

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

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 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. 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

SOAP NOODLES — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers requirement for "soap noodles" used as an intermediate product for subsequent conversion into a marketable soap.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provision 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 edition of these standards:

IS No.	*Title*
IS 265 : 2021	Hydrochloric acid — Specification (*fifth revision*)
IS 286 : 2018	Methods of sampling and test for soaps (*third revision*)
IS 1070 : 2023	Reagent grade water — Specification (*fourth revision*)
IS 4707 (Part 1) : 2020	Classification for cosmetic raw materials and adjuncts: Part 1 Colourants (*fourth revision*)
IS 7597 : 2001	Surface active agents — Glossary of terms (*first revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 286 and IS 7597 shall apply.

4 TYPES

Soap Noodles, is an unfinished soap, shall be classified into the following 3 types:

a) *Type* 1 — Pure soap noodles;

b) *Type* 2 — Soap noodles for laundry use; and

c) *Type* 3 — Other soaps.

NOTE — These soap noodles may be used for personal care products, as well as laundry products as relevant and applicable.

5 REQUIREMENTS

5.1 Ingredients

5.1.1 All the ingredients used shall be non-injurious to health and the optical brightening agents, if used, shall be biologically safe.

5.1.2 The ingredients, when used in cosmetic products, shall comply with the requirements as per IS 4707 (Part 1) and (Part 2), as per *Drugs and Cosmetics Act* 1940 *& Rules* 1945, as per *Cosmetic Rules*, 2020.

5.2 The material shall be of acceptable colour, as agreed to between the purchaser and the supplier and in the form of chips or powder or flakes or noodles.

5.3 Odour and Lathering Properties

The material shall have no objectionable odour including fishy or any other disagreeable odour and shall possess good lathering and cleaning properties.

5.4 The material shall also comply with the requirements given in Table 1 when tested as prescribed in col (6) of the Table 1.

6 PACKING AND MARKING

6.1 Packing

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

6.2 MARKING

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

a) Name of the manufacturer;

b) Name of material, type and its recognized trade-mark, if any;

c) Batch number or lot number in code or otherwise; and

d) Month and year of manufacture.

6.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed there under, and the products may be marked with the Standard Mark.

Table 1 Requirements for Soap Noodles

(*Clauses* 5.4, 8.1 *and* 8.3)

Sl No.	Characteristic	Requirement For			Method of Test, Ref to Clause
		Type 1	Type 2	Type 3	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Total fatty matter, percent by mass, *Min*	76.0	62.0	35.0	**16** of IS 286
ii)	Free caustic alkali as sodium hydroxide (NaOH), percent by mass, *Max*	0.05	0.1	0.1	**7** of IS 286
iii)	Matter insoluble in alcohol, percent by mass, *Max*	2.5	2.5	*	**6** of IS 286
iv)	Titre of total fatty acids, °C, *Min*	37	33	*	**17** of IS 286
v)	Chlorides (as sodium chloride), percent by mass, *Max*	1.5	2	*	**11** of IS 286
vi)	Free carbonated alkali, percent by mass, *Max*	1.0	1.0	*	**29** of IS 286
vii)	Iron (as Fe) content, ppm, *Max*	30	—	30	Annex A
viii)	Copper (as Cu) content, ppm, *Max*	3	—	3	Annex B

7 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

For this purpose, general precautions, scale of sampling, preparation of test samples and criteria for conformity shall be as prescribed in IS 286.

8 TESTS

8.1 Tests for the determination of characteristics given at Sl No. (i) and (ii) in Table 1 shall be conducted on each of the individual samples separately.

8.2 Tests for determination of the remaining characteristics shall be conducted on composite sample.

8.3 Tests to evaluate the characteristics specified in Table 1 shall be conducted as prescribed in IS 286, Annex A and Annex B. References to the relevant clauses of IS 286 and Annex A and Annex B, are given in co1 (6) of Table 1.

8.4 Quality of Reagents

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

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

*Value range to be as agreed between supplier (manufacturer) and buyer (purchaser).

ANNEX A

(*Table* 1 *and* 8.3)

DETERMINATION OF IRON

A-1 OUTLINE OF THE METHOD

The method is based on the isolation of metal from the soap by dissolving in hot water. The aqueous extract is treated with citric acid to sequester aluminium and then thioglycolic acid in ammoniacal solution is added and colour measured spectrophotometrically.

A-2 APPARATUS

A-2.1 Spectrophotometer

A-3 REAGENTS

A-3.1 Liquor Ammonia — relative density 0.9

A-3.2 Dilute Sulphuric Acid — 50 percent (*v*/*v*)

A-3.3 Citric Acid (Aqueous Solution) — 50 percent (*v*/*v*)

A-3.4 Thioglycolic Acid (Aqueous Solution)

A-3.5 Standard Iron Solution

Containing 10 µg of iron per ml prepared from ferric ammonium sulphate [Fe_2 $(SO_4)_3$. $(NH_4)_2$ SO_4, $12H_2O$] in acid solution.

A-3.6 Methyl Red Indicator — 0.l percent aqueous solution

A-4 PROCEDURE

A-4.1 Isolation of Metals from Soap Noodles

Weigh 50 g of the sample in a beaker and dissolve it with hot water. To this soap solution add 40 ml of concentrated hydrochloric acid with constant stirring and keep the beaker on steam bath until fatty acid layer separates. Add 20 g of paraffin wax to this solution while hot. Stir the solution at intervals and allow it to settle until phases are clear. Cool the mass to room temperature. Remove the wax cake with rod, rinse with water and add the rinsings to the aqueous phase. Evaporate the aqueous phase to about 60 ml by gentle boiling. Add 100 ml of water and filter through paper washed previously with hydrochloric acid. Evaporate the filtrate and washings to about 60 ml. Cool and transfer the solution to a volumetric flask and make up the volume to 100 ml. Take aliquot portion of the solution for metal estimation.

A-4.2 Determination of Iron

Take 5 ml aliquot of the aqueous solution from the test solution in a 25 ml volumetric flask. To this add 4 ml citric acid solution and 0.02 ml methyl red indicator and liquor ammonia till the colour of the solution turns yellow. Then add 3 ml liquor ammonia in excess. Cool the solution and add 3 ml thioglycolic acid. Make up the volume to 25 ml and mix the solution thoroughly. Filter the solution through acid washed and dried filter paper. Measure absorbance of the clear solution at 540 nm in the spectrophotometer using water as reference. Prepare a calibration curve with standard iron solution and determine the iron content of the soap sample from it.

ANNEX B

(*Table* 1 *and* 8.3)

DETERMINATION OF COPPER

B-1 OUTLINE OF THE METHOD

The method is based on the isolation of metal from the soap and to make a copper complex using zinc dibenzyl dithiocarbamate in carbon tetrachloride solution and measure the colour of the solution spectrophotometrically.

B-2 APPARATUS

B-2.1 Spectrophotometer

B-3 REAGENT

B-3.1 Zinc Dibenzyl Dithiocarbamate Solution — 0.05 percent in carbon tetrachloride

B-3.2 Standard Copper Solution

Containing 1 µg of copper per ml (prepared from a stock solution of 100 times the concentration).

B-4 PROCEDURE

B-4.1 Isolation of Metal from Soap Noodles

Weigh 50 g of the sample in a beaker and dissolve it with hot water. To this soap solution add 40 ml of concentrated hydrochloric acid with constant stirring and keep the beaker on steam bath until fatty acid layer separates. Add 20 g of paraffin wax to this solution while hot. Stir the solution at intervals and allow it to settle until phases are clear. Cool the mass to room temperature. Remove the wax cake with rod, rinse with water and add the rinsings to the aqueous phase. Evaporate the aqueous phase to about 60 ml by gentle boiling. Add 100 ml of water and filter through paper washed previously with hydrochloric acid. Evaporate the filtrate and washings to about 60 ml. Cool and transfer the solution to a volumetric flask and make up the volume to 100 ml. Take aliquot portion of the solution for metal estimation.

B-4.2 Determination of Copper

Take 20 ml aliquot of the aqueous solution and to it add 10 ml of zinc dibenzyl dithiocarbamate solution followed by 25 ml of sulphuric acid in a separating funnel. Shake the solution for one minute and allow it to settle. Run the lower carbon tetrachloride layer into 25 ml volumetric flask. Wash the aqueous layer with carbon tetrachloride and transfer through glass wool to volumetric flask. Make up the volume and mix well. Measure absorption of the clear solution at 435 nm in the spectrophotometer. Prepare a calibration curve with standard copper solution and determine the copper content of the soap sample from the curve.

NOTE — The standard solution shall also be extracted with carbon tetrachloride before estimation of colour.

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Soaps, Detergents, and Surface Active Agents Sectional Committee, CHD 25

Organization	*Representative(s)*
Harcourt Butler Technical University, Kanpur	DR P. K. S. YADAV **(*Chairperson*)**
Central Drugs Standard Control Organization, New Delhi	SHRIMATI L. SUGANTHI SHRIMATI D. HEMALATHA (*Alternate*)
Central Pollution Control Board, New Delhi	SHRI DINABANDHU GOUDA SHRI VISHAL GANDHI (*Alternate*)
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Consumer Voice, New Delhi	SHRI M. A. U. KHAN DR RAJIV JHA (*Alternate*)
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Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon	DR PAWAN DEVIDAS MESHRAM

Organization	*Representative(s)*
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National Test House, Kolkata	DR AMARNATH CHAKRABORTY SHRI VINOD KUMAR AMIRUNAND RAM (*Alternate*)
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In Personal Capacity (*3A/148, Azad Nagar, Kanpur - 208002*)	DR R. K. TRIVEDI
BIS Directorate General	SHRI AJAY KUMAR LAL, SCIENTIST 'F'/SENIOR DIRECTOR AND HEAD (CHEMICAL) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI VIRENDRA SINGH
SCIENTIST 'D'/JOINT DIRECTOR
(CHEMICAL), BIS

Bureau of Indian Standards

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central	: 601/A, Konnectus Tower -1, 6th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	2323 7617
Eastern	: 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	2367 0012 2320 9474
Northern	: Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	265 9930
Southern	: C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	2254 1442 2254 1216
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