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SPECIFICATION FOR *KUSUM* OIL

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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SPECIFICATION FOR *KUSUM* OIL

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Indian Standard

SPECIFICATION FOR *KUSUM* OIL

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 24 November 1966, after the draft finalized by the Oils and Oilseeds Sectional Committee had been approved by the Chemical Division Council and the Agricultural and Food Products Division Council.

0.2 *KUSUM* oil is obtained from the seeds of the tree, *Schleichera oleosa* (Lour.) Merr. syn. *S. trijuga* Willd., Fam. Sapindaceæ which is largely cultivated in the eastern parts of India to serve as the host tree for lac insects. *KUSUM* tree is also known in Indian languages as *KUSUMB, KOSAM PAKRA, POOMARAM, POOVAM* and *POSUKU.*

0.3 *KUSUM* oil is reputed to be the original macassar oil known for promoting the growth of hair. The oil has also medicinal properties. *KUSUM* oil can be used for soap making. The oil contains certain cyanogenetic glucosides and amides, which cause evolution of hydrogen cyanide and ammonia during soap making. Further, it gives a low yield of only about 4 percent of glycerine.

0.4 *KUSUM* oil, so far has limited availability for industrial purposes. Its use may provide a cheap source for soap making and thus relieve pressure on some of the other vegetable oils. It will also provide extra income to lac growers.

0.5 In the preparation of this standard assistance has been derived from the following publications:

DATTA (R L) and GHOSE (P K). Investigation of the oil of Kusum (*Schleichera trijuga*) and its application in soap making. *Department of Industries Bull.* 50. Calcutta. 1931.

Kusum tree, seed and oil. 1959. Shellac Export Promotion Council, Calcutta.

0.6 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*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for *KUSUM* oil.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given under **2** of IS : 548-1964* shall apply.

3. REQUIREMENTS

3.1 The material shall be obtained from clean and sound seeds of *Schleichera oleosa* (Lour.) Merr. syn. *S. trijuga* Willd., fam. Sapindaceæ.

3.1.1 The clarity of the material shall be judged by the absence of turbidity after keeping the filtered sample at 50°C for 24 hours.

3.2 Admixture with Other Oils — The material shall be free from admixture with other oils when tested according to the methods prescribed under **20** of IS : 548-1964*.

3.3 Colour of Soap — The colour of soap as determined by the method given in Appendix A shall be not deeper than light cream yellow.

3.4 The material shall also comply with the requirements given in Table 1.

4. PACKING

4.1 The material shall be supplied in suitable well-closed containers as agreed to between the purchaser and the supplier.

5. MARKING

5.1 The containers shall be marked with the name and weight of the material in the container; manufacturer's name and trade-mark, if any; batch number; and the year of manufacture.

6. SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed under **3** of IS : 548-1964*.

*Methods of sampling and test for oils and fats (*revised*).

TABLE 1 REQUIREMENTS FOR *KUSUM* OIL

(*Clauses* 3.4 *and* 7.1)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST (REF TO CL NO. IN IS : 548-1964*)
(1)	(2)	(3)	(4)
i)	Moisture and insoluble impurities, percent by weight, *Max*	0·25	5 and 6
ii)	Colour, in a ¼-in cell expressed as $Y+5\ R$, not deeper than	25	13
iii)	Refractive index at 50°C	1·456 0 to 1·460 0	10
iv)	Specific gravity at 95°C/30°C	0·865 to 0·869	11
v)	Saponification value	220 to 240	15
vi)	Iodine value (Wijs)	48 to 60	14
vii)	Acid value, *Max*	10	7
viii)	Unsaponifiable matter, percent by weight, *Max*	3·0	8
ix)	Titre °C, *Min*	45	12
x)	Reichert-Meissl value	15 to 20	18
xi)	Polenske value, *Max*	1·5	19

*Methods of sampling and test for oils and fats (*revised*).

7. TESTS

7.1 Tests shall be carried out as prescribed in IS: 548-1964*. References to the relevant clauses to that standard are given in col 4 of Table 1.

7.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS: 1070-1960†) shall be used in tests.

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

*Methods of sampling and test for oils and fats (*revised*).
†Specification for water, distilled quality (*revised*).

APPENDIX A

(*Clause* 3.3)

DETERMINATION OF COLOUR OF SOAP

A-0. GENERAL

A-0.1 Principle of the Method — The oil is saponified with alcoholic sodium hydroxide, the alcohol is removed, and the colour of the residual soap is assessed by visual examination.

A-1. APPARATUS

A-1.1 Enamelled Beaker — one, 100-ml capacity.

A-1.2 Water-Bath

A-2. REAGENT

A-2.1 Alcoholic Sodium Hydroxide Solution — 25 percent solution (*w*/*v*). This solution shall be completely colourless.

A-3. PROCEDURE

A-3.1 Take 20 ml of alcoholic sodium hydroxide solution in an enamel beaker and immerse the beaker in the water-bath. When the alcohol begins to boil, add 15 ml of the hot oil in thin stream, constantly stirring the mixture with a glass rod. Take care to ensure that saponification is complete. Evaporate off the alcohol as quickly as possible while still stirring, and assess the colour of the residual soap by visual examination.

NOTE — A gentle stream of clean dry air facilitates the quick evaporation of alcohol. The dry soap shall not be overheated or else the colour will deteriorate.

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