

BUREAU OF INDIAN STANDARDS

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*Draft Indian Standard***DE-ODOURIZING-CUM-DISINFECTANT FLUIDS- SPECIFICATION**

(First Revision of IS 10758)

(ICS 71.100.40)

**Soaps and other Surface Active Agents
Sectional Committee, CHD 25****Last Date for Comments: 16 Sept 2022****FOREWORD**

(Formal clauses shall be added later)

Disinfectant fluids based on pine oil, etc., are extensively used for disinfectant-cum-de-odourizing purposes.

This standard was originally published in 1983. This revision has been taken up in order to align it with the latest practices. The grades are redesignated with only RW co-efficient to align with the grades given in the schedule 'O' of Drugs and Cosmetic Rules, 1945 and IS 1061. In this revision, additional requirements of stability on storage and absence of mercury compounds have also been added. Amendment no. 1 issued to the previous version of the standard has also been incorporated in this revision.

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.

Draft Indian Standard
DE-ODOURIZING-CUM-DISINFECTANT FLUIDS- SPECIFICATION
(First Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and tests for de-odourizing-cum-disinfectant fluids.

Note: The non-phenolic type of disinfectant fluids are not covered by this standard.

2 REFERENCES

The Indian standards listed below 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 Indian standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

| <i>IS No.</i> | <i>Title</i> |
|--|---|
| 1061 : 2017 | Disinfectant Fluids, Phenolic Type —Specification (<i>Fifth Revision</i>) |
| 1070 : 1992 | Reagent grade water - Specification (<i>Third Revision</i>) |
| 1448 : Part 20 : 2019/ ISO 13736:2013 | Methods of test for petroleum and its products [P : 20] Determination of flash point - Abel closed - Cup method (<i>Third Revision</i>) |

3 GRADES

The de-odourizing-cum-disinfectant fluids covered by this standard shall be of the following grades conforming to germicidal values shown against each:

| <i>Grade</i> | <i>Rideal Walker (RW) Coefficient, Min</i> | <i>Staphylococcal Coefficient (SA), Min</i> |
|--------------|--|---|
| 1 | 18 | - |
| 2 | 10 | - |
| 3 | 5 | - |
| 1A | 18 | 8 |
| 2A | 10 | 5 |
| 3A | 5 | 2.5 |

4 REQUIREMENTS

4.1 Description - The material shall be a clear homogeneous and transparent solution of coal-tar acids or similar acids derived from petroleum, with or without hydrocarbon, or other phenolic compounds, including substituted phenolic compounds, or a mixture of these and a suitable emulsifier. It shall also contain pure strained absolute essential oil like pine, lemon grass, or any other essential oil having pleasing odour.

NOTE - Quaternary ammonium compounds are not compatible with the above composition because of their cationic character and hence should not be incorporated in such formulations.

4.2 Volatile Matter - It shall contain 70 ± 5 percent (*m/m*) of volatile matter when tested by the method prescribed in Annex A.

The material shall contain 40 to 50 percent (*v/v*) steam volatile oil when determined by the steam distillation.

4.3 Stability After Dilution - When 1 ml of the material is diluted to 400 ml with either tap water or with artificial hard water (*see* IS 1061), the resulting emulsion shall show no separation for 6 hours between 15°C and 45°C when determined by the method prescribed in IS 1061.

4.4 Persistence of Odour - The odour used shall persist for a minimum of 24 hours when:

- a) a strip of filter paper soaked in liquid is hung at room temperature; and
- b) a mixture of 1 ml of liquid and 1 ml of water is kept in a small petri dish at room temperature.

4.5 Flash Point (Abel) - When determined by the method prescribed in IS 1448 (Part 20), the flash point of the material shall not be less than 32.2°C.

4.6 Germicidal Value – Germicidal values of disinfectant fluids shall be ascertained by determining the Rideal Walker and Staphylococcal Coefficients (as relevant) by methods prescribed in IS 1061. The values shall be expressed in terms of the phenol coefficient (Rideal Walker as well as Staphylococcal (as relevant)) and the grade of the material shall be determined in accordance with 3.

NOTE - The phenol coefficient is also an indication of the dilution at which the disinfectant may be employed. The varying conditions under which the different groups of disinfectant fluids are employed are too complex to enable a standard set of dilutions for use to be specified. A basic dilution of 20 times the Rideal Walker coefficient is deemed satisfactory for ordinary disinfection purposes, the dilution being (a) increased where the time of contact may be prolonged or the degree of infection is likely to be low, or (b) decreased when the period of contact is short or with highly infectious material or in the presence of the much organic material, soluble or particulate.

4.7 Mercury Compounds

When tested by the method prescribed in IS 1061, mercury compound shall not be present in the material.

4.8 Stability on Storage

The test mentioned under 4.3 and 4.6 shall be repeated just before the expiry period declared by the manufacturer (*see* 7.1). The results obtained during this test shall satisfy the requirements prescribed in 4.3 and 4.6 respectively.

5 TESTS

5.1 Tests shall be carried out by the method referred to in **4.2, 4.3, 4.5, 4.6, 4.7, and 4.8.**

5.2 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 test results.

6 PACKAGING

Disinfectant fluids of all classes shall be packed in suitable containers in such a way that Corrosion or reaction would not take place during storage. Galvanized iron sheet containers shall not be used.

7 MARKING

7.1 The containers shall bear legibly and indelibly the following information in addition to the information as is necessary under the *Drugs and Cosmetics Act* and Rules:

- a) Name of the material;
- b) Name and address of the manufacturer and trade-mark, if any;
- c) Grade of the material and the phenol coefficient (Rideal Walker or both Rideal Walker and staphylococcal);
- d) Month and year of manufacture and batch number;
- e) Expiry date;
- f) Volume of material in the container;
- g) Any specific instructions for use; and
- h) A declaration reading as product is free from mercury compounds.

7.2 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 thereunder, and the products may be marked with the Standard Mark.

8 SAMPLING

Representative samples of the material shall be drawn as prescribed in IS 1061.

ANNEX A
(*Clause 4.2*)

DETERMINATION OF VOLATILE MATTER

A-1 APPARATUS

Petri-Dish - 75 mm diameter.

A-2 PROCEDURE

Weigh accurately about 10 g of the material in a tared petri-dish (*see A-1*) and evaporate in an oven maintained at 105°C. Weigh and dry to constant weight at 105°C.

A-3 CALCULATION

$$\text{Volatile matter, percent by mass} = 100 - \frac{M_2 - M_1}{M} \times 100$$

where

M_2 = mass of petri-dish with residue,

M_1 = mass of empty petri-dish, and

M = mass of sample taken for the test.