

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

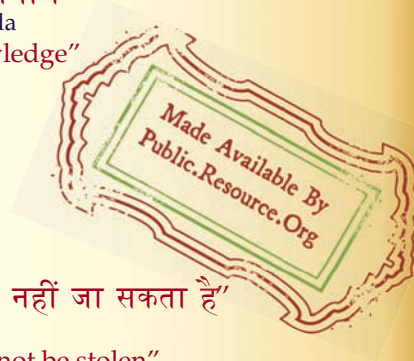
IS 14364 (1996): Quarternary ammonium compound based surface cleaner, liquid [CHD 25: Soaps and other Surface Active Agents]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



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

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS 14364 : 1996
(Reaffirmed 2008)

भारतीय मानक
पृष्ठीय मार्जक द्रव पर आधारित चतुष्क
अमोनियम मिश्रण — विशिष्टि

Indian Standard

**QUARternary AMMONIUM COMPOUND BASED
SURFACE CLEANER, LIQUID — SPECIFICATION**

ICS 71-100-40

© BIS 1996

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

June 1996

Price Group 3

FOREWORD

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

Hard surface, namely, floors, laminated table tops, kitchen table tops need frequent cleaning for the removal of soils and stains. The conventional liquid cleaners based on soaps and detergents clean and wash away the dirt while cleaning. These, often, do not contain any effective antibacterial agent.

A hard surface cleaner with a suitable quarternary ammonium compound not only cleans the surface superficially, but also effectively reduces the bio-burden and keeps the environment clean due to the effect of antibacterial agent, that is, quarternary ammonium compound. A product of this type helps to create hygienic environment through cleaning and reducing the effect of bio-burden substances. It also helps to reduce the mal-odour caused due to decomposition of organic matters present in hard surfaces, that is, kitchen, table tops, floors in kitchen and bathroom, etc.

A product of this type may be used either neat in a small area which deserves cleansing of ingrained dirt/heavily soiled area or diluted suitably with water for maintenance cleaning for a hygienic environment.

The quarternary ammonium compounds (QAC) may be cetylpyridinium chloride, cetalkonium chloride, benzalkonium chloride or any proven quarternary ammonium compound, suitable for the purpose.

The composition of the technical committee responsible for formulating this standard is given in Annex D.

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.

AMENDMENT NO. 3 SEPTEMBER 2008
TO
IS 14364 : 1996 QUATERNARY AMMONIUM
COMPOUND BASED SURFACE CLEANER,
LIQUID — SPECIFICATION

(First cover page, Hindi Title, read with Amendment No. 2) — Substitute the following for the existing:

‘क्वार्टर्नरी अमोनियम यौगिक आधारित
सतह मार्जक, द्रव — विशिष्टि’

(Page 1, clause 4.2, read with Amendment No. 2) — Substitute the following for the existing:

'4.2 Composition

The material shall consist essentially of quaternary ammonium compound and non-ionic surfactants in aqueous medium.'

(Page 1, clause 4.3, read with Amendment No. 2) — Substitute the following for the existing:

'4.3 Odour

The material shall be odourless or with a pleasant fragrance.'

(Page 1, clause 4.4) — Substitute the following for the existing:

'4.4 Colour

The material shall be colourless or with a suitable colour. The product, when applied neat, for cleaning and subsequent wiping out with wet mop should not leave any colouration or stain on the floor or any other surface to which it is applied. On dilution with water as recommended, the colour shall be faint to colourless.'

(Page 2, clause 6) — Insert the following at the end:

'6.1 BIS Certification Mark

Amend No. 3 to IS 14364 : 1996

The containers may also be marked with the Standard Mark.

6.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.'

(CHD 25)

AMENDMENT NO. 2 AUGUST 2005
TO
IS 14364 : 1996 QUATERNARY AMMONIUM
COMPOUND BASED SURFACE CLEANER, LIQUID —
SPECIFICATION

(*First cover page, Hindi Title*) — Substitute the following for the existing:

**‘कवार्टरनरी अमोनियम यौगिक आधारित
सतह मार्जक, द्रव — विशिष्टि’**

(*Page 1, clause 4.1*) — Substitute the following for the existing:

'4.1 Description

A quaternary ammonium compound surface cleaner liquid may or may not be coloured. It shall be odourless or with fragrance. It shall be miscible in water in all proportions.'

(*Page 1, clause 4.2*) — Substitute the following for the existing:

'4.2 Composition

The material shall be odourless or with a pleasant fragrance.'

(*Page 1, clause 4.3*) — Substitute the following for the existing:

'4.3 Odour

The material shall be colourless or with a suitable colour. The product, when applied neat, for cleaning and subsequent wiping out with wet mop should not leave any coloration or stain on the floor or any other surface to which it is applied. On dilution with water as recommended, the colour shall be faint to colourless.'

(CHD 25)

AMENDMENT NO. 1 MARCH 2002
TO
IS 14364 : 1996 QUARternARY AMMONIUM
COMPOUND BASED SURFACE CLEANER, LIQUID —
SPECIFICATION

(*Cover page, page 1 , title*) — Substitute 'QUARternARY ' for 'QUARternARY'.

(*Foreword, clauses 1.1, 4.1 and 4.2*) — Substitute 'quaternary ' for 'quarternary'.

(*Page 2, clause. A-1.1.1*) — Substitute the following for the existing:

'**A-1.1.1** Disperse calcium stearate (35 parts) in white spirit (6 1 parts) and mix thoroughly with carbon black (4 parts)'.

(CHD 25)

Reprography Unit, BIS, New Delhi, India

Indian Standard

QUARTERNARY AMMONIUM COMPOUND BASED
SURFACE CLEANER, LIQUID — SPECIFICATION

1 SCOPE

1.1 This standard prescribes the requirements and methods of sampling and tests for quaternary ammonium compound based surface cleaner, liquid.

2 REFERENCES

2.1 The Indian Standards listed below contain provisions which, through reference in this text, constitute provisions of this Indian Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties of agreements based on this Indian Standard are encouraged to investigate the possibility of applying the most recent editions of the standards which are given in the list:

IS No.	Title
IS 4905 : 1968	Methods for random sampling
IS 8171 : 1992	Glossary of terms relating to polishes and related materials (second revision)

3 TERMINOLOGY

3.1 For the purpose of this standard the definitions given in IS 8171 : 1992 shall apply.

4 REQUIREMENTS

4.1 Description

A quaternary ammonium compound surface cleaner liquid may or may not be coloured. It shall be odourless and with or without fragrance. It shall be miscible in water in all proportions and there shall not be more than a slight opalescence when diluted with water.

4.2 Composition

The material shall consist essentially of quaternary ammonium compound and non-ionic surfactants in aqueous medium.

4.3 Odour

The material shall be odourless or preferably with a pleasant fragrance.

4.4 Colour

The material shall be colourless or preferably with a suitable colour. The product, when applied neat, for cleaning and subsequent wiping out with wet mop should not leave any colouration or stain on the floor or any other surface to which it is applied. On dilution with water as recommended, the colour shall be faint to colourless.

4.5 Stability

The material shall be clear and free from sedimentation or cloudiness when stored at 10 ± 2°C and 45 ± 2°C for 48 h.

4.6 Cleaning Property

The material, when applied, either neat or diluted with water by means of a clean lint-free cloth or a cotton mop, the cleanability shall be as described in Annex A.

4.7 Applicability

The material when applied with a lint free cloth or mop, either neat or diluted, shall spread evenly without crawling. The material shall not show any streaks or spots and patches after the mopped surface dries naturally. The cleaned surface shall not show any film deposition or shed white powder on drying.

4.8 Keeping Quality

The material shall conform to the requirements of this standard as mentioned in 4.1, 4.3, 4.4, 4.5, 4.6, 4.7 and Table 1 (4.9). There shall be no deterioration in the characteristics when tested after two years from the date of manufacture, when stored in its original sealed container at ambient temperature.

Table 1 Requirements for QAC Cleaner Liquid

Sl No.	Characteristic	Requirement	Method of Test, Ref to Annex B
(1)	(2)	(3)	(4)
i)	Total non-volatile matter, percent by mass, Min	4.0	B-1
ii)	pH	5-7	B-2
iii)	QAC content, percent by mass (calculated as cetylpyridinium chloride), Min	0.50	B-3

IS 14364 : 1996

4.9 The cleaner shall also comply with the requirements specified in Table 1.

5 PACKING

The material shall be packed in glass bottles or suitable plastic containers, provided with a pilferproof cap made of either metal or plastic. The size of the container shall be 200 ml, 500 ml or 1 litre. The container may also be packed in suitable cardboard or fibreboard boxes or as agreed to between the purchaser and supplier.

6 MARKING

The containers should be marked with the following:

- a) Indication of the source of manufacture;

- b) Net content of the material;
- c) Name of the material;
- d) Month and year of manufacture, and Batch No. and Code No.;
- e) Direction for use; and
- f) Cautionary label 'D O NO T MI X WITH HOUSEHOL D SOA P AN D DETERGENTS'.

7 SAMPLING

The method of drawing representative samples of the QAC based surface cleaner liquid shall be as prescribed in Annex C.

ANNEX A
(Clause 4.6)

DETERMINATION OF CLEANING PROPERTY

A-1 REAGENT

A-1.1 Hard Surface Cleaner Soil

A-1.1.1 Disperse the calcium stearate (35 parts) in the white spirit (61 parts) and mix thoroughly with carbon black (4 parts).

A-1.1.2 Mix 0.3 g each of lanolin and grease.

A-1.1.3 Mix 3 g of the mix (see A-1.1.1) with the mix prepared in A-1.1.2.

A-2 TEST TILE

Take a mosaic tile of dimensions 15 cm × 6cm, suitably cleaned and free from any scratch marks. Apply a thin

coat of 'hard surface cleaner soil' on the surface of the mosaic tile uniformly. Leave the tile to dry at room temperature, overnight.

A-3 PROCEDURE

Divide test tile into two halves by suitable marking. Clean one part with the sample product either neat or suitably diluted with water with the help of a lint free cloth or a cotton mop. Similarly, clean the other half of the tile with water only. Compare the two panels visually and note down the results from a group of panels visually and note down the results from a group of panel members comprising not less than five. The cleaning ability of the product should be remarkably better than the water washed portion.

ANNEX B
(Table 1)
METHOD OF TESTS

B-1 TOTAL NON-VOLATILE MATTER

B-1.1 Procedure

Weigh accurately about 10 g of the sample in tared flat bottomed dish of approximately 10 cm dia, provided with a cover. Heat the sample without the cover on a steam bath till the bulk of the volatile matter is evaporated. Transfer the dish in a hot air oven kept at 105 ± 2°C; maintain at this temperature for 4 h, cool and weigh. Repeat heating and cooling till constant mass is obtained.

B-1.2 Calculation

Non-volatile matter, percent by mass = $\frac{100 \times B}{A}$

where

B = mass, in g, of the non-volatile residue; and

A = mass, in g, of the sample taken for the test.

B-2 DETERMINATION OF ρH

B-2.1 Procedure

Check the ρH of the product in a ρH meter with reference to the standard solution of ρH - 4 (0.05 m potassium hydrogen phthalate solution). Measure at 25°C.

B-3 DETERMINATION OF QAC CONTENT

B-3.1 Procedure

Take 2 ml of the sample in a 100-ml stoppered measuring cylinder and dilute to 10 ml. Add 20 ml of chloroform and 5 ml of acid methylene blue and titrate with 0.004 M sodium lauryl sulphate solution shaking vigorously and allowing the layers to separate after each addition, until the colour of methylene blue is equally dispersed in both the chloroform and the aqueous layers.

Note the volume of standard sodium lauryl sulphate solution used and calculate the percent (w/v) of the active cationic substance content of the product.

B-3.2 Calculation

Percent of the active cationic substance calculated as cetyl pyridinium chloride , anhydrous basis

where

V = volume of 0.004 M sodium lauryl sulphate solution used,

P = factor for 0.004 M sodium lauryl sulphate solution.

ANNEX C
(Clause 7)

SAMPLING OF QAC BASED SURFACE CLEANER, LIQUID

C-1 SAMPLING

C-1.1 Lot

All containers of the same size and capacity containing QAC surface cleaner liquid produced under similar conditions of manufacture shall constitute a lot. Each lot shall be tested separately for the various requirements of the standard.

C-1.2 Scale of Sampling

The number of containers to be selected for the sample shall be as given in Table 2.

Table 2 Scale of Sampling

No. of Containers in the Lot	No. of Containers to be Selected
(1)	(2)
Up to 50	13
501 to 1 000	20
1 001 and above	32

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

C-1.3 Preparation of Test Samples

Shake well each of the containers selected as per Table 2 . 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 standard.

C-1.3.1 Composite Sample

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

C-1.3.2 Individual Sample

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

C-1.4 Number of Tests

Test for odour, colour and stability shall be performed on individual sample. The test for all other characteristics shall be conducted on composite sample.

C-1.5 Criteria for Conformity

The lot shall be deemed to conform to the standard if all the test results according to C-1.4 satisfy the corresponding requirements.

ANNEX D
(Foreword)

COMMITTEE COMPOSITION

Lac, Lac Products and Polishes Sectional Committee, CHD 023

Chairman	Representing
SHRI D . DASGUPT A	Reckitt and Colman of India Ltd, Calcutt a
Members	
SHRI RAJ I V KHURAN A (Alternate t o Shri D. Dasgupt a)	Shriram Institut e of Industrial Research , Ne w Delhi
SHRI A . K . AGGARWA L	Central Leather Research Institute, Madra s
SHRI V . K . VERM A (Attentate)	Ministry of Defence (DGQA) , Ne w Delhi
SHRI K . G . ANAN D DE V	Naval Headquarters, New Delhi
DR HAR I BAB U (Alternate)	Railway Board, Ne w Delhi
SHRI S . K . ASTHAN A	Border Security Force, New Delhi
SHRI O . P . GUPT A (Alternate)	Billy Boo t Polish Co, Delhi
CDR J . S . NEG I	Waxpol Industries Ltd, Calcutt a
DEPUTY DIRECTO R (CLOTHIN G) (Alternate)	National Test House, Calcutt a
CHEMICAL AN D METALLURGICA L ENGINEER I	Development Commissioner (SSI), Ne w Delhi
ASSISTANT RESEARC H OFFICER , CHEMICA L I I (Alternate)	Directorate Genera l of Supplies & Disposals, Ne w Delhi
DEPUTY DIRECTO R (PRO V)	Amar Industries, New Delhi
ASSISTANT DIRECTO R (PRO V) (Alternate)	Ministry of Industry (Departmen t of Industria l Polic y & Promotion), New Delhi
SHRI SHYA M GAMBHI R	Bata India Ltd, Calcutt a
SHRI R . GANGUL Y	Premier Vinyl Floorin g Ltd , Ne w Delhi
SHRI R . P . GUPT A (Alternate)	KIWI TT K Ltd , Madra s
SHRI K . C . NASKA R	Consumer Guidanc e Societ y of India, Mumba i
SHRI Y . C . NUHAWA N (Alternate)	Indian Lac Research Institute , Ranchi
SHRI S . K . KAPOO R	Bharat Heavy Electricals Ltd, Bhopal
SHRI N . K . KAUSHA L	The Bihar State Co-operative Lac Marketing Federation Ltd, Ranchi
SHRI P . JAYAKUMARA N (Alternate)	Directorate of Marketing and Inspection, Faridaba d
DR RAJENDE R LA L	Directorate of Lac Development, Ranchi
DR ANIT A (Alternate)	Directorate of Cottage and Small Scale Industries , West Benga l
SHRI A . K . MANDA L	Government of India Stationery Office, Calcutt a
SHRI JASBI R SING H (Alternate)	R.V. Briggs & Co Pvt Ltd, Calcutt a
SHRI P . BHATTACHARJE E	Somar Sing Jayaswa l Pvt Ltd, Calcutt a
SHRI S . K . PA L (Alternate)	Sulekha Works Limited, Calcutt a
SHRI K . K . SINH A	
SHRI PRADEE P SING H (Alternate)	
SHRI S . SURES H	
SHRI N . G . WAGL E	
SHRI R . C . MISHR A (Alternate)	
DR S . C . AGGARWA L	
DR S . K . SAH A (Alternate)	
SHRI A . K . BAS U	
SHRI C . M . VERM A	
SHRI R . N . BANSA L	
SHRI G . R . BHATI A (Alternate)	
SHRI R . M . N . SAHA I	
SHRI A . RATN A RA O (Alternate)	
LAC DEVELOPMEN T OFFICE R	
SHRI S . B . BANDYOPADHYA Y	
SHRI S . N . SAH A (Alternate)	
SHRI A . BISWA S	
SHRI K . P . D E (Alternate)	
SHRI S . S . JAYASWA L	
SHRI RAA J B . JAYASWA L (Alternate)	
SHRI N . G . MAITR A	
DR A . S . BHADURI (Alternate)	

(Continued on page 5

(Continued from page 4)

Members

SHRI G . S . BINDR A
SHRI R . S . BAJORI A
DR R . N . BANERJE E (Alternate)
REPRESENTATIVE
SHRI ROSHA N LA L
SHRI T . K . GUH A
DR. R . K . SINGH ,
Director (Chem)

Representing

Jyoti Enterprises , Calcutt a
Shellac Export Promotio n Council , Ranch i
West Bengal l Lac Adisan Co-operative Society , Puruli a
Taneja Shellac Factory , Calcutt a
Okhla Chemical s Industries , Ne w Delhi
Director General, BI S (Ex-officio Member)

Member Secretary

SHRI S . MAZUMDE R
Joint Director (Che m), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

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.

This Indian Standard has been developed from Doc : No. CHD 023 (0490)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 11000 2
Telephones : 323 01 31, 323 94 02, 323 83 75

Telegrams: Manaksanstha
(Common to all offices)

Regional Offices :

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 11000 2

Telephone
{ 323 76 17
323 38 41

Eastern : 1/1 4 C. I. T. Scheme VII M, V. I. P. Road, Maniktola
CALCUTTA 70005 4

{ 337 84 99, 337 85 61
337 86 26, 337 86 62

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 16002 2

{ 60 38 43
60 20 25

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

{ 235 02 16, 235 04 42
235 15 19, 235 23 15

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
MUMBAI 40009 3

{ 832 92 95, 832 78 58
832 78 91, 832 78 92

Branches : AHMADABAD . BANGALORE . BHOPAL . BHUBANESHWAR .
COIMBATORE . FARIDABAD . GHAZIABAD . GUWAHATI . HYDERABAD .
JAIPUR . KANPUR . LUCKNOW . PATNA . THIRUVANANTHAPURAM .