



MALAYSIAN STANDARD

MS 1285:2014

Glass cleaner - Specification (Second revision)

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Contents

	Page
Committee representation	ii
Foreword.....	iii
1 Scope	1
2 Normative references.....	1
3 General requirements	1
4 Detail requirements.....	1
5 Sampling	2
6 Packaging	2
7 Labelling.....	2
8 Certification mark	3
9 Compliance	3
Annex A Determination of isopropyl alcohol content.....	4
Annex B Determination of nonvolatile content.....	5
Annex C Determination of pH	6
Annex D Determination of corrosion and discolouration of aluminium alloy panel.....	7
Annex E Sampling	8
Annex F Determination of nonvolatile matter by qualitative test	10

MS 1285:2014

Committee representation

The Industry Standards Committee on Chemicals and Materials (ISC B) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Agriculture Malaysia
Department of Chemistry, Malaysia
Department of Standards Malaysia
Malaysian Association of Standards Users
Malaysian Ceramic Industry Group
Malaysian Institute of Chemistry
Malaysian Paint Manufacturers Association
Malaysian Pulp and Paper Manufacturers Association
Minerals and Geoscience Department Malaysia
Ministry of International Trade and Industry
Science and Technology Research Institute for Defence
SIRIM Berhad (Secretariat)
Universiti Malaya
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Soap and Detergent which developed this Malaysian Standard consists of representatives from the following organisations:

Department of Chemistry, Malaysia
Malaysian Cosmetic and Toiletry Industry Group
Malaysian Palm Oil Board
Ministry of Health Malaysia (National Pharmaceutical Control Bureau)
SIRIM Berhad (Industrial Biotechnology Research Centre)
SIRIM Berhad (Secretariat)
Universiti Kebangsaan Malaysia (Faculty of Pharmacy)
Universiti Malaya
Universiti Teknologi MARA

Foreword

This Malaysian Standard was developed by the Technical Committee on Soap and Detergent under the authority of the Industry Standards Committee on Chemicals and Materials.

This Malaysian Standard is the second revision of MS 1285, *Specification for glass cleaner (First revision)*.

Major modifications in this revision are as follows:

- a) Clause 2, Referenced document has been replaced with normative references, and the boiler text of the clause and its listing has been updated;
- b) Clause 5, Sampling, has been replaced with a detailed sampling process as Annex E; and
- c) all the appendixes has been replaced with annexes.

This Malaysian Standard cancels and replaces MS 1285:2001.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

Glass cleaner - Specification (Second revision)

1 Scope

This Malaysian Standard applies to a liquid compound of specified composition, used for cleaning glass. It is intended for use on windows and other glass surfaces. It is not suitable for cleaning transparent plastic surfaces.

2 Normative references

The following normative references are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the normative reference (including any amendments) applies.

MS 1830, *Standard test method for flash and fire points by Cleveland open cup tester*

MS 1103, *Method of determination of water using Karl Fischer reagent*

Environmental Quality Act 1974 [Environmental Quality (Prohibition on the Use of Controlled Substance in Soap, Synthetic Detergent and Other Cleaning Agents) Order 1995]

3 General requirements

3.1 The cleaner shall be a clear homogeneous solution and be free from objectionable odour.

3.2 Any dye added to the cleaner shall be stable and non toxic.

3.3 The cleaner shall have no injurious effect on the skin and shall contain no ingredients that are toxic (e.g. methanol) under normal conditions of use.

3.4 The cleaner shall be stable and shall not lose effectiveness or otherwise deteriorate when retained in an unopened container at storage temperature within the range of 20 °C to 40 °C for a period of one year.

3.5 When the product is applied to glass surface and polished, it shall leave the surface free of dust, grime, ordinary soiling materials, streaks and smears.

4 Detail requirements

4.1 Composition

4.1.1 The cleaner shall contain the following ingredients that are surfactants, colouring agent, water and isopropyl alcohol. It may also contain mono and polyhydric alcohols and their derivatives (e.g. ethyl alcohol, ethylene glycol, glycerine, ethylene glycol monobutyl ether) and perfumes.

MS 1285:2014

4.1.2 The following ingredients shall be excluded such as inorganic alkalis, methanol, alkaline salts and organic solvents of types other than those mentioned above.

4.1.3 It shall not contain Branched Alkylbenzene Sulphonates (BAS) according to Environmental Quality Act 1974 [Environmental Quality (Prohibition on the Use of Controlled Substance in Soap, Synthetic Detergent and Other Cleaning Agents) Order 1995].

4.2 Requirements for glass cleaner

In the analysis of the material, the results obtained shall be expressed on the basis of the sample as received, as specified in Table 1.

Table 1. Requirements for glass cleaner

Item	Minimum requirement	Maximum requirement	Method of test
Flash point (Cleveland open cup method)	35 °C	-	MS 1830
Water content, % by mass (Karl Fischer Reagent method)	-	90	MS 1103
Isopropyl alcohol, % by mass	4	-	Annex A
Nonvolatile content, % by mass	-	0.25	Annex B
pH (solution as received)	6.5	11.0	Annex C

4.3 Corrosion and discoloration of aluminium alloy panel

When tested in accordance with Annex D, the cleaner shall not produce visible corrosion or discolouration on an aluminium alloy panel.

5 Sampling

Representative sample to be obtained for carrying out the necessary tests shall be in accordance with Annex E.

6 Packaging

The product shall be packed in containers that are strong enough to withstand normal usage and transportation and that will prevent leakage, drying out and contamination of the product.

7 Labelling

7.1 On the unit container

The following information shall legibly appear on the label of each container:

7.1.1 name and description of the product;

7.1.2 net contents;

7.1.3 name and address of the manufacturer or supplier, and trade-mark, if any;

7.1.4 adequate instructions for the use of the product including the manufacturers' 'Directions for use';

7.1.5 the batch or code number; and

7.1.6 dilution instruction if required.

7.2 In addition, the following cautionary information, printed in bold face type and securely affixed to the container may appear on the label of each container.

CAUTION:

- a) Do not puncture container.
- b) Store at ambient temperature.
- c) Avoid direct contact with skin and eyes.
- d) Avoid contamination of food.
- e) If ingested, seek medical attention.
- f) Do not incinerate or spray into open flame.
- g) Keep away from children.
- h) For cleaning windshields, caution must be exercised as it may have deleterious effects on other vehicle surfaces.

8 Certification mark

Each product, may by arrangement with a recognised certification body, be marked with the certification mark of that body, provided the product conforms to the requirements of this Malaysian Standard.

9 Compliance

When on testing, each of the sample is found to conform to the requirements specified in this standard, the lot, batch or consignment from which the samples have been drawn in accordance with Clause 5 shall be deemed to comply with this standard.

Annex A
(normative)

Determination of isopropyl alcohol content

A.1 Principle

A.1.1 This method determines the content of isopropyl alcohol by using gas chromatograph.

A.2 Apparatus

A.2.1 Gas chromatograph

A.3 Procedure

A.3.1 The isopropyl alcohol content shall be determined by means of a gas chromatograph. Identification may be confirmed by infrared spectrophotometry.

Annex B
(normative)

Determination of nonvolatile content

B.1 Principle

B.1.1 This method determines the nonvolatile content in the product.

B.2 Apparatus

B.2.1 Oven

B.2.2 Steam bath

B.2.3 Glass dish

B.3 Procedure

B.3.1 Accurately determine the mass of a 100 g sample of the cleaner into a tared glass dish and heat on a steam bath to dryness.

B.3.2 Place the dish in an oven at 100 °C to 105 °C and dry to constant mass. If decomposition or discolouration of the solid occurs, carry out the drying in a vacuum oven at 45 °C to 50 °C.

B.4 Report

B.4.1 Report the mass of the residue as a percentage of mass of the cleaner.

Annex C
(normative)

Determination of pH

C.1 Principle

C.1.1 This method determines the pH value of the product as received.

C.2 Apparatus

C.2.1 pH meter (glass electrode)

C.3 Procedure

C.3.1 Measure the pH of the product at room temperature (27 ± 2) °C.

C.4 Report

C.4.1 Report the pH of the product.

Annex D
(normative)

Determination of corrosion and discolouration of aluminium alloy panel

D.1 Principle

D.1.1 This method determines the corrosion and discolouration of aluminium alloy panel by the product.

D.2 Apparatus

D.2.1 Panel of aluminium alloy (75 mm x 150 mm x 1 mm)

D.2.2 Watch glass

D.3 Procedure

Place approximately 1 ml of the cleaner on the cleaned, grease-free surface of the panel of aluminium alloy and cover with a watch glass. At the end of 6 h remove the watch glass, rinse the panel with distilled water and air dry at room temperature. Inspect the panel for any evidence of attack or discolouration.

Annex E
(normative)

Sampling

E.1 General requirements and instructions

E.1.1 All precautions shall be taken to prevent contamination, deterioration and adulteration of the samples.

E.1.2 Each container drawn as sample shall be marked or labelled with the following particulars:

- a) time and date of sampling;
- b) name of manufacturer;
- c) name of sampler;
- d) batch and/or code number; and
- e) other relevant particulars.

E.2 Method of sampling

E.2.1 Lot

All containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the groups of containers in each batch shall constitute separate lots.

E.2.2 From the lot, take at random the number of containers relative to the lot size as given in Table E1.

Table E1. Number of containers to be taken for sampling for various lot sizes

Lot size number of containers	Sample size number of containers
1 to 4	All
5 to 50	4
51 to 100	6
101 to 500	8
501 to 1500	10
1501 and above	12

E.2.3 The containers and the samples so taken shall be deemed to represent the lot.

E.3 Test sample

E.3.1 From each container drawn in accordance with E.2.2, take sufficient cleaner to make a composite test sample of at least 1 L.

E.3.2 The composite test sample should be thoroughly mixed before any determination is carried out.

Annex F
(informative)

Determination of nonvolatile matter by qualitative test

F.1 Principle

F.1.1 This method determines the type of surfactant i.e. cationic, anionic or nonionic.

F.2 Determination of nonvolatile matter

When tested the nonvolatile matter should consist of surfactant together with colouring agent. The type of surfactant (i.e. anionic, cationic or nonionic) to be used is not restricted but may be reported.

F.3 Procedure

F.3.1 Determine the mass to the nearest mg of the material calculated to contain 0.5 g to 1.0 g of alcohol-insoluble matter into a 250 ml beaker and evaporate off the water on a steam bath.

F.3.2 Digest with 100 ml ethyl alcohol (95 %) on a steam bath until all the soluble matter is in solution. Filter the solution through a Gooch crucible having an asbestos filter, washing well with ethyl alcohol (95 %) at 50 °C to 60 °C.

F.3.3 Evaporate to dryness the combined filtrate and washings of the detergent.

F.3.4 Dissolve the residue so obtained in 25 ml of distilled water. To a 10 ml aliquot of this aqueous solution add 1 ml of indicator solution (0.05 % Uranine and 0.05 % Methylene Blue in distilled water). For comparison, add 1 ml of indicator solution to 10 ml distilled water.

F.3.5 The appearance of blue colour in the test solution indicates the presence of a cationic surfactant. A deeper green colour than that of the distilled-water comparison solution indicates the presence of an anionic surfactant. No difference in colour indicates a nonionic surfactant.

NOTE. The intensity of the green colour depends on the concentration and nature of the active material.

Acknowledgements

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