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Canadian General Standards Board | Office des normes générales du Canada

Series 2

Série des 2

WITHDRAWAL

February 2012

Selected standards in the series Soaps and detergents

These National Standards of Canada are hereby withdrawn due to limited use and support for their revision.

The Standards Council of Canada requires that accredited Standards Development Organizations, such as the CGSB, regularly review a consensus Standard to determine whether to re-approve, revise or withdraw. The review cycle is normally five years from the publication date of the latest edition of the Standard.

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RETRAIT

Février 2012

Sélection de normes de la série Savons et détergents

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the date on this withdrawal notice.

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CAN/CGSB-2.1-96

Skin Cleaning Lotion (ICS 71.100.70)

CAN/CGSB-2.5-93

Toilet Soap (ICS 71.100.70)

CAN/CGSB-2.9-97

Scouring Powder (ICS 71.100.40)

CAN/CGSB-2.11-94

Methods of Sampling and Testing Soaps and Detergents (ICS 71.040.40)

CAN/CGSB-2.16-94

Waterless Hand Cleaner (ICS 71.100.70)

CAN/CGSB-2.19-96

Hand Dishwashing Compound (ICS 71.100.40)

CAN/CGSB-2.20-94

Machine Dishwashing Compound (ICS 71.100.40)

CAN/CGSB-2.22-97

Concentrated Dishwashing Rinse Additive (ICS 71.100.40)

CAN/CGSB-2.34-95

Guide to the Selection and Use of Soaps and Detergents (ICS 71.100.40)

seulement puisque leur contenu a été révoqué à la date du présent avis de retrait.

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CAN/CGSB-2.1-96

Lotion nettoyante pour la peau (ICS 71.100.70)

CAN/CGSB-2.5-93

Savon de toilette (ICS 71.100.70)

CAN/CGSB-2.9-97

Poudre à récurer (ICS 71.100.40)

CAN/CGSB-2.11-94

Méthodes d'échantillonnage et d'essai des savons et détergents (ICS 71.040.40)

CAN/CGSB-2.16-94

Nettoie-mains employé sans eau (ICS 71.100.70)

CAN/CGSB-2.19-96

Détergent pour lavage de la vaisselle à la main (ICS 71.100.40)

CAN/CGSB-2.20-94

Détergent pour lave-vaisselle (ICS 71.100.40)

CAN/CGSB-2.22-97

Agent de rinçage concentré pour lave-vaisselle (ICS 71.100.40)

CAN/CGSB-2.34-95

Guide pour le choix et l'utilisation des savons et détergents (ICS 71.100.40)

CAN/CGSB-2.42-97

Stain Remover for Tableware (ICS 71.100.40)

CAN/CGSB-2.43-93

Scale-Removing Compound for Lime Deposits (ICS 71.100.40)

CAN/CGSB-2.46-95

Toilet Bowl and Urinal Cleaning Compound (ICS 71.100.40)

CAN/CGSB-2.47-94

Toilet Bowl Cleaning Compound (Granular or Crystalline) (ICS 71.100.40)

CAN/CGSB-2.49-94

Alkali Drain Cleaner (ICS 71.100.40)

CAN/CGSB-2.112-92

Remover for Water-Emulsion Floor Polish (ICS 71.100.40)

CAN/CGSB-2.141-92

General-Purpose Powder Cleaning Compound (ICS 71.100.40)

CAN/CGSB-2.175-93

Concentrated Nonionic, Unbuilt Liquid Detergent (ICS 71.100.40)

CAN/CGSB-2.180-94

Carpet and Upholstery Shampoo (ICS 71.100.40)

CAN/CGSB-2.42-97

Détachant pour vaisselle (ICS 71.100.40)

CAN/CGSB-2.43-93

Décapants pour dépôts calcaires (ICS 71.100.40)

CAN/CGSB-2.46-95

Produit de nettoyage pour cuvette de toilette et urinoir (ICS 71.100.40)

CAN/CGSB-2.47-94

Produit de nettoyage pour cuvette de toilette (Granules ou cristaux) (ICS 71.100.40)

CAN/CGSB-2.49-94

Produit de nettoyage alcalin pour tuyaux d'écoulement (ICS 71.100.40)

CAN/CGSB-2.112-92

Décapant pour planchers revêtus de cire de type émulsion aqueuse (ICS 71.100.40)

CAN/CGSB-2.141-92

Poudre de nettoyage, d'usage général (ICS 71.100.40)

CAN/CGSB-2.175-93

Détergent liquide concentré non ionique, sans additifs (ICS 71.100.40)

CAN/CGSB-2.180-94

Shampooing pour tapis et tissus d'ameublement (ICS 71.100.40)

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Canadian
General
Standards
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CAN/CGSB-2.46-95

Supersedes CAN/CGSB-2.46-M87

Toilet Bowl and Urinal Cleaning Compound

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National Standard of Canada

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NATIONAL STANDARD OF CANADA

CAN/CGSB-2.46-95

Supersedes CAN/CGSB-2.46-M87

TOILET BOWL AND URINAL CLEANING COMPOUND

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Approved by the
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Acknowledgment is made for the translation of this National Standard of Canada by the Translation Bureau of the Department of the Secretary of State.

CANADIAN GENERAL STANDARDS BOARD

TOILET BOWL AND URINAL CLEANING COMPOUND

1. SCOPE

1.1 This standard specifies the requirements for a liquid, acid, heavy-duty compound used for cleaning toilet bowls and urinals. It is not intended for any other purpose.

1.2 The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any existing applicable regulatory requirements prior to its use.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this standard:

2.1.1 Canadian General Standards Board (CGSB)

CAN/CGSB-2.11 — Methods of Sampling and Testing Soaps and Detergents

2.1.2 Department of Consumer and Corporate Affairs

Hazardous Products Act and Regulations.

2.1.3 Department of Consumer and Corporate Affairs

Principles and Guidelines for Environmental Labelling and Advertising.

2.2 Reference to the publications in par. 2.1.1 and 2.1.3 is to the latest issues, unless otherwise specified by the authority applying this standard. The sources of all above publications are shown in the Notes section.

3. CLASSIFICATION

3.1 The toilet bowls and urinal cleaning compound shall be supplied in the following types, as specified (par. 8.1):

3.1.1 *Types*

Type 1 — Hydrochloric acid-based

Type 2 — Phosphoric acid-based.

4. GENERAL REQUIREMENTS

4.1 The compound shall be a homogeneous aqueous liquid, miscible in water in all proportion.

4.2 The compound shall have a stable, distinct colour and no objectionable odour. The supplier shall have the option of incorporating a trace of a suitable fragrance in the product.

4.3 The compound shall be stable and shall not deteriorate in storage when kept in unopened containers at 0 to 38°C for one year.

4.4 The compound shall not affect the surface of toilet bowls and urinals when used as directed.

4.5 The compound shall comply with any relevant Government Acts and Regulations.

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5. DETAILED REQUIREMENTS

The compound shall have the following composition based on the sample as received:

		Type 1		Type 2		
		Min.	Max.	Min.	Max.	Test Method
5.1	Hydrochloric acid, % by mass	22	24	N/A	—	Par. 7.2.1
5.2	Phosphoric acid, % by volume	N/A	—	15	20	Par. 7.2.2
5.3	Nonionic surfactant, % by mass	0.4	—	1	—	Par. 7.2.3

5.4 The product shall also contain a rust inhibitor (par. 7.2.4).

6. PREPARATION FOR DELIVERY

6.1 **Packaging, Packing and Marking** — Unless otherwise specified (par. 8.1), normal commercial packaging, packing and marking shall be acceptable.

6.2 **Labelling**

6.2.1 The label shall comply with the requirements of any relevant Government Acts and Regulations.

6.2.2 Environmental claims and/or representations shall follow the Department of Consumer and Corporate Affairs' "Principles and Guidelines for Environmental Labelling and Advertising."

6.2.3 The supplier shall provide clear instructions covering the use of the compound, and these shall be permanently affixed to the outside of each container.

6.2.4 In addition to complying with the labelling requirements of any relevant Government Acts and Regulations, each container and each shipping container shall be suitably marked with the following information printed in boldface type, and the label shall be securely affixed to the container:

Manufacturer's or suppliers's name

Date packaged

Type (1 or 2)

Unit size (volume)

Standard number: CAN/CGSB-2.46-95.

7. INSPECTION

7.1 **Sampling** — When required, a sample of one unopened container per batch shall be taken for testing.

7.2 **Testing** — The preparation of the samples in the laboratory shall be carried out in accordance with CAN/CGSB-2.11, Method 2.

7.2.1 ***Hydrochloric Acid Determination***

7.2.1.1 *Reagents and Materials*

90% Ethanol — Certified reagent grade.

Phenolphthalein Indicator Solution (0.1% w/v) — Dissolve 100 mg of the solid indicator in 90% ethanol and dilute to 100 mL.

Standard 1.0 M Sodium Hydroxide (1 mol/L) — Determine the mass of approximately 40 g of NaOH pellets in a 250 mL Erlenmeyer flask. Promptly introduce 40 mL of carbonate-free distilled water, and with caution, swirl to hasten solution of the base. Allow the flask and its contents to cool; filter through a Gooch crucible and collect the clear filtrate in carbonate-free distilled water. Immediately transfer the solution to a 1 L storage bottle and fill to the graduation mark with carbonate-free distilled water. The accurate molarity of the prepared NaOH solution will be

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determined by neutralizing a pre-determined mass of a primary standard used for standardizing alkali solutions (i.e. potassium hydrogen phthalate [$KHC_8H_4O_4$]).

Calcium Acetate Solution (5% w/v) — Dissolve 5 g of $Ca(CH_3COO)_2 \cdot H_2O$ in distilled water and dilute to 100 mL.

7.2.1.2 *Procedure* — To the nearest 0.1 mg, determine the mass of 10 g of the product to be tested in a 250 mL Erlenmeyer flask and add 25 mL of distilled water. Add approximately 15 mL of 5% aqueous calcium acetate solution and warm the content to 50°C. Cool and filter into a beaker. Carefully rinse the Erlenmeyer flask and precipitate with 3 or 4 aliquots of distilled water collecting all rinsings with the filtrate. Titrate the filtrate with standard 1 mol/L NaOH solution.

Calculate the percentage of hydrochloric acid using the following equation:

$$\% \text{ HCl} = \frac{C \times A \times 3.647}{m}$$

where:

C = concentration of NaOH (mol/l)

A = volume of NaOH (ml)

m = mass of the specimen (g).

7.2.2 ***Phosphoric Acid Determination***

7.2.2.1 *Reagents and Materials*

Phenolphthalein Indicator Solution (0.1% w/v) — Dissolve 100 mg of the solid indicator in 90% ethanol and dilute to 100 mL.

Bromophenol Blue Indicator Solution (0.1% w/v) — Triturate 100 mg of the bromophenol blue powder indicator with 1.6 mL of 0.1 N NaOH; then dilute to 100 mL with distilled water.

Standard 2.0 N Sodium Hydroxide — Determine the mass of approximately 80 g of NaOH pellets in a 250 mL Erlenmeyer flask. Promptly introduce 80 mL of carbonate-free distilled water, and with caution, swirl to hasten solution of the base. Allow the flask and its contents to cool; filter through a Gooch crucible and collect the clear filtrate in carbonate-free distilled water. Immediately transfer the solution to a 1 L storage bottle and fill to the graduation mark with carbonate-free distilled water. The accurate molarity of the prepared NaOH solution will be determined by neutralizing a pre-determined mass of a primary standard used for standardizing alkali solutions (i.e. potassium hydrogen phthalate [$KHC_8H_4O_4$]).

7.2.2.2 *Procedure* — Pipet a 5 mL aliquot of the sample into each of two separate 500 mL Erlenmeyer flasks. Add 200 mL of distilled water to each flask. To the first flask, add 2 mL of 0.1% phenolphthalein indicator. To the second flask, add 2 mL 0.1% neutralized bromophenol blue indicator. Titrate each aliquot with a standardized 2.0 N NaOH solution. Note the burette reading at the end points for each. Determine the percentage of phosphoric acid (as orthophosphoric acid) using the following equation (Note 1):

$$\% \ H_3PO_4 = 1.96 \times N \times (A - B)$$

where:

N = normality of the sodium hydroxide solution

A = volume of NaOH required to reach the phenolphthalein end point

B = volume of NaOH required to reach the bromophenol blue end point.

7.2.3 ***Nonionic Surfactant Content***

7.2.3.1 *Reagents and Materials*

Myer's Reagent — Prepare Myer's Reagent by dissolving 1.358 g of $HgCl_2$ in 60 mL of distilled water and transfer into a 100 mL volumetric flask containing 5 g KI dissolved in 10 mL of distilled water. Fill to the graduation mark with distilled water.

Note 1: *½ A = B ± 0.5 mL. Otherwise, the compound contains mineral acids other than phosphoric acid.*

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Chloroform — Certified reagent grade.

Denatured Ethyl Alcohol — Specially Denatured Alcohol Grade.

Cationic Exchange Resin — AG 50W-X8 (150 to 175 µm mesh) (Note 2).

Chromatographic Column — 22 mm inside diameter chromatographic column having 200 to 250 mm height.

7.2.3.2 *Procedure* — To the nearest 1 mg, determine the mass of approximately 100 g of the compound in a 250 mL Erlenmeyer flask and neutralize it with caustic soda solution to a pH of 6.7 to 7.0. Evaporate the resulting solution to dryness at 105°C. Cool to room temperature and wash the resulting solids with five 20 mL aliquots of chloroform, filtering and collecting each washing in one tared 300 mL beaker. Evaporate the chloroform.

7.2.3.3 Calculate the percentage of organic solids using the following equation:

$$\% \text{ organic solids} = \frac{\text{mass of solids (g)} \times 100}{\text{mass of specimen (g)}}$$

Dissolve the organic solids in 50 mL of denatured ethyl alcohol and pass the resulting solution through the freshly regenerated cationic exchange resin. Wash the beaker with four 50 mL aliquots of alcohol collecting them in one tared beaker. Evaporate the alcohol in an oven and determine the percentage of nonionic surfactant isolated using the following equation:

$$\% \text{ nonionic surfactant} = \frac{\text{mass of surfactant isolated (g)} \times 100}{\text{mass of specimen (g)}}$$

Use the Myer's Reagent to confirm nonionic surfactant. Dissolve 100 to 150 mg of isolated surfactant in 5 mL of distilled water. Add 2 to 4 drops of Myer's Reagent. A yellow precipitate will form if nonionic surfactant is present.

7.2.4 ***Rust Inhibitor Determination*** — When required by the testing authority, the supplier shall provide a suitable test method to identify and quantify the rust inhibitor present in the compound, or alternatively, a performance test showing that the rust inhibitor is effective at the concentration used in the product.

8. NOTES

8.1 **Options** — The following options must be specified in the application of this standard:

a. Type of cleaning compound (par. 3.1)

b. Packaging, packing and marking details, if other than as specified (par. 6.1).

8.2 **Sources of Referenced Publications**

8.2.1 The publications referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Ottawa, Canada K1A 1G6. Telephone (613) 941-8703 or 1-800-665-CGSB (Canada only). Fax (613) 941-8705.

8.2.2 The publication referred to in par. 2.1.2 may be obtained from the Canada Communication Group, Publishing, Ottawa, Canada K1A 0S9. Telephone (819) 956-4802.

8.2.3 The publication referred to in par. 2.1.3 may be obtained from the Department of Consumer and Corporate Affairs, Consumer Packaging and Labelling Section, Ottawa, Canada K1C 0C9.

Note 2: The cationic resin may be obtained from Bio-Rad Laboratories, 2200 Wright Ave., Richmond, CA 94804. Equivalent resins from other suppliers may be used.

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