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These National Standards of Canada are hereby withdrawn due to limited use and support for their revision.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

CAN/CGSB-2.49-94

Supersedes CAN/CGSB-2.49-M87

Alkali Drain Cleaner

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National Standard of Canada

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NATIONAL STANDARD OF CANADA

CAN/CGSB-2.49-94

Supersedes CAN/CGSB-2.49-M87

ALKALI DRAIN CLEANER

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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

ALKALI DRAIN CLEANER

1. SCOPE

1.1 This standard specifies requirements for a dry, granular, free-flowing alkali compound suitable for use in the cleaning or clearing of partially clogged drains.

1.2 An alkali compound produced to this standard is designed for the removal of impediments of any material other than cellulosic that restrict the normal flow of water in the drains. The compound shall be safe for use in drains specified in par. 3.4. Attrition of copper piping should be minimal.

1.3 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 Testing and Analysis of Soaps and Detergents

CAN/CGSB-8.2 — Sieves, Testing, Woven Wire, Metric.

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 is to the latest issues unless otherwise specified by the authority applying this standard. The sources of all publications are shown in the Notes section.

3. GENERAL REQUIREMENTS

3.1 The formulation shall be effective for loosening impeded drains to allow satisfactory movement of water.

3.2 The compound shall consist of a uniform granular mixture of aluminum chips, caustic soda and builder salts. In addition, it shall use some low viscosity oil as a moisture barrier (maximum viscosity = 120 mPa·s).

3.3 The compound shall not contain any surfactants, soap or foreign material.

3.4 The compound shall not be deleterious to P.V.C., lead and ceramic piping, and have a minimal effect on copper.

3.5 The dry product shall have no objectionable odour.

3.6 When held under normal conditions for a period of two years, the material shall remain uniform, free-flowing, and the packaging shall show no evidence of exterior deterioration.

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4. DETAILED REQUIREMENTS

The alkali compound shall comply with the following detailed requirements:

		Min.	Max.	Test Method
4.1	Mineral oil, % by mass	0.2	0.3	Par. 6.2.4
4.2	Aluminum chips, % by mass (Note 1)	3.5	7.0	Par. 6.2.1
4.3	Caustic soda beads, % by mass	45	55	Par. 6.2.2
4.4	Sodium nitrate prills, % by mass	25	35	Par. 6.2.3
4.5	Coarse builder salt (sodium chloride or sodium sulphate), % by mass		Remainder	Par. 6.2.5

4.6 **Heat of Reaction** — When tested in accordance with par. 6.2.6, 30 g of the compound shall cause a temperature rise of 70 to 80°C for 100 mL of water initially at 15 to 20°C.

4.7 **Foaming Characteristics** — The foaming head of the compound as tested in par. 6.2.6 shall not exceed 5 cm.

4.8 **Solubility** — The compound, when tested as in par. 6.2.6, shall have no insoluble alkali or aluminum chips at the end of 10 to 12 min. A black flocculent precipitate shall not be a criterion for the compound failing this test.

4.9 **Particle Size** — When tested in accordance with CAN/CGSB-2.11, Method 16.2, 100% of the compound shall pass through a 4000 µm sieve and 95% shall be retained on a 160 µm sieve (Note 2).

5. PREPARATION FOR DELIVERY

5.1 **Packaging** — The compound shall be packaged in rigid containers such as internally lacquered steel or tin plate, polyethylene, P.V.C. or polypropylene.

5.2 **Packing and Marking** — Packaged compound shall be packed and marked according to normal commercial practice unless otherwise specified (par. 7.1). For Federal Government Procurement, markings shall include the stock number and the Department of Supply and Services contract serial number.

5.3 **Labelling**

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

5.3.2 Environmental claims and/or representations shall follow Consumer and Corporate Affairs Canada's "Principles and Guidelines for Environmental Labelling and Advertising."

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

Note 1: The aluminum chips shall be of a size to pass through a 2500 µm *sieve and be retained on a* 800 µm *sieve (CAN/CGSB-8.2).*
Note 2: See CAN/CGSB-8.2.

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

ALKALI DRAIN CLEANER

Manufacturer's or supplier's name

Date packaged

Unit size (volume)

Standards number: CAN/CGSB-2.49-94

WARNING: Alkaline Powder — This product must not be mixed with acid or other chemicals.

6. INSPECTION

6.1 **Sampling** — Sampling shall be carried out in accordance with CAN/CGSB-2.11, Method 1.2.

6.2 **Test Methods**

6.2.1 ***Determination of Aluminum Chips Content*** — Obtain a sample of the compound as indicated in par. 6.1. Determine the mass of 30.0 ± 0.1 g in a small dry glass beaker using a plastic spoon for transfer of the compound. Place 500 mL of cold distilled water (4 to 7°C) in an appropriate heat-resistant 1000 mL glass beaker. Start rapid agitation of the water with a mechanical stirrer. Add the accurately weighed specimen to the water, rinsing the small glass beaker 4 to 5 times with 10 or 15 mL of cold distilled water and recovering the rinse waters in the 1000 mL glass beaker. Stir for 4 min or until all components except the aluminum chips have dissolved. Remove the stirrer, rinse it with cold distilled water that is recovered in the 1000 mL glass beaker. The dissolution should be done quickly to prevent the aluminum from reacting. Decant the solution and rinsings into a 1 L volumetric flask, making sure that all the aluminum chips remain in the beaker. Rinse the aluminum chips three times with 10 to 15 mL of distilled water and transfer each washing to the volumetric flask. Adjust the volume of the solution to 1 L with distilled water and thoroughly mix it by a few inversions of the flask. This solution will be known as the stock solution for the other determinations. Carefully, using a plastic spoon, transfer all aluminum chips into a small tared glass beaker. Dry the contents at 105°C for 4 h in an oven (making sure all the moisture is removed before placing in the desiccator). After cooling in a desiccator, weigh the beaker with the contents and determine the percentage of aluminum as follows:

$$\text{Percentage of aluminum} = \frac{\text{mass of aluminum (g)}}{\text{mass of specimen (g)}} \times 100$$

6.2.2 ***Determination of Caustic Soda (NaOH) Content*** — With an accurate pipette, withdraw 25 mL of the stock solution (par. 6.2.1) into a 250 mL Erlenmeyer flask containing 40 to 50 mL of distilled water. Add five drops of phenolphthalein indicator and titrate to a clear end point with a standardized 0.1 mol/L sulphuric acid (H_2SO_4) solution. The caustic soda content (in percent) is calculated as follows:

$$\text{Percentage of NaOH} = \frac{v \times c \times 320}{m}$$

where: v = volume of H_2SO_4 (mL)

c = concentration of H_2SO_4 (mol/L)

m = mass of the original specimen (g)

6.2.3 ***Determination of the Sodium Nitrate ($NaNO_3$) Content*** — By pipette, transfer 25 mL of the stock solution (par. 6.2.1) into a clean 250 mL heat-resistant beaker with three or four glass beads to reduce bumping during boiling. Pipette 25 mL of 1 mol/L ferrous sulphate ($FeSO_4 \cdot 7H_2O$) solution and 20 mL of concentrated sulphuric acid (H_2SO_4). Wear safety glasses or a face shield. Boil for 4 to 5 min until the dark solution clears to a deep orange brown. While the solution is boiling, place 500 mL of distilled water in a 1 L beaker. While stirring the water, carefully add the hot boiling solution. Rinse the reaction beaker three or four times with small amounts of distilled water, collecting the washings in the 1 L beaker. While stirring slowly, titrate the solution with a standardized

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0.02 mol/L potassium permanganate ($KMnO_4$) solution to the permanganate end point. Also titrate a blank specimen. The sodium nitrate content (in percent) is calculated as follows:

$$\text{Percentage of } NaNO_3 = \frac{(A - B) \times c \times 566.6}{m}$$

where: A = volume of $KMnO_4$ to titrate specimen (mL)

B = volume of $KMnO_4$ to titrate blank (mL)

c = concentration of $KMnO_4$ (mol/L)

m = mass of the original specimen (g)

6.2.4 ***Determination of Oil Content*** — Determine the mass of a 300 g specimen in a 1 L Erlenmeyer flask. Add 300 mL of petroleum ether or hexane and vigorously shake for 2 to 3 min. (CAUTION: SOLVENTS ARE FLAMMABLE — CONDUCT WORK IN A FUME HOOD.) Cover flask with glass plate and allow contents to remain undisturbed for 5 to 8 min. Pipette 50 mL of the solvent layer into a tared beaker. Evaporate this solvent on a steam bath and dry final traces of moisture in an oven. Cool beaker in a desiccator, weigh it and determine the oil content (in percent) as follows:

$$\text{Percentage of oil content} = \frac{\text{mass of oil (g)} \times 6 \times 100}{\text{mass of specimen (g)}}$$

6.2.5 ***Builder Salt Content*** — Determine the builder salt by difference. Add the percentages of the aluminum chips, caustic soda, sodium nitrate and oil and subtract this total from 100% and report the difference as percent builder salt.

6.2.6 ***Heat of Reaction*** — Add 30 g of the alkali compound to 100 mL of distilled water at 15 to 20°C, in a 30 × 3.8 cm heat-resistant test tube. The final temperature reading is taken after 10 to 12 min. The temperature rise is calculated as follows:

Temperature rise = Final temperature of solution — Initial temperature of solution.

7. NOTES

7.1 **Option** — The following option must be specified in the application of this standard:

a. Packing and marking details, if normal commercial practice is not suitable (par. 5.2).

7.2 **Precautions**

7.2.1 The compound should be used as supplied and according to label directions. It must not be mixed with any additives such as ammonia or any form of acids.

7.2.2 The compound shall be used for no other application but the cleaning of drains. It shall not be used for the cleaning of toilet bowls.

7.2.3 The compound shall always be stored in sealed containers under dry conditions.

7.3 **Sources of Referenced Publications**

7.3.1 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.

7.3.2 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.

7.3.3 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 K1A 0C9.

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