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Canadian General Standards Board | Office des normes générales du Canada

Series 1

Série des 1

WITHDRAWAL

October 2011

Selected standards in the series Paints, pigments and related products

These CGSB standards and National Standards of Canada are hereby withdrawn due to limited use and support for their revision.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

Octobre 2011

Sélection de normes de la série Peintures, pigments et produits connexes

Ces normes de l'ONGC et ces Normes nationales du Canada sont retirées par le présent avis en raison de leur utilisation limitée et du manque de support pour leur révision.

Le Conseil canadien des normes exige que les organismes accrédités d'élaboration de normes, tel que l'ONGC, effectue régulièrement un examen des normes consensuelles afin de déterminer s'il y a lieu d'en renouveler l'approbation, de les réviser ou de les retirer. Le cycle d'examen d'une norme est généralement de cinq ans à partir de la date de publication de la dernière édition de celle-ci.

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cette information. Ces normes doivent être consultées à des fins archivistiques seulement puisque leur contenu a été révoqué à la date du présent avis de retrait.

Des copies archivées des normes retirées peuvent être obtenues à des fins historiques ou archivistiques auprès du Centre des ventes de l'ONGC. Il suffit d'en faire la demande par téléphone au 819-956-0425 ou 1-800-665-2472, par télécopieur au 819-956-5740, par Internet à : www.tpsgc-pwgsc.gc.ca/ongc-cgsb/, par courriel à ncr.CGSB-ONGC@tpsgc-pwgsc.gc.ca, ou par courrier adressé au Centre des ventes, Office des normes générales du Canada, 11, rue Laurier, Gatineau, Canada K1A 1G6.

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CAN/CGSB-1.59-97

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CAN/CGSB-1.60-97

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1-GP-71 (Oct 1983)

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1-GP-71

Methods of Testing Paints and Pigments

No. 5-96

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Blushing Resistance of Lacquer Finishes (ICS 87.040)

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1-GP-71

Méthodes d'essai des peintures et pigments

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1-GP-180Ma (Feb 1996)

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CAN/CGSB-1.184-98

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Sanding Type Primer Surfacer (ICS 87.040)

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Enamel, Automotive Refinishing, Fast Drying, Gloss (ICS 87.040)

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CAN/CGSB-1.176-2000

Revêtement de polyuréthane, d'intérieur, durci à l'humidité, non pigmenté (ICS 87.040)

CAN/CGSB-1.177-M91

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1-GP-180Ma (févr. 1996)

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CAN/CGSB-1.183-99

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CAN/CGSB-1.209-2003

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CAN/CGSB-1.210-2003

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CAN/CGSB-1.193-99

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1-GP-200Ma (janv. 1985)

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CAN/CGSB-1.214-2004

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CAN/CGSB-1.300-2000

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NATIONAL STANDARD OF CANADA

CAN/CGSB-1.104-M91

Supersedes 1-GP-104Ma

Semigloss Alkyd Air Drying and Baking Enamel

Canadian General Standards Board

CGSB

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CGSB standards are subject to review and revision at any time, so as to ensure that they keep abreast of technological progress. Suggestions for their improvement, which are always welcome, should be brought to the notice of the standards committees concerned. Changes to standards are issued either as separate amendment sheets or in new editions of standards.

An up-to-date listing of CGSB standards, including details on latest issues and amendments, and ordering instructions, will be found in the CGSB Catalogue, which is published annually and is available without charge upon request.

Although the intended primary application of this standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

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Further information on CGSB and its services and standards may be obtained from:

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K1A 1G6

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The principal objectives of the Council are to foster and promote voluntary standardization as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting the consumer, facilitating domestic and international trade, and furthering international co-operation in the field of standards.

A National Standard of Canada is a standard which has been approved by the Standards Council of Canada and one which reflects a reasonable agreement among the views of a number of capable individuals whose collective interests provide, to the greatest practicable extent, a balance of representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject in hand. It normally is a standard that is capable of making a significant and timely contribution to the national interest.

Approval of a standard as a National Standard of Canada indicates that a standard conforms to the criteria and procedures established by the Standards Council of Canada. Approval does not refer to the technical content of the standard; this remains the continuing responsibility of the accredited standards-writing organization.

Those who have a need to apply standards are encouraged to use National Standards of Canada whenever practicable. These standards are subject to periodic review; therefore, users are cautioned to obtain the latest edition from the organization preparing the standard.

The responsibility for approving National Standards of Canada rests with the:

Standards Council of Canada
350 Sparks Street
Ottawa, Ontario
K1P 6N7

NATIONAL STANDARD OF CANADA

CAN/CGSB-1.104-M91

Supersedes 1-GP-104Ma
September 1983

SEMIGLOSS ALKYD AIR DRYING AND BAKING ENAMEL

This new edition supersedes CGSB standard 1-GP-104Ma, September 1983. The requirement for Outdoor Exposure has been deleted from this edition.

The Department of National Defence administers a Qualification Listing Program for products conforming to the requirements of this standard. Further information on the listing program is available from the Director of Engineering and Maintenance Planning and Standardization (DEMPS 4), Ottawa, Canada K1A 0K2.

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CANADIAN GENERAL STANDARDS BOARD

SEMIGLOSS ALKYD AIR DRYING AND BAKING ENAMEL, EXTERIOR AND INTERIOR

1. SCOPE

1.1 This standard applies to a durable alkyd-base enamel suitable for exterior and interior use on primed surfaces of workshop machinery, motor vehicles and equipment.

1.2 For more detailed information on intended uses, see par 8.2.

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)

1-GP-12 — Standard Paint Colors

CAN/CGSB-1.70-M — High Solvency Thinner

1-GP-71 — Methods of Testing Paints and Pigments

CAN/CGSB-1.81-M — Air Drying and Baking Alkyd Primer for Vehicles and Equipment.

2.1.2 Department of Consumers and Corporate Affairs

Hazardous Products Act.

2.1.3 ASTM

D 1200 — Test Method for Viscosity of Paints, Varnishes and Lacquers by Ford Viscosity Cup

D 1210 — Test Method for Fineness of Dispersion of Pigment — Vehicle Systems

D 2621 — Method for Infrared Identification of Vehicle Solids from Solvent-Type Paints.

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

3. CLASSIFICATION

3.1 The enamels shall be supplied in one of the following types, as specified (par. 8.1):

3.1.1 ***Types***

Type 1 — Air Drying

Type 2 — Baking (par. 8.2.3).

4. GENERAL REQUIREMENTS

4.1 Enamels complying with this standard shall consist of pigments adequately dispersed in an alkyd-base vehicle. It shall produce a uniform durable coating with maximum colour stability and resistance to chalking.

4.2 Type 1 enamel shall be suitable for application by brush or spray and shall be supplied in brushing consistency.

4.3 Type 2 enamel shall be suitable for application by brush touch-up or spray and shall be supplied in touch-up consistency.

4.4 Both types of enamel shall spray satisfactorily when reduced in accordance with the manufacturer's instructions, with a thinner conforming to CAN/CGSB-1.70-M.

4.5 The enamel shall not skin, gel, thicken excessively nor cake in the original unopened container for one year from date of shipment when stored at temperatures not exceeding 40°C. At the end of this time it shall be capable of being readily mixed to a uniform condition by stirring, shall spray satisfactorily when reduced to a spraying consistency, and meet the requirements for drying time (par. 5.7).

5. DETAILED REQUIREMENTS

Enamel to this standard shall comply with the following detailed requirements when tested in accordance with the specified test methods:

				Test Method	
				CGSB	
		Min.	Max.	1-GP-71	ASTM
5.1	Consistency				
	Type 1, Krebs units	65	85	4.5	—
	Type 2, No. 4 Ford Cup, s	40	100	—	D 1200
5.2	60°, gloss units				
	Type 1	30	50	13.2	—
	Type 2 (Note 1)	30	50	13.3	—
5.3	Fineness of grind, Hegman	5	—	—	D 1210
5.4	Volatile matter, % by mass	—	50	17.1	—
5.5	Nonvolatile vehicle, % by mass	25	—	19.1	—
5.6	Rosin and rosin derivatives, % by mass of NVV	—	3.0	60.2	—

5.7 **Drying Time**

5.7.1 ***Type 1 Enamel*** — The enamel shall set to touch in not more than 1-1/2 h and shall dry hard in not more than 8 h, when tested in accordance with CGSB standard 1-GP-71, Method 5.1.

5.7.2 ***Type 2 Enamel*** — The enamel, when baked in accordance with the manufacturer's instructions (Note 1) and conditioned for 30 min at 45°C, shall be tack free. After cooling for 30 min under standard conditions, the enamel shall pass the dry hard test, when tested in accordance with CGSB standard 1-GP-71, Method 44.1.

5.8 **Colour** — The colour of the enamel shall conform to such CGSB standard 1-GP-12 semigloss colour as may be specified (par. 8.1), when tested in accordance with CGSB standard 1-GP-71, Method 12.9.

Note 1: Type 2 baking enamel shall be baked in an oven (CGSB 1-GP-71, Method 103.2) for the time and temperature specified by the manufacturer, except that the baking time shall not exceed 30 min.

5.9 **Hiding Power** — The enamel shall meet the following hiding power requirements according to colour (Note 2), when tested in accordance with CGSB standard 1-GP-71, Method 14.1:

Colour	CGSB 1-GP-12	Hiding Power m^2/L
Grey	501-201	12
	501-203	12
Blue	502-201	8
Green	503-203	12
	503-208	10
	503-209	10
	503-210	10
	503-211	10
Brown	504-204	12
Yellow	505-201	8
	505-202	8
	505-211	8
Orange	508-201	8
	508-202	8
Red	509-202	6
Black	512-201	16
White	513-201	10
Tints		10

5.10 **Skinning Properties** — The enamel shall be nonskinning when tested in accordance with CGSB standard 1-GP-71, Method 10.1.

5.11 **Accelerated Stability (Type I)** — When subjected to the accelerated storage stability test at 60°C for 96 h, in accordance with CGSB standard 1-GP-71, Method 30.3, Type 1 enamel shall not gel, liver, curdle nor increase in viscosity by more than 5 Krebs units and there shall be no evidence of seeding. After heating, the enamel shall produce a dry film that is uniform in appearance and free from streaking, mottling and seediness. The change in gloss shall not be more than five units when compared with a film prepared from untreated enamel and the treated enamel shall meet the drying time requirements (par. 5.7.1).

5.12 **Vehicle Composition**

5.12.1 ***Type 1*** — The vehicle shall consist of a modified, phthalic alkyd resin with suitable thinners and driers. On analysis, the nonvolatile vehicle shall yield not less than 25% phthalic anhydride, when tested in accordance with CGSB standard 1-GP-71, Method 57.1.

5.12.2 ***Type 2*** — The vehicle shall consist of a medium to short oil-modified phthalic alkyd resin and urea or melamine-formaldehyde resin together with suitable thinners and driers. The nonvolatile vehicle shall not contain less than 15% amine-aldehyde resin and shall not yield less than 25% phthalic anhydride, when tested in accordance with CGSB standard 1-GP-71, Method 57.1. The presence of amine-aldehyde resins shall be confirmed by infrared spectroscopy in accordance with ASTM D 2621.

5.13 **Gasoline Resistance** — The enamel film prepared as specified and immersed 15 min in a 70:30 mixture of isooctane:toluene shall show no wrinkling, blistering or loss of adhesion . After subsequent drying for 2 h, it shall show no softening and only a trace of discolouration, when tested in accordance with CGSB standard 1-GP-71, Method 107.1 for type 1 and Method 107.2 (Note 1) for Type 2.

Note 2: When other colours are specified, the purchaser must also specify the hiding power.

5.14 **Oil Resistance** — The dried enamel film shall withstand 4 h immersion in lubricating oil. It shall show no blistering, loosening, wrinkling, colour change, softening nor other deterioration in condition and appearance, when tested in accordance with CGSB standard 1-GP-71, Method 109.1 and when compared to a reference panel stored under standard conditions.

5.15 **Water Resistance** — The enamel film shall withstand 18 h immersion in water at 23°C without blistering or wrinkling. After subsequent drying for 2 h, it shall not show more than a slight dulling or whitening, and no softening, when tested in accordance with CGSB standard 1-GP-71, Method 110.1 (Note 1).

5.16 **Scratch Resistance** — The cured enamel film shall withstand the scratch test under a load of 900 g for Type 1 and 1200 g for Type 2 without exposing the metal through the scratch in the film, when tested in accordance with CGSB standard 1-GP-71, Method 116.5 for Type 1 and Method 116.7 (Note 1) for Type 2.

5.17 **Flexibility** — The cured enamel film shall show no cracking or peeling when subjected to the bending test at 23°C, using a 3.2 mm diameter mandrel, in accordance with CGSB standard 1-GP-71, Method 119.1 for Type 1 and Method 119.13 (Note 1) for Type 2.

5.18 **Accelerated Weathering** — A film of the enamel prepared and conditioned as specified shall withstand an exposure period of ten 24 h cycles in an accelerated weathering machine, when tested in accordance with CGSB standard 1-GP-71, Method 122.6 for Type 1 and 122.7 (Note 1) for Type 2 without checking, cracking or flaking, and not more than No. 8 chalking. Colours Yellow 505-201 and 505-211 may exhibit a moderate change in colour, but all other colours shall show not more than a slight change in colour. The change in 60° gloss shall not be more than 30%, and in no case shall it fall below 25 units.

6. PREPARATION FOR DELIVERY

6.1 Unless otherwise specified (par. 8.1), preparation for delivery shall conform to normal commercial practice.

6.2 **Labelling** — In addition to complying with the labelling requirements of any relevant Acts or Regulations, each container shall be suitably labelled to show the following:

Name and type of material

Standard number: CAN/CGSB-1.104-M91

CGSB standard l-GP-l2 colour

Manufacturers' name and address

Manufacturers' batch number

Manufacturers' code number

Date of manufacture

Thinning instructions for spraying using a thinner conforming to CAN/CGSB-1.70-M.

Baking instructions for Type 2 enamel (time and temperature).

6.3 **Toxic Elements** — This material shall be labelled to conform to the requirements of the Hazardous Products Act in respect to designated toxic elements.

7. INSPECTION

7.1 **Sampling** — Sampling shall be carried out in accordance with CGSB standard l-GP-7l, Method 1.1.

7.2 **Testing** — When test panels are to be prepared by spraying, the amount of thinner conforming to CAN/CGSB-l.70-M used to reduce the enamel shall be in accordance with the manufacturer's instructions.

8. NOTES

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

a. Type of enamel (par. 3.l)

b. Colour (par. 5.8)

c. Preparation for delivery, if other than as specified (par. 6.1).

8.2 Intended Uses

8.2.1 Enamels complying with this standard are intended primarily for spray application over cleaned and primed metal surfaces of workshop machinery, motor vehicles, aircraft and other equipment. Type 1 enamel may be applied to suitably prepared wooden parts of the equipment. The following systems are recommended:

	Steel	Wood
Filler (where necessary)		
Sealer	CAN/CGSB-1.102-M	
Primer	CAN/CGSB-1.81-M Type 1 or 2	CGSB-1-GP-189M or CAN/CGSB-1.84-M
Enamel	CAN/CGSB-1.104-M Type 1 or 2	CAN/CGSB-1.104-M Type 1

8.2.2 For information on systems for use over other metals see CGSB standard 1-GP-72 Guide to the Selection of Paint Standards on Use Basis.

8.2.3 ***Baking Properties of Type 2 Enamel*** — Type 2 enamel shall be baked in accordance with the manufacturer's instructions which shall include the time and temperature except that the time shall not exceed 30 min. The user is cautioned that baking by infrared methods may produce slight differences in colour and appearance in the enamel finish compared to those produced by convection oven baking. If infrared baking is used a preliminary check should be made to assure that the desired result is obtained.

8.3 Related Publications

CGSB standards

1-GP-88M — Enamel, Alkyd, Air Drying and Baking, Gloss

CAN/CGSB-1.135-M — Flat Alkyd Enamel for Equipment.

8.4 Sources of Referenced Publications

8.4.1 The publications referred to in par. 2.1.1, 2.1.3, 8.2 and 8.3 may be obtained from the Canadian General Standards Board, Sales Unit, Ottawa, Canada K1A 1G6. Telephone (819) 956-0425 or 956-0426. Fax (819) 956-5644.

8.4.2 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.

8.4.3 The publications referred to in par. 2.1.3 may be obtained from ASTM, 1916 Race Street, Philadelphia, PA 19103, U.S.A. or from the Standards Council of Canada, Standards Sales Branch, 350 Sparks Street, Suite 1200, Ottawa, Ontario K1P 6N7.