



1-GP-116a
31 December 1968

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31 décembre 1968

CANCELLATION

April 1982

CANADIAN GENERAL
STANDARDS BOARD

Specification for

ENAMEL: MODIFIED ALKYD, QUICK
DRYING, GLOSS (GREEN 503-101)

This standard is hereby cancelled and replaced by 1-GP-191M, Enamel, Automotive Refinishing, Fast Drying, Gloss.

ANNULATION

Avril 1982

OFFICE DES NORMES
GÉNÉRALES DU CANADA

Norme

PEINTURE-ÉMAIL AUX RÉSINES
ALKYDES MODIFIÉES, À SÉCHAGE
RAPIDE, BRILLANTE (VERT 503-101)

Cette norme est annulée par la présente. Elle est remplacée par la norme 1-GP-191M, Peinture-émail brillante, à séchage rapide, pour le repeinture des carrosseries de véhicules automobiles.





CANADA

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

SPECIFICATION

FOR

ENAMEL: MODIFIED ALKYD, QUICK DRYING,
GLOSS (GREEN 503-101)

1-GP-116a

31 DECEMBER 1968

SUPERSEDES 1-GP-116

16 JUNE 1961

THIS SPECIFICATION HAS BEEN PREPARED BY A GOVERNMENT -
INDUSTRY COMMITTEE TO COMPLY WITH THE SPECIFIC REQUIREMENTS
OF THE FEDERAL GOVERNMENT. IT IS INTENDED FOR USE IN A PRO-
CUREMENT SYSTEM THAT INCLUDES INSPECTION PROCEDURES TO
ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE SPECIFICA-
TION AND ITS USE WITHOUT SUCH INSPECTION PROCEDURES MAY
NOT BE ADVISABLE.

THIS SPECIFICATION APPLIES TO QUICK-DRYING DURABLE ENAMEL, BASED ON A MODIFIED-
ALKYD BINDER, FOR USE ON PRIMED METAL SURFACES, PARTICULARLY ON MOTOR VEHICLES.

DEPARTMENT OF DEFENCE PRODUCTION, OTTAWA, CANADA

COMMITTEE ON PAINTS, PIGMENTS AND RELATED COMMODITIES

and

Aeronautical, Equipment and Ammunition Subcommittee

(Membership at date of approval by the Committee)

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CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Specification
for

ENAMEL: MODIFIED ALKYD, QUICK DRYING, GLOSS (GREEN 503-101)

1. DEFINITION

1.1 This specification applies to quick-drying durable enamel, based on a modified-alkyd binder, for use on primed metal surfaces, particularly on motor vehicles.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this specification:

2.1.1 CGSB 1-GP-12c, Standard Paint Colors.

2.1.2 CGSB 1-GP-71, Methods of Testing Paints and Pigments.

2.1.3 ASTM Standards on Paint, Varnish, Lacquer and Related Products.

2.2 Reference to the above publications, to test methods therein, and to other specifications is to the issues in effect on the date of the invitation to tender, unless otherwise specified.

3. CLASSIFICATION

3.1 The enamel shall be supplied in one type only.

4. GENERAL REQUIREMENTS

4.1 Enamel complying with this specification shall consist of suitable pigments adequately dispersed in a chlorinated rubber modified alkyd-resin vehicle. The use of benzene is prohibited.

4.2 The enamel shall produce on drying a smooth, uniform, hard and durable coating with good adhesion, high gloss, high resistance to chalking and maximum color stability.

4.3 It shall be suitable for spray application when three volumes of enamel are reduced with one volume of 1-GP-94 thinner.

* This revision incorporates 1-GP-116 and latest Amendment (No. 2). No changes in technical content have been made.

4.4 The enamel shall not skin, gel, thicken excessively or cake in the original unopened container for one year from the date of shipment when stored at a temperature not exceeding 100°F (38°C). At the end of this time it shall be readily mixed to a uniform condition by stirring and shall meet the requirement for drying time.

5. DETAIL REQUIREMENTS

Enamel to this specification shall comply with the following detail requirements:

				Test Method	
		Min	Max	1-GP-71	ASTM
5.1	Consistency, Krebs units	65	80	4.5	-
5.2	Drying Time			5.1	-
5.2.1	Set-to-Touch, minutes	-	20		
5.3	Gloss, units	85	-	13.1	-
5.4	Hiding Power, sq ft/gal	600	-	14.1	-
5.5	Fineness of Grind, Hegman	7	-	-	D1210
5.6	Volatile Matter, % by wt	-	50	17.1	-
5.7	Nonvolatile Vehicle, % by wt	35	-	19.1	-
5.7.1	Phthalic Anhydride, % by wt of NVV	18	-	57.1	-
5.7.2	Chlorinated Rubber, % by wt of NVV	20	-		
5.8	Rosin and Rosin Derivatives	-	NIL	60.1	-
5.9	<u>Color</u> - The color of the enamel shall be Green 503-101 as defined in CGSB 1-GP-12c.				
5.10	<u>Skinning</u> - The enamel shall be nonskinning. Method 10.1				
5.11	<u>Gasoline Resistance</u> - A film of enamel dried 7 days and immersed 4 hours in 3-GP-951 Type 3 hydrocarbon test fluid, when examined after a 2-hour recovery period, shall show no wrinkling, blistering, softening nor loss of adhesion and not more than a trace of discoloration. Loss of adhesion is evaluated by the knife test. Method 107.1 and 135.1				
5.12	<u>Water Resistance</u> - A film of enamel immersed 24 hours in water at 73°F (23°C), after a 2-hour recovery period, shall show no lifting, blistering, wrinkling, softening, loss of adhesion, nor more than slight dulling or whitening. Loss of adhesion is evaluated by the knife test. Method 110.1 and 135.1				
5.13	<u>Scratch Resistance</u> - The dried enamel film shall withstand the scratch test under a load of 900 grams without exposing the metal through the scratch in the film. Method 116.2				
5.14	<u>Flexibility</u> - The dried enamel film shall show no cracking nor peeling when subjected to the bending test at 73°F (23°C) using a 1/8 inch mandrel. Method 119.1				

5.15 Accelerated Weathering - A film of enamel, prepared and conditioned as specified, shall withstand an exposure period of fifteen 24-hour cycles in an accelerated weathering machine without chalking, checking, cracking or flaking. After the 15-cycle exposure the gloss shall be not less than 75.

Method 122.6*

5.16 Self-Lifting - The enamel film shall take the application of a second coat before 2 hours and after 72 hours without blistering, lifting, loosening, softening, wrinkling or other defects due to intercoat action.

Method 132.1

5.17 Outdoor Exposure - When exposed one year in Florida, one coat of enamel applied to steel primed with 1-GP-105 primer shall show no appreciable film deterioration nor color change, and not more than moderate chalking. The weathered film shall readily polish to a full gloss and reflect a clean sharp image. There shall be no cracking nor other impairment of film integrity and the polished area shall be restored to substantially the original color.

Method Par. 7.4

6. PREPARATION FOR DELIVERY

6.1 Unless otherwise specified, commercial packaging, packing and marking shall be acceptable.

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

Manufacturer's Name and Address

Name of Material

CGSB Specification No.

Qualification No. (when required)

Manufacturer's Batch No.

Manufacturer's Code No.

Date of Manufacture

Thinning Instructions for spraying using 1-GP-94 thinner

CAUTION: KEEP AWAY FROM FLAME

7. INSPECTION

7.1 Sampling - Sampling shall be carried out in accordance with Method 1.1 of 1-GP-71.

7.2 Testing

7.2.1 The methods of test shall be as specified with each requirement.

7.2.2 When test panels are to be prepared by spraying, the amount of 1-GP-94 thinner used to reduce the enamel shall be in accordance with par. 4.3.

7.3 Classification of Tests - Tests for determining compliance with this specification shall be classified as follows:

* Except that the second coat shall be applied 72 hours after application of the first coat.

- 7.3.1 Qualification Tests - Those tests that are performed on samples submitted for qualification as a satisfactory product. They shall consist of all the tests necessary to establish compliance with all the requirements of this specification.
- 7.3.2 Lot Acceptance Tests - Those tests that are used to determine the acceptability of a lot or batch of a qualified product. The inspecting authority may request the testing of the materials for compliance with any of the requirements of this specification except outdoor exposure (par.5.17), and may reject a lot or batch on the basis of any requirement in this specification.
- 7.4 Outdoor Exposure - Outdoor exposure shall be carried out in accordance with Method 143.2 with the addition of an extra treatment of the exposed panels as follows:

Applying not more than moderate pressure, hand polish a portion of the film with CGSB 25-GP-11 liquid automobile polish, using a soft cloth. Examine the polished area for restoration of color and gloss, under 10-power magnification.

8. NOTES

- 8.1 Intended Uses
- 8.1.1 Enamel complying with this specification is intended as a quick-drying durable enamel for use on primed metal surfaces, particularly on motor vehicles.
- 8.1.2 The enamel is intended to be recoatable for up to 2 hours after application of the first coat. If recoating cannot be carried out within 2 hours, the enamel must be allowed to dry at least 72 hours before recoating. It is not intended that the enamel be suitable for recoating between 2 and 72 hours.
- 8.1.3 Enamels meeting this specification are intended for application primarily by spray over 1-GP-105 quick-drying primer.
- 8.2 Ordering Data - Purchasers should specify packaging, packing and marking details, if commercial practice is not suitable; and if a qualified product is required.
- 8.3 Qualification
- 8.3.1 Qualification Procedure - Details regarding the procedure for qualification of 1-GP-116 enamel may be obtained from:

Quality Assurance Division,
Technical Services Branch,
Canadian Forces Headquarters,
Department of National Defence,
Ottawa 4, Canada.

The laboratories are located in the Canadian Government Printing Bureau Bldg.,
Sacré-Coeur Blvd., Hull, P.Q.

- 8.3.2 Qualified Products - Federal government departments and agencies may also obtain information from the above address regarding availability of qualified products.

8.4 Related CGSB Specifications - as to use

8.4.1 1-GP-88, Enamel: Alkyd, Air Drying and Baking, Gloss.

8.4.2 1-GP-98, Enamel: Alkyd, Air Drying and Baking, Gloss (Green 503-101).

8.4.3 1-GP-117, Enamel: Modified Alkyd, Quick Drying, Semigloss (Green 503-201).

8.5 The publications referred to in par.2.1.1 and 2.1.2 are obtainable from the Canadian Government Specifications Board.

8.6 The publication referred to in par.2.1.3 is obtainable from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103, U.S.A.