Society of Automotive Engineers, Inc.
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# AEROSPACE MATERIAL SPECIFICATION

AMS 3130C
Superseding AMS 3130B
Issued 10-1-45
Revised 5-1-68

## PAINT VEHICLE
Glyceryl Phthalate



1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily as vehicle for aluminum paint but may be used as a transparent finish coating for metal and wood where applicable.

3. COMPOSITION:

3.1 Product (By Weight):

| | min max |
|---|---|
| Resin | 34 - 37% |
| Solvent, AMS 3165 | 63 - 66% |
| Drier | See 3.1.2 |

3.1.1 Resin: Shall be of glyceryl phthalate type, containing not less than 30% by weight of phthalic anhydride. It shall be free from rosin and rosin derivatives.

3.1.2 Drier: Shall be free from lead and shall be used as required to obtain the specified drying and baking properties with a high degree of package stability.

4. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to Ø the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

4.1 General: Vehicle shall be clear, transparent, and homogeneous and shall contain no substance of known toxicity under normal conditions of use. Component ingredients shall be intimately mixed and processed in accordance with the best practice for high quality aircraft glyceryl phthalate vehicle to produce a product which is stable and not subject to abnormal change with age in a sealed container.

4.2 Viscosity: Shall be 0.50 - 1.00 poise absolute at 77 F (25 C).

4.3 Weight: Shall be not less than 7.3 lb per gal at 77 F (25 C).

4.4 Ash: Shall be not more than 0.1% by weight.

Ø 4.5 Flash Point: Shall be not lower than 80 F (27 C), determined in accordance with ASTM D56.

Ø 4.6 Acid Number: Shall be not higher than 8.0, determined in accordance with ASTM D1639.

4.7 Skinning and Livering: Shall be absent in a 1/4-filled closed container after standing for 1 week at room temperature.

4.8 When applied by brushing or spraying, vehicle shall be a freely working product with acceptable leveling properties. Recoating after 7 hr and again after 18 hr shall produce no film irregularity.

4.9 Product shall make a satisfactory vehicle for aluminum paint, suitable for either brush or spray application, when 1 gal of it is pigmented with 16 oz of aluminum paste conforming to the latest issue of AMS 3128 and, if necessary, reduced to the required consistency with aromatic petroleum solvent conforming to the latest issue of AMS 3165.

4.10 Aluminum pigmented vehicle shall be tested in accordance with Section 7 and shall satisfy the requirements specified therein.

5. TEST PANELS: Panels used for determination of properties specified in Sections 6 and 7 shall be bright-finish low-carbon steel sheet approximately 6 x 3 x 0.020 in. and shall have smooth edges and rounded corners. The sides to be coated shall be cleaned with fine steel wool and the panels then washed in clean toluene or other suitable volatile solvent and dried with clean cloths.

6. PROPERTIES OF CLEAR VEHICLE: Clear vehicle, when applied to test panels to produce dried films 0.0005 - 0.00075 in. thick, shall have the following properties:

6.1 Water Resistance: A coated panel, baked at 250 F ± 5 (121.1 C ± 2.8) for approximately 1.5 hr, shall withstand immersion in boiling water for 10 minutes. It shall show no checking, no blistering, no appreciable whitening, and only a very slight dulling when observed 5 min. after removal, and no whitening 15 min. after removal. The film on the immersed panel 3 hr after removal shall be equal in hardness, toughness, gloss, and anchorage to the film on a similarly prepared panel which has not been immersed.

6.2 Solvent Resistance: The film on a panel, baked at 250 F ± 5 (121.1 C ± 2.8) for approximately 1.5 hr and immersed in AMS 3165 solvent for 4 hr at room temperature, shall resist removal by rubbing with the fingers.

7. PROPERTIES OF PIGMENTED VEHICLE: Vehicle, when pigmented in proportion of approximately 16 oz of AMS 3128 paste per gallon of vehicle and, if necessary, reduced with AMS 3165 solvent to viscosity (approximately 1.0 poise absolute) suitable for application to test panels to produce dried films 0.0005 - 0.00075 in. thick, shall have the following properties.

7.1 A coated panel shall air dry to touch in not more than 3 hours. The film upon drying shall be free from streaks, blisters, silking, and other irregularities of surface.

7.2 Baking Properties:

7.2.1 The film on a coated panel, air-dried approximately 15 min. and baked at 300 F ± 5 (148.9 C ± 2.8) for approximately 1 hr, shall be hard, tough, smooth, lustrous, and free from all defects such as checking, wrinkling, and dulling.

7.2.2 The film on a coated panel, air-dried approximately 15 min. and baked at 400 F ± 5 (204.4 C ± 2.8) for approximately 4 hr, shall not discolor.

7.3 Flexibility: A coated panel, air-dried approximately 15 min. and baked at 400 F ± 5 (204.4 C ± 2.8) for approximately 4 hr, shall withstand bending rapidly through an angle of 180 deg around a 1/8 in. diameter at 32 F ± 2 (0 C ± 1.1). The film shall not crack or flake at the bend or loosen from the panel.

7.4 Coating Anchorage: A panel coated with pigmented vehicle over a primer shall show satisfactory anchorage of the top coat after air-drying approximately 18 hours. It shall be impossible to separate any of the top coat from the primer by means of a diagonally applied knife or razor blade.

7.5 Weather Resistance: Spray coats over primer on steel exposure panels shall be capable of withstanding exposure continuously, at an angle of 45 deg facing south, to weather at approximately 40 deg north latitude for a period of 1 yr without any evident difference in appearance, integrity, or protection afforded from the control product on panels similarly prepared and simultaneously exposed; determination of weather resistance shall not be required in routine inspection.