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# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.

29 West 39th Street

New York City

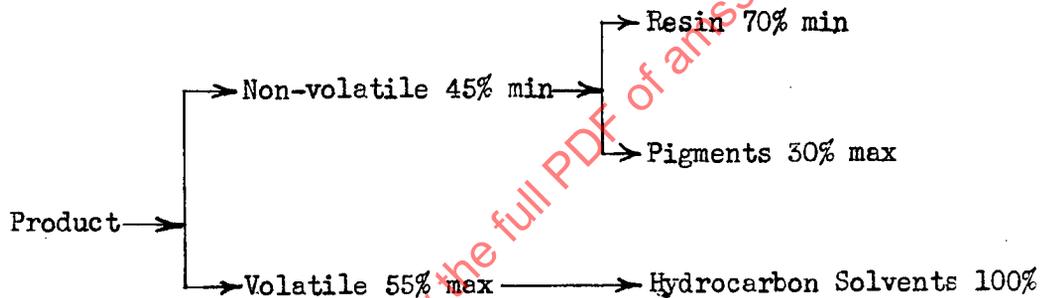
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## ENGINE GRAY ENAMEL GLYCERYL PHTHALATE

1. **ACKNOWLEDGMENT:** A vendor must mention this specification number and its last revision in all quotations and when acknowledging purchase orders.
2. **TYPE AND USE:** Gloss engine gray, as an exterior protective coating for metal and fabric, and also for marking purposes.
3. **COMPOSITION (by weight):**



4. **COMPONENTS:** (a) The resin shall be a glyceryl phthalate type, showing not less than 31% phthalic anhydride quantitative, free from rosin and rosin derivatives.

(b) The pigments shall consist of titanium oxide tinted with carbon, or lampblack, and any other pigment of permanent color as required to match the standard color. Antimony oxide may be substituted for titanium oxide up to 50% of the specified amount of the latter. The pigments shall be finely ground and free from floating or caking in the container.

(c) The drier shall be as required to obtain the specified air drying properties with a high degree of packaging stability.

(d) The volatile shall have the following distillation characteristics:

Initial Point	248°F min
50% Fraction	320°F min
End Point	404°F max

(e) The component ingredients shall be intimately assembled and processed as required to produce a product which is stable and not subject to abnormal change with age in a sealed container.

5. **QUALITY:** The finished product shall be uniform, homogeneous and free from bubbles. It shall be free from toxic ingredients. There shall be no trace of grit, rough particles or separation of pigments. Skinning shall be absent in a partly filled closed container after 48 hours.
6. **PHYSICAL PROPERTIES:** Coarse particles shall not exceed 0.1 per cent by weight retained on a No. 325 screen. The moisture content shall not exceed 0.1 per cent. The flash point shall not be less than 80°F. The viscosity at 77°F, as determined by A.S.T.M. Test Methods D115-39T, shall be not less than 50 centipoises absolute. The weight per gallon at 77°F shall be not less than 8.0 lb.

7. WORKING PROPERTIES: When applied by brushing or spraying, the material shall be a freely working product with acceptable leveling properties.
8. TESTS: The following tests shall be conducted on 1/32 inch thick 17ST aluminum alloy panels as rolled and degreased without etching, unless otherwise specified, and with the package material thinned to a viscosity of 100 centipoises absolute at 77°F with toluene.
- (a) Air Drying Properties:- A medium brush coat shall air dry to touch in not more than 1 hour and dry firm and hard in not more than 18 hours when applied over a standard primer. The film, upon drying, shall be free from streaks, blisters, silking or other irregularities of surface. When applied to a glass panel, the color and gloss shall match a previously approved standard.
- (b) Baking Properties:- Wrinkling and dulling shall be absent in a flow-out film air dried 15 minutes and baked at 300°F for 15 minutes. A flow-out film air dried 18 hours and then baked at 180°F for 2 hours shall be hard, tough, smooth and free from checking or other defects. The baked films shall show no appreciable discoloration.
- (1) Cold Cracking:- The film on the panel above which was air dried 18 hours and baked at 180°F shall withstand a bend test of 180° around a 3/16 inch rod at 32°F.
- (c) Anchorage:- A brush coat over baked primer shall show satisfactory anchorage of the top coat after drying hard. It shall be impossible to separate any of the top coat from the primer by means of a diagonally applied knife or razor blade.
- (d) Water Resistance (Cold):- A flow-out film air dried 48 hours, shall withstand immersion in water at room temperature for 24 hours. It shall show no checking, blistering, appreciable whitening and only a very slight dulling when observed 5 minutes after removal. After 3 hours air drying, the film on the immersed end shall be equal in hardness, toughness, gloss, and anchorage to the film which was not immersed.
- (e) Gasoline Resistance:- A flow-out film, air dried 48 hours, shall withstand immersion in gasoline at room temperature for 4 hours. The film, after being removed from the gasoline 24 hours, shall be equal in hardness, toughness, gloss and anchorage to the film similarly prepared but not subjected to the gasoline test.
- (f) Weather Resistance:- The weather resistance shall be equal to and the discoloration shall be not greater than that of a standard control product when tested on a comparative basis. There shall be no premature checking or cracking failure.
9. IDENTIFICATION: Each can or container shall bear a label giving the manufacturer's name and batch number, this specification number and name, date of manufacture, net quantity and directions for thinning.