AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 3135A
Superseding AMS 3135
Issued 6-15-59
Revised 9-30-66

# SILICONE RESIN COATING MATERIAL
## 400 F (204 C) Cure



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

2. APPLICATION: Primarily for use on chemically or electrochemically treated magnesium and aluminum alloy surfaces to improve the high temperature corrosion and abrasion resistance and the air flow characteristics. The coating may also be used on steel for improvement of corrosion resistance.

3. COMPOSITION:

3.1 Resin Coating, by weight:

| | |
|---|---|
| Resin Solids | 18 - 22% |
| Solvent | 78 - 82% |

3.1.1 Resin Solids: Shall be a thermosetting silicone material.

3.1.2 Solvent, by volume:

| | |
|---|---|
| Aromatics | 57% min |
| Olefins | 1% max |
| Paraffins | remainder |

4. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the Ø 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: Material shall be clear, transparent, homogeneous, and amber colored. It shall be free from bubbles. There shall be no trace of grit or rough particles. Material shall contain no substance of known toxicity under normal conditions of use. There shall be no seeding-out of resin material within 30 days of manufacture.

Ø 4.2 Viscosity at 77 F (25 C): Shall be 3 - 8 centipoises, ASTM D1346.

4.3 Specific Gravity at 77 F (25 C): Shall be 0.88 - 0.89.

Ø 4.4 Flash Point: Shall be not lower than 80 F (27 C), ASTM D56.

4.5 Skinning and Livering: Shall be absent in partially filled, closed containers, after standing 7 days.

4.6 Applicability: When applied by brushing, spraying, or dipping, the material shall be a freely working product with acceptable leveling properties. Recoating following air drying, to provide desirable final coat prior to curing at 400 F ± 10 (204.4 C ± 5.6), shall produce no film irregularity.

4.7 Coating Properties: Resin coating shall have properties as specified in 4.7.2 through 4.7.7 when Ø determined on test panels prepared as follows:

4.7.1 Test Panels: Shall be approximately 0.020 x 3.0 x 6.0 in. and shall have smooth edges and rounded corners.

4.7.1.1 Magnesium Alloy: Unless otherwise specified, panels shall be made from AMS 4375 or equivalent sheet. Panels shall be processed in accordance with the latest issue of either AMS 2475 or AMS 2476. Panels processed in accordance with AMS 2475 shall have 2 coats of resin applied and those processed in accordance with AMS 2476 shall have 3 coats of resin applied.

4.7.1.2 Coating Application: Coating shall be applied by spraying a sufficient amount of the resin to wet the surface completely. Application shall be so controlled that the coating will be continuous, uniform, and free from bubbles, heavy edges, of other surface imperfections. Each coat shall be air dried for not less than 15 minutes.

4.7.1.3 Curing: After air drying the final coat, the panels shall be heated at 400 F ± 10 (204.4 C ± 5.6) for 4 hours.

4.7.2 Surface Appearance: The coating, after curing, shall be transparent, smooth, uniform, and free from craters, pin holes, sags, runs, bubbles, heavy edges, and other surface imperfections affecting its continuity. The coating shall retain a distinct coloration after the curing cycle.

4.7.3 Heat Resistance: Coated panels shall withstand exposure to air at 600 F ± 10 (315.6 C ± 5.6) for 48 hr without evidence of chalking, blistering, or loss of adhesion.

4.7.4 Corrosion Resistance: Coated panels, after heat resistance test as in 4.7.3 shall withstand 200 hr Ø exposure to salt spray without evidence of corrosion, when tested in accordance with ASTM B117.

4.7.5 Fuel Resistance: Coated panels shall withstand immersion for 100 hr in ASTM Reference Fuel B Ø (ASTM D471) at room temperature without appreciable softening or other evidence of coating deterioration.

4.7.6 Oil Resistance: Coated panels shall withstand immersion for 100 hr in ASTM Service Fluid No. 101 Ø (ASTM D471) at 300 F ± 5 (148.9 C ± 2.8) without appreciable softening of the coating. Slight discoloration of the coating is not objectionable.

4.7.7 Flexibility: Unless otherwise specified, a coated magnesium panel shall be used to evaluate coating flexibility. The coating shall not crack, loosen from the panel, or flake at the bend when the panel is bent rapidly at room temperature through an angle of 180 deg around a diameter equal to 6 times the thickness of the uncoated panel.

5. REPORTS: Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the composition and the results of tests on each batch of material to determine conformance to this specification. This report shall include the purchase order number, material specification number, formula and/or batch number, date of manufacture, and quantity.

6. PACKAGING: Unless otherwise specified, material shall be supplied in 5 gal metal containers with sealed openings. Interior of containers shall be free from corrosion and, if treated to prevent corrosion, shall be coated with a material unaffected by the solvent action of the contents.

7. IDENTIFICATION: Each container shall be legibly marked to show this specification number and title, vendor's name or trade mark, formula and/or batch number, date of manufacture, and quantity.

8. APPROVAL:

8.1 To assure adequate performance characteristics, material shall be approved by purchaser before material for production use is supplied, unless such approval be waived. Results of tests on production material shall be essentially equivalent to those on the approved sample.