Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

AEROSPACE MATERIAL SPECIFICATION

AMS 3145

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Revised

PAINT, MARKING, EPOXY

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

2. FORM: Two-component colored systems composed of a resin and a miscible hardener supplied in kit form.

3. APPLICATION: Primarily for identification marking of parts and equipment exposed to the temperature range -55 to +150 C (-67 to +302 F) where various colors are needed. Systems produce tile-like compounds with good hardness, moisture and solvent resistance, and adhesion to metallic surfaces when properly cured.

4. MATERIAL: Shall be a thermosetting epoxy compound.

5. TECHNICAL REQUIREMENTS:

5.1 General:

5.1.1 Pot Life: The pot life of a mixture of 100 parts ±1 by weight of resin and 100 parts ±1 by weight of hardener shall be not less than 6 hours.

5.1.2 Storage: The material shall meet the specified technical requirements at any time up to 180 days from the date of receipt by purchaser when stored in airtight containers at 10 - 30 C (50 - 86 F) and relative humidity not higher than 75%.

5.2 Properties: The material shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable:

5.2.1 Uncured Resin:

Color	Specific Gravity (1)	Viscosity, cp (2)
White	1.46 ± 0.05	1500 ± 500
Black	1.05 ± 0.03	3000 ± 1000
Yellow	1.53 ± 0.07	800 ± 200
Red	1.07 ± 0.04	800 ± 200
Green	1.22 ± 0.10	800 ± 200
Blue	1.44 ± 0.10	800 ± 200
Gray	1.46 ± 0.07	800 ± 200
Silver	1.13 ± 0.05	800 ± 200
Brown	1.08 ± 0.05	800 ± 200
Orange	1.11 ± 0.11	800 ± 200

5.2.2 Hardener:

Color	Specific Gravity (1)	Viscosity, cp (2)
White	0.91 ± 0.03	10 ± 4
Other Colors	0.91 ± 0.03	12 ± 4

(1) Specific Gravity: Shall be determined in accordance with ASTM D1638, Method A.

(2) Viscosity: Shall be determined at 25 C ± 1 (77 F ± 1.8) in accordance with ASTM D1638.

5.3 Cured Resin: The mixture of 5.1.1 shall cure within 2 hr at 60 C ± 3 (140F ± 5.4), or within 24 hr at 25 C ± 5 (77 F ± 9) to exhibit the following properties:

5.3.1 Sward Hardness: Shall be as shown below, determined in accordance with ASTM D2134, without conditioning:

Color System	Sward Hardness
White	38 ± 5
Black	40 ± 5
Yellow	40 ± 5
Red	40 ± 5
Green	21 ± 5
Blue	16 ± 4
Gray	25 ± 5
Silver	12 ± 4
Brown	37 ± 5
Orange	42 ± 5

5.3.2 Surface Adhesion: Five aluminum or aluminum alloy panels, 3 in. wide x 6 in. long and not less than 0.020 in. thick with edges smooth and uniformly rounded, shall be cleaned by vapor degreasing or washing with a chlorinated solvent, coated with the resin-hardener mixture to a film thickness of 0.005 inch, and cured as in 5.3. The cured specimens shall be heated for 30 min. in an oven controlled at 150 C ± 3 (302F ± 5.4) and then plunged into an alcohol-dry ice bath at -55 C ± 3 (-67F ± 5.4) and left for 10 minutes. After each cycle, the alcohol shall be wiped off and the cycling shall continue until the specimens fail or 10 cycles have been completed. Specimens which show cracks, checks, blisters, or other defects in 10 cycles or less shall be considered to have failed.

6. QUALITY: The product shall be uniform in quality and condition, clean homogeneous, and free from foreign materials and imperfections detrimental to fabrication, appearance, or performance of parts.

7. REPORTS:

7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, and quantity.