SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3145C

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Noncurrent	FEB 1998
Reaf. Noncur.	FEB 2004

Superseding AMS 3145B

Paint, Marking
Epoxy

NONCURRENT NOTICE

This specification has been declared “NONCURRENT” by the Aerospace Materials Division, SAE, as of February 1998. It is recommended, therefore, that this specification not be specified for new designs.

“NONCURRENT” refers to those materials which have previously been widely used and which may be required on some existing designs in the future. The Aerospace Materials Division, however, does not recommend these as standard materials for future use in new designs. Each of these “NONCURRENT” specifications is available from SAE upon request.

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1. SCOPE:

1.1 Type:

This specification covers two-component colored systems composed of a resin and a miscible hardener supplied in kit form.

1.2 Application:

Primarily for identification marking of parts and equipment exposed to temperatures from -55° to +150°C (-65° to +300°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.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications:

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D1638 - Testing Urethane Foam Isocyanate Raw Materials
ASTM D2134 - Softening of Organic Coatings by Plastic Compositions
ASTM D3359 - Measuring Adhesion by Tape Test

2.3 U.S. Government Publications:

Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Specifications:

PPP-P-1892 - Paint, Varnish, Lacquer, and Related Materials, Packaging, Packing, and Marking of

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall be a thermosetting epoxy compound.

3.1.1 Storage Life: The components and the mixed product shall meet the requirements of 3.2 at any time up to one year from date of receipt by purchaser when stored in airtight containers at 10° - 30°C (50° - 85°F).

3.1.2 Pot Life: The pot life of a mixture of 100 parts + 1 by weight of resin and 100 parts ± 1 by weight of hardener, defined as the time to produce double the initial viscosity, shall be not less than 6 hr at 25°C ± 1 (77°F ± 2).

3.2 Properties:

The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified ASTM methods:

3.2.1 Uncured Resin:

3.2.1.1 Specific Gravity: Shall be as specified in Table I, determined in accordance with ASTM D1638, Method A.

3.2.1.2 Viscosity: Shall be as specified in Table I, determined in accordance with ASTM D1638 at 25°C ± 1 (77°F ± 2).

3.2.1.3 Color: Shall be as ordered, selected from those specified in Table I.

3.2.2 Hardener:

3.2.2.1 Specific Gravity: Shall be as specified in Table II, determined in accordance with ASTM D1638, Method A.

3.2.2.2 Viscosity: Shall be as specified in Table II, determined in accordance with ASTM D1638 at 25°C ± 1 (77°F ± 2).

3.2.3 Cured Resin: The mixture of 3.1.2 shall cure within 2 hr at 60°C ± 3 (140°F ± 5), or within 24 hr at 25°C ± 5 (77°F ± 9) and exhibit the properties specified in 3.2.3.1 and 3.2.3.2.

3.2.3.1 Sward Hardness: Shall be as specified in Table III, determined in accordance with ASTM D2134, without conditioning.

3.2.3.2 Surface Adhesion: Shall be 4A or better, determined in accordance with ASTM D3359, Method A, on panels prepared as in 3.2.3.2.1.

3.2.3.2.1 Panels shall be of aluminum or aluminum alloy, approximately 0.020 x 6 x 3 in. (0.5 x 150 x 75 mm) and having smooth edges and rounded corners. Panels shall be cleaned by vapor degreasing or washing with a chlorinated solvent, coated with resin-hardener mixture to a film thickness of approximately 0.005 in. (0.12 mm), and cured as in 3.2.3.

3.3 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, clean, homogeneous, and free from foreign materials and from imperfections detrimental to usage of the product.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.5. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classificiation of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to requirements for pot life (3.1.2), specific gravity (3.2.1.1 and 3.2.2.1), viscosity (3.2.1.2 and 3.2.2.2), Sward hardness (3.2.3.1), and surface adhesion (3.2.3.2) are classified as acceptance tests and shall be performed on each lot.

4.2.2 Preproduction Tests: Tests to determine conformance to all technical requirements of this specification are classified as preproduction tests and shall be performed prior to or on the initial shipment of the product to a purchaser, when a change in material, processing, or both requires reapproval, and when purchaser deems confirmatory testing to be required.

4.2.2.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, the contracting officer, or the request for procurement.

4.3 Sampling:

Shall be as follows:

4.3.1 For Acceptance Tests: Sufficient paint shall be taken at random from each lot to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A lot shall be all paint of the same color produced in a single production run from the same batches of raw materials. An inspection lot shall not exceed 100 gal (380 L). A lot may be packaged in small quantities under the basic lot approval provided lot identification is maintained.

4.3.1.2 When a statistical sampling plan and acceptance quality level (AQL) have been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.5 shall state that such plan was used.

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor.

4.4 Approval:

4.4.1 Paint shall be approved by purchaser before paint for production use is supplied, unless such approval be waived by purchaser. Results of tests on production paint shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production paint which are essentially the same as those used on the approved sample paint. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material, processing, or both and, when requested, sample paint. Production paint made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Reports:

The vendor of paint shall furnish with each shipment a report showing the results of tests to determine conformance to the acceptance test requirements and stating that the paint conforms to the other technical requirements of this specification. This report shall include the purchase order number, AMS 3145B, formula number, lot number, color, and quantity.

4.6 Resampling and Retesting:

If any sample or panel used in the above tests fails to meet the specified requirements, disposition of the paint may be based on the results of testing three additional samples or panels for each original nonconforming sample or panel. Failure of any retest sample or panel to meet the specified requirements shall be cause for rejection of the paint represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 Paint shall be supplied in kit form as a base resin formulation plus a separate container of hardener.

5.1.2 Each container shall be legibly marked with not less than AMS 3145B, manufacturer's identification, formula number, lot number, color, date of manufacture, and quantity. In addition, the label shall indicate that the paint should be stored at not higher than 30°C (85°F).