

AEROSPACE MATERIAL SPECIFICATION

SAE AMS3122F

Issued	1948-07
Revised	1984-01
Reaffirmed	1994-04
Noncurrent	1998-02
Reaf. Noncur.	2004-02
Cancelled	2009-06

Superseding AMS3122E

Enamel, Phenolic
Black Baking

RATIONALE

AMS3122F has been designated cancelled.

CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of June 2009. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications indicating that it has been "CANCELLED".

Cancelled specifications are available from SAE.

SAENORM.COM : Click to view the full PDF of AMS3122F

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2009 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: <http://www.sae.org>

**SAE values your input. To provide feedback
on this Technical Report, please visit**
<http://www.sae.org/technical/standards/AMS3122F>

SAE Aerospace <i>An SAE International Group</i>	AEROSPACE MATERIAL SPECIFICATION	SAE	AMS 3122E										
<table><tr><td>Issued</td><td>JUL 1948</td></tr><tr><td>Revised</td><td>JAN 1984</td></tr><tr><td>Reaffirmed</td><td>APR 1994</td></tr><tr><td>Noncurrent</td><td>FEB 1998</td></tr><tr><td>Reaf. Noncur.</td><td>FEB 2004</td></tr><tr><td colspan="2">Superseding AMS 3122D</td></tr></table>		Issued	JUL 1948	Revised	JAN 1984	Reaffirmed	APR 1994	Noncurrent	FEB 1998	Reaf. Noncur.	FEB 2004	Superseding AMS 3122D	
Issued	JUL 1948												
Revised	JAN 1984												
Reaffirmed	APR 1994												
Noncurrent	FEB 1998												
Reaf. Noncur.	FEB 2004												
Superseding AMS 3122D													
Enamel, Phenolic Black Baking													
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.													

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2004 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
 Tel: 724-776-4970 (outside USA)
 Fax: 724-776-0790
 Email: custsvc@sae.org
SAE WEB ADDRESS: http://www.sae.org

AMS 3122E**SAE****AMS 3122E****1. SCOPE:****1.1 Type:**

This specification covers a semigloss black baking enamel based on a phenolic resin.

1.2 Application:

Primarily as a coating for metal surfaces exposed to corrosive conditions.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) 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
AMS 2825 - Material Safety Data Sheets

2.2 ASTM Publications:

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

ASTM D56 - Flash Point by Tag Closed Tester
ASTM D185 - Coarse Particles in Pigments, Pastes, and Paints
ASTM D445 - Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
ASTM D1200 - Viscosity of Paints, Varnishes, and Laquers by Ford Viscosity Cup

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

AMS 3122E**SAE****AMS 3122E****3. TECHNICAL REQUIREMENTS:****3.1 Composition:****3.1.1 Enamel (by weight):**

	min	max
Nonvolatile	50%	--
Volatile	--	50%

3.1.1.2 Nonvolatile:

	min	max
Resin	74	75%
Pigment	25	26%

3.1.1.2.1 Resin: Shall be a thermosetting phenolic type with softening agents added; it shall be free from rosin, rosin derivatives, oils, and cellulose derivatives.

3.1.1.2.2 Pigment: Shall consist of carbon black and animal black in proportions required to produce an enamel meeting the requirements of 3.2.2.2.

3.1.1.3 Volatile: Shall be optional with the manufacturer but shall meet applicable air pollution control regulations.

3.2 Properties:

Enamel shall conform to the following requirements:

3.2.1 Product Properties:

3.2.1.1 Viscosity: Shall be not less than 4 poises (0.4 Pa·s) at 77°F (25°C) not less than 24 hr after manufacture, determined in accordance with ASTM D445.

3.2.1.2 Flash Point: Shall be not lower than 60°F (15°C), determined in accordance with ASTM D56.

3.2.1.3 Skinning and Livering: Shall be absent in 1/4-filled closed containers after standing at least 7 days.

3.2.1.4 Coarse Particles: Not more than 0.1% by weight of the enamel shall be retained on a No. 325 (45 μm) sieve, determined in accordance with ASTM D185.

AMS 3122E**SAE****AMS 3122E****3.2.2 Applied Film Properties:**

- 3.2.2.1 Leveling: Enamel, applied by brushing, spraying, or dipping, shall be a freely working product having leveling properties acceptable to purchaser.
- 3.2.2.2 Color and Gloss: A coat, air-dried for not less than 30 min. and baked for 1 hr $\pm$ 0.1 at 325°F $\pm$ 5 (165°C $\pm$ 3), shall closely match the color and gloss of the standard panel specified by purchaser.
- 3.2.3 Cured Film Properties: Shall be as specified in 3.2.3.1, 3.2.3.2, and 3.2.3.3, determined on panels prepared as in 4.5.1.
- 3.2.3.1 Appearance: Film shall be firm, hard, and free from streaks, blisters, silking, and other surface irregularities.
- 3.2.3.2 Adhesion: Film shall not peel when a panel is bent at 32°F $\pm$ 2 (0°C $\pm$ 1) through an angle of 180 deg around a diameter equal to 20 times the nominal thickness of the panel. Cracking of film on bent portion of panel will be acceptable.
- 3.2.3.3 Solvent Resistance: Film, immersed at room temperature for 2 hr $\pm$ 0.2 in a solution of 50% denatured alcohol and 50% acetone, shall not be softened or removed. Dulling or change in color will be acceptable.

3.3 Quality:

Enamel, as received by purchaser, shall be of uniform consistency and free from bubbles, grit, rough particles, floating or caked pigments, and ingredients of respiratory toxicity under normal conditions of use. Component ingredients shall be intimately mixed and processed as required to produce a product which is stable and not subject to abnormal change with age in sealed containers.

4. QUALITY ASSURANCE PROVISIONS:**4.1 Responsibility for Inspection:**

The vendor of enamel 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 4.6. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the enamel conforms to the requirements of this specification.

4.2 Classification of Tests:

- 4.2.1 Acceptance Tests: Tests to determine conformance to requirements for composition (3.1), viscosity (3.2.1.1), color and gloss (3.2.2.2), appearance (3.2.3.1), adhesion (3.2.3.2), and solvent resistance (3.2.3.3) are classified as acceptance tests and shall be performed on each lot.

AMS 3122E**SAE****AMS 3122E**

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 enamel to a purchaser, when a change in material or processing, or both, requires reapproval as in 4.4.2, 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 enamel shall be taken from each lot to perform the following tests:

Requirement	Reference Paragraph	Number of Determinations
Composition	3.1	1
Viscosity	3.2.1.1	1
Color and Gloss	3.2.2.2	2
Appearance	3.2.3.1	2 (See 4.3.1.1)
Adhesion	3.2.3.2	2
Solvent Resistance	3.2.3.3	2

4.3.1.1 This requirement is to be determined on the panels prepared for adhesion or solvent resistance tests.

4.3.1.2 A lot shall be all enamel produced in one continuous manufacturing operation from the same lots of raw materials and presented for vendor's inspection at one time.

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

4.4 Approval:

4.4.1 Enamel shall be approved by purchaser before enamel for production use is supplied, unless such approval be waived by purchaser. Results of tests on production enamel 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 enamel which are essentially the same as those used on the approved sample enamel. If necessary to make any change in ingredients or in manufacturing procedures or processing, vendor shall submit for reapproval a statement of the proposed changes in material or processing, or both, and, when requested, sample enamel. Production enamel made by the revised procedure shall not be shipped prior to receipt of reapproval.