



AEROSPACE MATERIAL SPECIFICATION

AMS-C-27725™

REV. D

Issued 1999-10
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Superseding AMS-C-27725C

(R) Coating, Corrosion Preventative,
for Aircraft Integral Fuel Tanks
for Use to 250 °F (121 °C)

RATIONALE

This revision is a 5-year update which incorporates the G-8 committee standard specification format, clarifies certain test requirements, and adds a DiEGME resistant grade along with appropriate DiEGME resistance qualification test methods.

1. SCOPE

1.1 Form

This specification establishes requirements for three types of corrosion preventative coatings for protection of aircraft integral fuel tanks.

1.2 Application

The coating materials covered by this specification are typically applied to the interior of aircraft integral fuel tanks to protect against corrosion from fuel contaminants, but usage is not limited to such applications. They are suitable for use in a service temperature range from -65 to +250 °F (-54 to +121 °C).

1.3 Classification

The coating materials covered by this specification shall be classified as follows:

- Type 1 - A two-component polyurethane coating with less than 420 g/l Volatile Organic Compound (VOC) content
- Type 2 - A two-component polyurethane coating with less than 720 g/l VOC content
- Type 3 - A chrome-free coating with less than 420 g/l V.O.C. content

Grade 1 - Standard

Grade 2 - Diethylene Glycol Monomethyl Ether (DiEGME) resistant

Note: If no type is specified, Type 2 is the default classification. If no grade is specified, Grade 1 is the default classification.

1.4 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

| | |
|---------|---|
| AMS1640 | Corrosion Removing Compound, for Aircraft Surfaces |
| AMS2629 | Fluid, Jet Reference |
| AMS3276 | Sealing Compound, Integral Fuel Tanks and General Purpose, Intermittent Use to 360 °F (182 °C) |
| AMS3819 | Cloths, Cleaning, for Aircraft Primary and Secondary Structural Surfaces |
| AMS4045 | Aluminum Alloy Sheet and Plate, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (7075; -T6 Sheet, -T651 Plate) Solution and Precipitation Heat Treated |
| AS9100 | Quality Systems - Aerospace - Requirements |

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

| | |
|---------------|---|
| ASTM B36/B36M | Brass Plate, Sheet, Strip and Rolled Bar |
| ASTM D130 | Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test |
| ASTM D257 | DC Resistance or Conductance of Insulating Materials |
| ASTM D740 | Standard Specification for Methyl Ethyl Ketone |
| ASTM D1200 | Viscosity by Ford Viscosity Cup |
| ASTM D1353 | Nonvolatile Material in Volatile Solvents for Use in Paint, Varnish, Lacquer and Related Products |
| ASTM D1475 | Density of Liquid Coatings, Inks, and Related Products |
| ASTM D1974 | Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes |
| ASTM D3330 | Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape |
| ASTM D3335 | Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy |
| ASTM D3359 | Standard Test Methods for Measuring Adhesion by Tape Test |
| ASTM D3363 | Standard Test Method for Film Hardness by Pencil Test |
| ASTM D3718 | Standard Test Method for Low Concentrations of Chromium in Paint by Atomic Absorption Spectroscopy |
| ASTM D3759 | Standard Test Method for Breaking Strength and Elongation of Pressure-Sensitive Tape |

ASTM D3960 Volatile Organic Compound (VOC) Content of Paint and Related Coatings

ASTM D4171 Standard Specification for Fuel System Icing Inhibitors

2.3 U.S. Government Publications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

FED-STD-791 Lubricants, Liquid Fuels, and Related Products, Methods of Testing

MIL-A-8625 Anodic Coatings for Aluminum and Aluminum Alloys

MIL-DTL-5541 Chemical Conversion Coatings on Aluminum and Aluminum Alloys

MIL-DTL-81706 Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys

MIL-PRF-23699 Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code 0-156

MIL-PRF-83282 Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft

MIL-PRF-85570 Cleaning Compounds, Aircraft, Exterior

MIL-PRF-87937 Cleaning Compound, Aerospace Equipment

2.4 PRI Publications

Available from Performance Review Institute, 161 Thorn Hill Road, Warrendale, PA 15086-7527, Tel: 724-772-1616, www.pri-network.org.

PD2000 Procedures for an Industry Qualified Product Management Process

PD2001 Manufacturer Request for Product Approval and Qualification Process

PRI QPL-AMS-C-27725 Products Qualified Under AMS-C-27725

2.5 ANSI Accredited Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ANSI Z400.1 Material Safety Data Sheets

ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

3. TECHNICAL REQUIREMENTS

3.1 Materials

The formulation chemistry for Types 1 and 2 shall be polyurethane with curing agents, thinners, and additives suitable for various application methods including brushing, dipping, and spraying. The formulation chemistry for Type 3 coatings is not specified, providing the material will meet the performance requirements set forth in this specification (see Section 3) and is suitable for various application methods including brushing, dipping, and spraying.