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(Project 8030-0826)

NOT MEASUREMENT SENSITIVE

MIL-PRF-81309F

SUPERSEDING
MIL-C-81309E
31 March 1993

PERFORMANCE SPECIFICATION

CORROSION PREVENTIVE COMPOUNDS, WATER DISPLACING, ULTRA-THIN FILM

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for two types and two classes of ultra-thin film, water displacing, corrosion preventive compounds which may be applied by dipping, spraying, brushing or by spraying from self-pressurized containers (see 6.1).

1.2 Classification. The compounds shall be furnished in the following types, classes, and propellant grades as specified (see 6.2c).

Type II - Soft film (General Purpose Grade).

Class 1 - Bulk container (brush, dip or spray application).

Class 2 - Self-pressurized container (for spray application).

a Grade 134a - Hydrofluorocarbon (HFC) propellant.

b Grade CO₂ - Carbon dioxide (CO₂) propellant.

Type III - Soft film (Avionic grade) See appendix A.

Class 1 - Bulk container (brush, dip or spray application).

Class 2 - Self-pressurized container (for spray application).

a Grade 134a - Hydrofluorocarbon (HFC) propellant.

b Grade CO₂ - Carbon dioxide (CO₂) propellant.

1.3 Part number. Specification part numbers for items described in this specification shall be designated as shown in 6.8.

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 491000B120-3, Highway 547, Lakehurst, NJ, 08733-5100 or emailed to Tom.Omara@navy.mil. Since contact information can change you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

SPECIFICATIONS

FEDERAL

- AA-51126 - Anodes, Cadmium.
- CCC-C-46 - Cloth, Cleaning, Non-Woven Fabric
- PPP-C-96 - Can, Metal, 28 Gage and Lighter

DEPARTMENT OF DEFENSE

- MIL-PRF-680 - Degreasing Solvent
- MIL-W-5086 - Wire, Electrical, Polyvinyl Chloride Insulated, Copper or Copper Alloy
- MIL-PRF-5425 - Plastic Sheet, Acrylic, Heat Resistant
- MIL-C-5541 - Chemical Conversion Coatings on Aluminum and Aluminum Alloys
- MIL-PRF-680 - Degreasing Solvent
- MIL-A-18001 - Anode, Sacrificial Zinc, Alloy
- MIL-P-23377 - Primer Coatings, Epoxy, High Solids
- MIL-PRF-32033 - Lubricating Oil, General Purpose, Preservative (Water-Displacing Low Temperature)

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- MIL-I-46058 - Insulating Compound, Electrical (For Coating Printed Circuit Assemblies)
- MIL-W-81044 - Wire, Electrical Cross linked Polyalkene Cross linked Alkane-imide Polymer, or Polyethylene Insulated, Copper or Copper Alloy
- MIL-W-81381/11 - Wire, Electric, Fluorocarbon/polyimide Insulated, Medium Weight, Silver Coated Copper Conductor, 600 Volts, 200 Degrees C Nominal 8.4 or 15.4 Mil Wall
- MIL-W-81822/6 - Wire, Electrical, Solderless Wrap, Extruded Polytetrafluoroethylene (PTFE) Insulation, Silver coated Solid Conductor
- MIL-C-85285 - Coating, Polyurethane, High-Solids
- MIL-PRF-85570 - Cleaning Compounds, Aircraft, Exterior
- MIL-L-87177 - Lubricants, Corrosion Preventive Compound, Water Displacing, Synthetic

STANDARDS

FEDERAL

- FED-STD-313 - Material Safety Data, Transport Data and Disposal Data for Hazardous Materials Furnished to Government Activities

MILITARY

- MIL-STD-290 - Packaging of Petroleum and Related Products
- MS3112 - Connectors, Receptacle, Electric, Series 1, Box Mounting Flange, Bayonet Coupling, Solder Contact
- MS3116 - Connector, Plug, Electric, Series 1 Solder Type, Straight, Bayonet Coupling

(Copies of these documents are available on line at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

CODE OF FEDERAL REGULATIONS

DEPARTMENT OF LABOR

- 29 CFR 1910 - Occupational Safety and Health Standards - Hazard Communications

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APPENDIX A

ELECTRONICS LUBRICANT EFFECTIVENESS

10. SCOPE

10.1 Scope. This appendix establishes the requirements and test methods for selection of effective corrosion preventive lubricants for use on electrical and electronic contacts and connectors. This appendix is a mandatory part of this specification for Type III products.

10.2 Significance. Thin film corrosion and wear of contacts and connectors can cause electronic equipment malfunctions ranging from intermittent glitches to hard failures. Lubrication of contact points can reduce the mechanical wear of insertion and withdrawal of electrical connectors. In addition, lubricants can reduce wear of mated connector pins or contact points in a vibrating service environment. Finally, corrosion inhibiting lubricants can prevent the formation of non-conductive surface oxides which interfere with electrical continuity.

20. APPLICABLE DOCUMENTS

20.1 Department of Defense

MIL-I-46058 - Insulating Compound, Electrical (For Coating Printed Circuit Assemblies)

(Copies of these documents are available on line at <http://assist.daps.dla.mil/quicksearch/> or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

20.2 Non-Government publications.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-B539 - Standard Test Method For Measuring Contact Resistance of Electrical Connections (Static Contacts)
ASTM-B735 - Standard Test Method For Porosity in Gold Coatings on Metal Substrates by Nitric Acid Vapor
ASTM-B741 - Standard Test Method For Porosity in Gold Coatings on Metal Substrates by Paper Electrography
ASTM-B799 - Standard Test Method For Porosity in Gold and Palladium Coatings by Sulfurous Acid/Sulfur-Dioxide Vapor

(Copies of these documents are available on line at www.astm.org or from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-