Downloaded from http://www.everyspec.com

NOT MEASUREMENT SENSITIVE

MIL-PRF-22019D
31 August 1998
SUPERSEDING
MIL-B-22019C
8 January 1974

PERFORMANCE SPECIFICATION

BARRIER MATERIALS, TRANSPARENT, FLEXIBLE, SEALABLE, VOLATILE CORROSION INHIBITOR TREATED

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

1. SCOPE

1.1 Scope. This specification establishes the requirements for heat or pressure sealable, transparent, flexible barrier material treated with a volatile corrosion inhibitor (VCI) for use in military packaging (see 6.1).

1.2 Classification. Barrier materials are furnished in the following types.

Type I - Heat-sealable
Type II - Pressure (cold) sealable

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.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 414100B120-3, Highway 547, Lakehurst, NJ 08733-5100, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 8135
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Downloaded from http://www.everyspec.com

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 listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

A-A-2904 - Thinner, Paint, Mineral Spirits, Regular and Odorless

DEPARTMENT OF DEFENSE

MIL-PRF-131 - Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat-Sealable

STANDARDS

FEDERAL

FED-STD-101 - Test Procedures for Packaging Materials
FED-STD-595 - Colors Used in Government Procurement

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)

ASQC-Z1.4 - Procedures, Sampling and Tables for Inspection by Attributes (DoD adopted)

(Application for copies should be addressed to the American Society for Quality Control, P.O. Box 3005, 611 East Wisconsin Avenue, Milwaukee, WI 53201-4606.)

Downloaded from http://www.everyspec.com

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-B152	-	Copper Sheet, Strip, Plate, and Rolled Bar (DoD adopted)
ASTM-D130	-	Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test Detection of (DoD adopted)
ASTM-D471	-	Rubber Property – Effect of Liquids (DoD adopted)
ASTM-D689	-	Paper, Internal Tearing Resistance (DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. The treated barrier materials furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4.2 and 6.4).

3.2 Material. Treated barrier materials shall be made from such materials and by such processes as to ensure compliance with the performance requirements of this specification.

3.2.1 Toxicity. The treated barrier shall have no adverse effect on the health of personnel.

3.3 Construction. Barrier materials shall be constructed in any manner that satisfies the performance requirements of this specification.

3.3.1 Type I. Barrier materials shall be heat-sealable and treated with a VCI.

3.3.2 Type II. Barrier materials shall be coated on one side with a cohesive substance, treated with a VCI and shall be capable of being cold sealed by pressing coated sides together.

3.4 Form. Type I treated barrier material shall be furnished in rolls or flat cut sheets as specified in the contract or delivery order (see 6.2). Type II treated barrier material shall be furnished in rolls only.

3.4.1 Rolls. Unless otherwise specified (see 6.2), the width of roll material shall be 36 inches, with a tolerance of plus or minus 1/8 inch. The average length of roll material shall be not less than 200 yards. The length of any individual roll shall be not less than 195 yards. The roll material shall be uniformly wound on nonreturnable cores. The core's inside diameter shall be not less than 3 inches, with a tolerance of plus 1/8 inch. The length of the core shall be equal to the

Downloaded from http://www.everyspec.com

width of the roll material, with a tolerance of plus 1/8 inch. The core shall be rigid to prevent distortion of the roll during use and shipment conditions. Each roll shall be restrained to prevent unwinding and shall be wrapped in at least one thickness of MIL-PRF-131, class 1 barrier material (see 4.3.2.2 and 4.3.2.3).

3.4.2 Sheets. When flat cut sheets are specified, the length and width shall be as specified (see 6.2). If the length and width tolerances for cut sheets are not specified, the tolerance for each shall be plus or minus 1/8 inch (see 4.3.2.3). Flat cut sheets shall be evenly stacked (see 4.3.2.2).

3.5 Sealing. The material shall exhibit no delamination of the sealed area when sealed according to the manufacturer's recommended conditions (see 4.5). Each roll or package (flat cuts) of barrier material shall include a tag secured to the core of rolls, or sheet inserted in the package of sheets with the sealing instructions for sealing type I material and for heat-sealing type II material on rotary, band, and jaw-type sealing equipment. The tag or sheet shall be visible upon opening the unit package (see 4.3.2.2).

3.6 Identification of material. The specification number, type, manufacturer's designation, month and year of manufacture, lot number, and the notation "Seal Other Side" shall be clearly and legibly marked using water-resistant ink on the backing surface of the material. The color of the markings for type I shall be yellow conforming to FED-STD-595, Color No. 33793. The color of the markings for type II shall be green conforming to FED-STD-595, Color No. 34138. The identification shall appear in continuous rows of constantly recurring symbols in the machine direction from one end of the sheet to the other (see 4.3.2.1). The separation between parallel rows of recurring symbols shall be not greater than 2 1/2 inches. The letter and the figures shall not be less than 1/16 inch high (see 4.3.2.3). Printing shall be alternating in accordance with the following example:

_____	_____	_____	____	_____	Seal other side
Manufacturer's Designation	Date of Manufacture	Specification No.	Type	Lot No.	

_____	____	_____	Seal other side	_____	_____
Specification No	Type	Lot No		Manufacturer's Designation	Date of Manufacture

3.7 Performance requirements. The performance of the barrier materials shall conform to the requirements specified in table I, when tested as specified in 4.6.

3.8 Workmanship. The appearance of finished barrier materials that are coated or impregnated with a VCI shall not contain any voids in the VCI coating substrates or a granular surface (see 4.3.2.2). The barrier material shall be clean and free from holes, tears, cuts, sharp creases, wrinkles, or other imperfections. The barrier material shall be cut and trimmed of any selvage (see 4.3.2.1).

Downloaded from http://www.everyspec.com

TABLE I. Performance requirements.

Characteristics	Type I and Type II Requirements		Test Paragraph Reference
Seam Strength 1. As received material sealed & tested at room temperature (separation-inches) 2. Sealed after aging at 160°F for 12 days and tested at room temperature (separation-inches)	50 % (max) 50 % (max)		4.6.2
Seam and material water resistance	Seams and barrier shall have no leakage		4.6.3
Puncture resistance	10 lb (min)	6 lb (min)	4.6.1
Compatibility with copper	No pitting, etching or discoloration of vapor exposed copper surface, discount attacks within 1/16 inch of specimen		4.6.4
Vapor inhibitor ability (VIA)	No corrosion, etching, or pitting of the steel panel's polished surface		4.6.1
Vapor inhibitor ability (VIA) after exhaustion	No corrosion, etching, or pitting of the steel panel's polished surface		4.6.1
Contact Corrosivity	No corrosion, etching, or pitting		4.6.1
Low temperature flexibility	No delamination, cracks, or tears		4.6.6
Blocking resistance	No blocking, delamination, or rupture		4.6.1
Tearing strength	Elmendorf 20 (grams–min)		4.6.1
Transparency a. As received b. After aging 12 days at 150 °F	 Lettering shall be clear and legible Lettering shall be clear and legible		4.6.1
Oil resistance (delamination)	No leakage, swelling, delamination, or embrittlement		4.6.1
Long term protection	No corrosion of steel panels. Shall comply with transparency requirement		4.6.5
Water resistance of marking	Markings shall be clear and legible		4.6.1

Downloaded from http://www.everyspec.com

TABLE I. Performance requirements – Continued.

Characteristics	Type I and Type II Requirements	Test Paragraph Reference
One year storage stability:		4.6.7
1. Seam strength		
a. As received material sealed & tested at room temperature (separation-inches)	50 % (max)	
b. Sealed after aging at 160 °F for 12 days and tested at room temperature (separation-inches)	50 % (max)	
2. Vapor inhibitor ability (VIA)	No corrosion, etching, or pitting of the steel panel's polished surface	
3. Transparency		
a. As received	Lettering shall be clear and legible	
b. After aging 12 days at 150 °F.	Lettering shall be clear and legible	

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.2 Qualification inspection. The qualification inspection shall consist of all tests and examinations of this specification.

4.3 Conformance inspection. Conformance inspections consist of the required tests listed in table II and the examinations listed in tables III through V.

TABLE II. Conformance tests.

Characteristics	Paragraph Reference
Seam strength	--
As received	4.6.2.2
Sealing after aging	4.6.2.3
Tearing strength	4.6.1
Vapor inhibitor ability	4.6.1
Vapor inhibitor ability after exhaustion	4.6.1
Contact corrosivity	4.6.1

Downloaded from http://www.everyspec.com

TABLE II. Conformance tests - Continued.

Characteristics	Paragraph Reference
Transparency	--
As received	4.6.1
After aging	4.6.1

4.3.1 Sampling for conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with the provisions set forth in ASQC-Z1.4.

4.3.2 Examination of the end item. For the purpose of determining the sample size in accordance with ASQC-Z1.4, the lot size shall be expressed in units of rolls or packages of sheets, as applicable, for examinations under 4.3.2.1 through 4.3.2.3.

4.3.2.1 Examination of the end item for defects in appearance, construction, and workmanship. For examination of defects within rolls, the sample unit of product shall be two yards, the full width of the roll. For examination of sheets, the sample unit shall be two sheets randomly selected from a package. No more than five sample units, randomly selected, shall be drawn from any one roll or package of sheets, as applicable. Both sides of the material shall be examined.

TABLE III. Examination of end item for defects in appearance, construction, and workmanship.

EXAMINATION	DEFECT
Form	Not roll or flat cut, as specified.
Appearance	Surfaces not clean; presence of any foreign matter, dirt, sand, grit, or oil spots. (Note: Defects do not apply to outer convolution of roll.)
Workmanship	Blister, crack, cut, hole, tear, sharp crease, chafed spot, or scuff mark. (Note: Defects do not apply to outer convolution of roll.) Evidence of delamination or embrittlement. Edges not clean cut; ragged, crushed, or uneven.
Construction	Not uniform; layer or section missing, selvage present.
Identification markings	Illegible, incorrect, incomplete, or omitted. Not in a continuous row of constantly recurring symbols. Type I color is not yellow. Type II color is not green. Not in machine direction. Printing is not alternating or as specified in 3.6.

4.3.2.2 Examination of the end item for defects in general construction. The sample unit for this examination shall be one roll or one package of sheets, as applicable.

Downloaded from http://www.everyspec.com

TABLE IV. Examination of end item for defects in general construction.

EXAMINATION	DEFECT
Rolls or package of sheets	Loss of coating or impregnation causing bald spots. Coating or impregnation completely missing. Granular sandpaper surface.
Assembly of sheets	Not evenly and uniformly stacked; sheet containing manufacturer's sealing conditions not visible upon opening. Adjacent sheets stick together to the extent that separation causes tearing or injury to any surface. Splice within sheet.
Assembly of roll	Not restrained to prevent unwinding. Material not wound uniformly on roll causing soft or uneven edges, or telescoping of roll. Material not wound on a rigid core, core broken, collapsed, crushed, mutilated.
Unwinding of roll (check both sides)	When unwound, material sticks together to the extent that unrolling causes tearing or injury to any surface. Material wound unevenly causing wrinkles, sharp creases, or folds within roll. Roll not wrapped with at least one thickness of MIL-PRF-131, class 1 material.
Sealing instructions	Manufacturer's instructions for sealing conditions of the material not securely attached to core of roll.

4.3.2.3 Examination of the end item for dimensional defects. The sample unit for this examination shall be one roll or one package of sheets, as applicable.

TABLE V. Examination of the end item for dimensional defects.

EXAMINATION	DEFECT
Sheets	Length or width varies by more than plus or minus 1/8 inch from dimensions specified.
Rolls:	
Width	Varies by more than plus or minus 1/8 inch from width specified.
Length	Average length of roll material is less than 200 yards, length of any individual roll is less than 195 yards.
Core	Length is less than width of roll material, or greater by more than plus 1/8 inch. Inside diameter less than 3 inches or greater than 3 1/8 inches.
Identification markings	Lettering is less than 1/16 inch in height. Parallel rows over 2 1/2 inches apart.

Downloaded from http://www.everyspec.com

4.4 Test conditions and preparation.

4.4.1 Test conditions. Unless otherwise specified in the detailed test method herein, the physical tests contained in this specification shall be made with an atmosphere having a relative humidity of 50 ± 5 percent and a temperature ranging from 76 to 80 °F. Material shall be considered in equilibrium after exposure to the above conditions for a minimum of 24 hours.

4.4.2 Test preparation.

a. The utensils and cloths used in the preparation of panels and test specimens shall be clean and free of contamination. Solvents shall be clean and renewed frequently. In all stages of treatment the handling of panels with bare hands shall be avoided. Panels shall not be permitted to contact contaminated surfaces during the cleaning procedure.

b. After hand polishing metals panels and test specimens as specified for each procedure, they shall be cleaned with surgical gauze and then scrubbed in a beaker of hot mineral spirits conforming to A-A-2904 with a surgical gauze swab. This shall be followed by successive immersions in hot mineral spirits, boiling 95 percent methanol, and boiling absolute methanol, and then allowed to dry and be stored in a desiccator until ready for use. If storage of more than 24 hours occurs, the surface preparation shall be repeated starting with the hand polishing.

c. Apparatus used in the VIA test and exhaustion procedure shall be cleaned in a solution of hot water and soap, followed by a double rinse in hot tap water and a final rinse in distilled water.

d. As a precautions after all tests, the apparatus shall be thoroughly cleaned as described. Care shall be taken to segregate test samples by use of wrapping materials and to avoid contamination. Hands shall be washed after handling treated papers and between periods of handling different barriers.

4.5 Sealing instructions for qualification and conformance testing.

4.5.1 Type I seals.

a. All seals for test purposes shall be not less than 1/2-inch wide and shall be effected on a jaw-type heat-sealer (or equivalent as approved by the qualifying activity) having one heated jaw and one resilient unheated jaw utilizing the sealing conditions recommended by the manufacturer. The upper sealing conditions for production line sealing operations with respect to commercially available sealing equipment and commercially practical fabrication time are a temperature setting of 525 °F, a 3-second dwell time, and a pressure of 60 pounds per square inch (see 6.3).

b. Electronic seals for test purposes shall be not less than 1/16-inch wide and shall be effected on electronic sealers, or equivalent as approved by the qualifying activity. The upper sealing limits on the sealer shall effect a seal and not cause thinning at the inside edges of the seal.

Downloaded from http://www.everyspec.com

c. In the securing of the three 1-inch seam strength specimens from their respective samples (see 4.6.2.2.1), specimens shall not be removed:

(1) From points in the sealed sample where seal overlapping has occurred.

(2) From points in the sealed sample that were within 1-inch of either end of the sealer jaw during the sealing operation.

4.5.2 Type II seals. Cold seals for test purposes shall be not less than 1/2 inch wide and shall be effected on a sealer having two sets of rubber coated pullwheels and opposing jaws, using 40 pounds per square inch as the upper sealing conditions.

4.6 Verification of performance requirements.

4.6.1 Test methods. Unless otherwise specified, the tests in table VI shall be conducted in accordance with the identified methods.

TABLE VI. Test methods.

Tests	FED-STD-101 Test Method No.	ASTM Test Method No.
Vapor inhibitor ability	4031 procedure B	--
Vapor inhibitor ability (after exhaustion)	4031 procedure B	--
Puncture resistance	2065	--
Blocking resistance	3003 procedure A	--
Contact corrosivity	3005	--
Transparency	4034	--
Water resistance of marking	3027 change 2	--
Tearing strength	--	D689
Oil resistance (delamination)	3015 1/	--

1/ Oil conforming to ASTM-D471, number 3 oil and a di-2-ethylhexyl sebacate synthetic oil shall both be used.

4.6.2 Seam strength.

4.6.2.1 Seam strength samples. Samples measuring 6 by 12 inches shall be selected from the test material. Samples shall be drawn in duplicate for type I materials only. Heat-seals shall be applied to one set of samples, and impulse seals to the other set of samples.

Downloaded from http://www.everyspec.com

4.6.2.2 Seam strength "as received".

4.6.2.2.1 Preparation of test specimen. The specimens for this test shall be folded in half with the crease parallel to the long axis. The open or unfolded length shall be sealed. The sealed areas shall be indicated by a line drawn on the back of the specimen along the sealer jaw, while the specimen is in the sealer. The folded length shall be cut off 1/2 inch from the end. From each of the sections, three adjacent 1-inch-wide specimens shall be cut perpendicular to the seam (see 4.5).

4.6.2.2.2 Test at room temperature. The three 1-inch-wide specimens selected for this test (see 4.6.2.2.1) shall be opened and one end of each specimen shall be clamped so that the other end of the specimen hangs freely. A 1/2 pound weight shall then be carefully attached to the free end of the specimen so as not to impact load the seal. The weight shall be allowed to act for 5 minutes, whereupon the weight shall be removed and the specimen examined for separation of the sealed faces. Any evidence of delamination of one ply away from the other in the sealed area shall be cause for rejection.

4.6.2.3 Seam strength (sealed after aging).

4.6.2.3.1 Test specimens. The specimens for this test, in the flat unsealed condition as taken from the sample roll shall be aged in a circulating air oven maintained at 150 ± 2 °F for 12 consecutive days (288 hours). After removal from the oven, the unsealed sections shall return to room temperature. Test specimens shall then be obtained as specified in 4.6.2.2.1.

4.6.2.3.2 Test at room temperature. The three 1-inch-wide specimens selected for this test (see 4.6.2.3.1) shall be tested as specified in 4.6.2.2.2.

4.6.3 Seam and material water resistance.

4.6.3.1 Preparation of reagent. To each 98-ml portion of distilled water add 1 gram of aerosol OT and 1 gram of Erythrosin B, or the equivalent as approved by the qualifying activity. Allow the mixture to stand with periodic shaking for 4 hours.

4.6.3.2 Procedure. Ten bags having inside dimensions of 5 by 6 inches, shall be completely filled with shredded white absorbent paper (unwaxed) and sealed. Do not place a strain on the bag material or seams when filling. The reagent (see 4.6.3.1) shall be added to a 1 inch head of water in the proportion of 1 part (by volume) of reagent to 4 parts (by volume) of water. The sealed bags shall then be immersed for 5 minutes under the 1 inch head of water maintained at a temperature of 73 ± 2 °F. At the end of 5 minutes, remove the bags from the water, allow them to drain, cut open one edge, and examine the shredded paper for evidence of staining. Absence of staining shall indicate that sample bags resisted penetration of water.

Downloaded from http://www.everyspec.com

4.6.4 Compatibility with copper.

4.6.4.1 Preparation of test assembly panel. Three panels of cold rolled, hard temper copper conforming to ASTM-B152 and measuring 1/16 by 1/2 by 3 inches shall be polished to remove pits and irregularities from all surfaces. The panels shall be polished with 240 grit aluminum oxide. The use of "wet or dry" paper is prohibited. Iron oxide abrasives shall not be used. The final abrasion shall be in a direction parallel to the length of the panel. Each panel shall be bent into a "U" shape having a radius of 1/4 inch and a distance of 1/2 inch between side walls at the ends. A sample of treated barrier material measuring 3/4 by 3 1/2 inches shall be tightly wrapped around each "U" shaped panel with the treated or effective side to match, so that the material is perpendicular to the longitudinal axis and at the base of the open section of the "U". The treated barrier shall be secured with white nylon thread. A glass jar of one pint capacity measuring 2 1/2 inches in height shall be used.

4.6.4.2 Procedure. Fifty ml of a solution of synthetic glycerine and distilled water having a specific gravity of 1.103 at 75 ± 3 °F shall be poured into the test jar to provide a relative humidity of 85 ± 3 percent at 150 ± 2 °F. A glass vessel for use as a stage shall be inverted and placed inside the test jar. The three wrapped panels shall be placed around the perimeter of the stage with both legs of the inverted "U" resting on the stage in the test jar avoiding contact with glycerine solution. The test jar shall be sealed with a screw cap using an aluminum foil gasket and placed in a circulating air oven at 150 ± 2 °F for 7 days. The test jar shall then be removed from the oven, allowed to cool, and the copper panels removed and unwrapped. The "U" shaped specimen shall be examined on the inside surface of the "U" for evidence of corrosive effects from the vapor in accordance with ASTM-D130.

4.6.5 Long term protection.

4.6.5.1 Preparation of panel. Three 2 by 4 by 1/8 inch, cold rolled 1020 steel panels required for this test shall be finished and cleaned as specified for the contact corrosivity test specimens (see 4.6.1). Edges of the panel shall be rounded and two 1/8 inch diameter holes drilled at opposite corners of the 4 inch side.

4.6.5.2 Assembly and exposure. The panels shall be placed individually in a 3 by 5 inch (inside dimensions) pouch fabricated from the material with the interior surface being the treated side. After insertion of the panel, the excess air shall be exhausted from the pouch by hand, and the pouch sealed. The resultant assemblies shall then be exposed outdoors for 12 months in a louvered shed. Upon completion of this exposure period the panels shall be examined visually for conformance to the long term protection requirement in table I.

4.6.6 Low temperature flexibility.

4.6.6.1. Preparation of specimens. Cut five specimens, 4 inches by 12 inches, and condition in low temperature cabinet for 3 hours at -25 ± 2 °F. The specimens shall be arranged in the cabinet in a manner that shall allow circulation of air against all surfaces of the specimens.

Downloaded from http://www.everyspec.com

4.6.6.2 Test procedure. After conditioning for 3 hours, each specimen shall be drawn over a 1/4 inch diameter round steel mandrel at the conditioning temperature in such a manner that the specimen is subjected to a 180 degree bend. The mandrel shall be placed in the low temperature cabinet 1/2 hour prior to the flexing operation. This operation shall take 2 to 3 seconds for a complete draw over the mandrel. Each specimen shall be drawn over the mandrel three times, and then turned over so that the opposite face is toward the mandrel and the drawing process repeated as above.

4.6.7 Storage stability. Enough treated barrier material in roll or flat cuts (type I) to conduct the tests indicated below plus additional material for two retests shall be overwrapped with one layer of MIL-PRF-131, Class 1 barrier material and placed in storage for one year. After one year storage the MIL-PRF-131 barrier material shall be removed, and the treated barrier shall be tested for conformance to:

Seam strength (see 4.6.2).

Vapor inhibitor ability (VIA) (see 4.6.1).

Transparency (see 4.6.1).

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The barrier materials covered by this specification are intended for use in specialized military methods of preservation. The combination of all performance characteristics of MIL-PRF-22019; vapor inhibitor ability; vapor inhibitor ability after exhaustion; transparency; storage stability; long term protection; contact corrosivity; seam and fabrication strength; compatibility with copper, blocking and puncture resistance; delamination; water resistance of markings, provides the necessary requirements for protection from exposure to the extremes of the navy/naval aviation environment. Navy/naval aviation items are exposed to high moisture, high salt concentration, transfer at sea, rough handling, and minimal storage conditions. There are no commercial equivalents that meet

Downloaded from http://www.everyspec.com

the physical, mechanical, and corrosion requirements necessary to protect materiel that is exposed to the operational naval aviation environment. Specifically, specialized Method of Preservation GS of MIL-STD-2073-1C used MIL-PRF-22019 as the premier source of barrier materials that provides volatile corrosion inhibitor protection for applicable items encountering the above conditions. MIL-PRF-22019 provides the building blocks for applying specialized military preservation techniques approved under MIL-STD-2073-1C.

6.1.1 Type I use. Type I material is intended for use where a heat-sealable, VCI treated barrier material is required.

6.1.2 Type II use. Type II material is intended for use where either production or custom hand processing requires a cold-sealable VCI treated material.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of the specification.

b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1).

c. Type of barrier material (see 1.2).

d. Form (rolls or flat cut) and size required (see 3.4).

e. Packaging requirements (see 5.1).

6.3 Heat-seal equipment. In the interest of standardization and for ease of manipulation, the seals for test under this specification should be effected on a jaw-type heat-sealer. This, however, should not be construed as an indication of Governmental preference in regard to sealing equipment. It is not intended that the operating temperature of heat-sealing equipment be limited to 525 °F or less. While equipment may be operated at temperatures exceeding 525 °F to accomplish a seal, the barrier material should also be capable of being heat-sealed at temperatures of 525 °F or less.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL-22019 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products and the letter of authorization for submittal of sample may be obtained from: Commander, Naval Air Warfare Center Aircraft Division, Code 4.3.4.1, 48066 Shaw Road, Unit 5 Bldg. 2188, Patuxent River, MD 20670-1908.

Downloaded from http://www.everyspec.com

Barrier material supplied under contract should be identical in every respect to the samples tested and found to meet the requirements of this specification. Any unapproved changes from the qualification sample should constitute cause for rejection for material submitted and for removal from the list of qualified products. However, acceptability under this specification is based on the performance characteristics of the barrier material, and since there is no color requirement, it is not mandatory that the color of the visible surfaces of the material supplied under contract be the same as the samples tested and accepted by the qualifying activity.

6.4.1 Submission of qualification samples and additional information. Prior to submitting samples for qualification testing, vendors will request authorization from the qualifying activity. Upon receipt of authorization, samples will be forwarded as directed. The qualifying activity will require the manufacturer to submit for review and approval, two copies of the manufacturer's test report, including the sample's Material Safety Data Sheet (MSDS) (see 6.6), the location and identity of the plant which produced the sample, and the item composition report. The samples should be plainly and durably marked with the following information:

Sample for Qualification Inspection

BARRIER MATERIAL, TRANSPARENT, FLEXIBLE, SEALABLE
VOLATILE CORROSION INHIBITOR TREATED
Manufacturer's Name
Manufacturer's Code No.
Type
Date of manufacture (month and year)
Submitted by (name) (date) for qualification inspection in accordance with requirements of MIL-PRF-22019D under authorization (reference authorizing letter)

6.5 Conformance inspection lot. For purposes of sampling, an inspection lot for examinations and tests should consist of all material of the same class made by the same process from the same components by one manufacturer and submitted for delivery at one time.

6.6 Material Safety Data Sheets (MSDSs). Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets prepared in accordance with FED-STD-313. The pertinent Government mailing addresses for submission of data are listed in FED-STD-313; and 29 CFR 1910.1200 requires that the Material Safety Data Sheet for each hazardous chemical used in an operation must be readily available to personnel using the material. Contracting officers will identify the activities requiring copies of the Material Safety Data Sheet.

6.7 Metric conversion factors. Metric conversion factors are referenced in FED-STD-376.

Downloaded from http://www.everyspec.com

6.8 Subject term (key word) listing.

Cold-sealable
Heat-sealable
Packaging
Preservation
Water vapor transmission

6.9 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

CONCLUDING MATERIAL

Custodians:
Army - GL
Navy - AS
Air Force - 69

Review Activities:
Army - AT, CR, EA, MI, ME, SM
Navy - MC, OS, SA, SH, YD
Air Force - 84, 99
DLA - CC, SS

Preparing activity:
Navy - AS

(Project 8135-0715)

Downloaded from http://www.everyspec.com

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.

2. The submitter of this form must complete blocks 4, 5, 6, and 7.

3. The preparing activity must provide a reply within 30 days from receipt of the form.
NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-PRF-22019D	2. DOCUMENT DATE (*YYMMDD*) 980831

3. DOCUMENT TITLE
BARRIER MATERIALS,TRANSPARENT, FLEXIBLE, SEALABLE, VOLATILE CORROSION INHIBITOR TREATED

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.*)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (*Last, First, Middle Initial*)	b. ORGANIZATION	
c. ADDRESS (*Include Zip Code*)	d. TELEPHONE (*Include Area Code*) (1) Commercial: (2) DSN: (*If Applicable*)	7. DATE SUBMITTED (*YYMMDD*)

8. PREPARING ACTIVITY

a. NAME COMMANDER NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION	b. TELEPHONE NUMBER (*Include Area Code*) (1) Commercial (732) 323-2947 (2) DSN 624-2947
c. ADDRESS (*Include Zip Code*) CODE 414100B120-3 HIGHWAY 547 LAKEHURST, NJ 08733-5100	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Logistics Agency (DLSC-LM), Attn: Carla Jenkins/John Tascher 8725 John J. Kingman Road, Ste 2533 Fort Belvoir, VA 22060-6221 Telephone (703) 767-6874