

INCH-POUND

MIL-F-47170A (MI)
30 March 1992
SUPERSEDING
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MILITARY SPECIFICATION

PRIMER, SILICONE RUBBER SEALANT

This specification is approved for use by the U.S. Army Missile Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for a room-temperature drying silicone rubber sealant primer.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5270 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

DISTRIBUTION STATEMENT A.
distribution is unlimited.

FSC 8040

Approved for public release;

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2.1.1 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

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

MILITARY

MIL-A-46106 - Adhesive-Sealants, Silicone, RTV, One Component

STANDARDS

MILITARY

MIL-STD-129 - Marking for Shipment and Storage

(Unless otherwise indicated, copies of the federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Ave., Philadelphia, PA 19111-5094.)

2.2 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 TESTING AND MATERIALS

ASTM D 3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings

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(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.4.

3.2 Material. The material shall be a room temperature curing primer compatible with sealant conforming to MIL-A-46106, Type I.

3.3 Chemical property. The material shall meet the chemical property specified in 3.3.1 and 3.3.2 when tested in accordance with 4.6.1.1 and 4.6.1.2.

3.3.1 Nonvolatile solids. The nonvolatile solids content shall be 15 to 18 percent by weight (see 4.6.1.1).

3.3.2 Volatile content. Volatile content of the material shall not exceed 3.5 pounds per gallon (see 4.6.1.2).

3.4 Physical properties. The material shall meet the requirements specified in 3.4.1, 3.4.2, and 3.4.3 when tested in accordance with 4.6.2.

3.4.1 Viscosity. The viscosity of the material at 25° Celsius (C) shall be 2 to 10 centipoises.

3.4.2 Appearance. The primer shall be fluorescent pink

3.4.3 Shelf life. The shelf life of the primer in unopened containers shall be not less than 6 months from the date of

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manufacture when stored at temperatures not greater than 27°C (see 4.6.2.3).

3.5 Workmanship. The workmanship shall be such as to ensure a product which is uniform, in conformance with this specification, and properly packaged and packed. The primer shall be free of dirt, foreign material or other contamination. Containers shall be clean, uniformly filled, well-sealed and legibly marked.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 First article sample. The first article sample shall be prepared using the same methods proposed for the preparation of subsequent production lots of material. The first article sample shall be subjected to all examinations and tests specified herein. Unless otherwise specified (see 6.2), the government will perform the examinations and tests for first article acceptance at the contractor's plant. First article samples which do not meet all the requirements of the specification shall be rejected. Subsequent quantities will not be considered for acceptance until approval of the first article sample has been obtained.

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

- a. First article inspection (see 4.4)
- b. Quality conformance inspection (see 4.5).

4.4 First article inspection. Unless otherwise specified (see 6.2), three containers of primer shall be randomly selected from the first lot manufactured under each contract or purchase order. A sample from each container shall be subjected to each of the examinations and tests specified herein. The first article sample shall be taken from a batch of primer which has been produced by the same processes as proposed for all of the primer furnished under the same contract or purchase order.

4.5 Quality conformance inspection. All production lots of the primer offered for acceptance hereunder shall be subjected to the quality conformance inspection. Two containers of primer shall be selected at random from each lot offered for acceptance, and samples therefrom shall be subjected to the tests shown in table I. If a failure occurs, the lot shall be rejected.

TABLE I. Quality conformance inspection.

Examination or test	Requirement paragraph	Method paragraph
Viscosity	3.4.1	4.6.2.1
Appearance	3.4.2	4.6.2.2

4.5.1 Lot size. Lot size shall consist of all the material submitted for acceptance at the same time, which has been prepared by the same company without change in materials or processes in one continuous period of operation.

4.6 Test methods.

4.6.1 Chemical property test (see 3.3).

4.6.1.1 Nonvolatile solids. The weight of the nonvolatile solids shall be determined as follows: weigh 0.031 to 0.038 ounces of the material into a tared, flat bottom evaporating dish, approximately 3 inches in diameter. Dry to a constant weight for

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approximately 45 minutes in a 150° to 155°C oven. Cool in a desiccator and weigh. Calculate the percent of nonvolatile solids (see 3.3.1).

4.6.1.2 Volatile content. Volatile content of the material shall be determined in accordance with ASTM D 3690 (see 3.3.2).

4.6.2 Physical property tests (see 3.4).

4.6.2.1 Viscosity. The viscosity of the material shall be determined with a Brookfield viscometer, or equivalent, using an LVF No. 1 spindle rotating at 60 revolutions per minute (see 3.4.1).

4.6.2.2 Appearance. The appearance of the material shall be determined visually (see 3.4.2).

4.6.2.3 Shelf life. The primer shall be tested for conformance with all the requirements specified herein after completion of the storage period. A manufacturer's certificate of compliance with the shelf life requirement may be accepted during the storage period (see 3.4.3).

4.7 Inspection of packaging. The sampling and inspection of the preservation, packaging, and container marking shall be in accordance with the requirements of MIL-STD-129 and PPP-P-1892.

5. PACKAGING

5.1 Preservation, packing, unitization and marking. Preservation, packing, unitization and marking shall be Level A or B. Container size shall be specified by the procuring activity (see 6.2).

5.1.1 Level A or B. Preservation, packing and unitization shall be in accordance with PPP-P-1892.

5.2 Marking. Marking shall be in accordance with MIL-STD-129 and PPP-P-1892.

6. NOTES

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

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6.1 Intended use. The primer covered by this specification may be used to promote adhesion of the sealant covered by MIL-A-46106, and similar hard-to-bond surfaces. The usage of primer should be substantiated by tests for the surfaces in question. The primer may be applied by dipping, brushing or spraying. The primer and sealant, used as a system, shall be manufactured by the same company.

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 and 2.2)
- c. Whether a first article sample is required (see 3.1)
- d. Where first article testing will be performed (see 4.2)
- e. Sampling plan, if other than specified (see 4.4)
- f. Level A or Level B preservation, packing, unitization and marking (see 5.1)
- g. Container size (see 5.1).

6.3 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerers whether the item(s) should be a first article sample, a first production item, or a number of items to be tested as specified in 4.4. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

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6.4 Metrication. Metric equivalents in accordance with FED-STD-376 are acceptable for use in this specification.

6.5 Subject term (keyword) listing.

Acetone
Adhesive
Adhesive - sealants
Coatings
Isopropanol
N-butanol
RTV
Sealants
Toluene

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

Custodiar:
Army - MI

Preparing activity:
Army - MI

Project no. 8040-A165

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.

RECOMMEND A CHANGE		1. DOCUMENT NUMBER MIL-P-47170A (MI)		2. DOCUMENT DATE (YYMMDD) 920309	
3. DOCUMENT TITLE PRIMER, SILICONE RUBBER SEALANT					
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		7. DATE SUBMITTED (YYMMDD)	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)			
8. PREPARING ACTIVITY					
a. NAME COMMANDEE U.S. ARMY MISSILE COMMAND		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (705) 876-6980 746-6980			
c. ADDRESS (Include Zip Code) ATTN. AMSMI-RD ST-TD-SI REDSTONE ARSENAL, AL 35898-5270		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT Defense Quality and Standardization Office 5205 Leesburg Pike, Suite 1400, Falls Church, VA 22041-2466 Telephone (703) 756-2340 AUTOVON 289-2340			