

MIL-A-81270(WP)
10 May 1965

MILITARY SPECIFICATION
ADHESIVE, SYNTHETIC RUBBER

This specification has been approved by the
Bureau of Naval Weapons, Department of the Navy.

1. SCOPE

1.1 Scope. This specification covers one type of general purpose nitrile phenolic, synthetic rubber adhesive.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-P-116

Preservation, Methods of

STANDARDS

Federal

Federal Test Method
Standard Number 175

Adhesives; Methods of Testing

Military

MIL-STD-129

Marking for Shipment and Storage

(When requesting any of the above documents, give the title and complete designation of the item shown above. Copies of this specification and other unclassified specifications, standards and publications required by contractors in connection with specific procurement functions may be obtained from the Commanding Officer, Navy Supply Depot (CDS), 5801 Tabor Avenue, Philadelphia, Pennsylvania, 19120.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated,

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the issue in effect on date of invitation for bids or request for proposal, shall apply.

PUBLICATIONS

American Society for Testing and Materials

ASTM D 1002-53T	Strength Properties of Adhesives in Shear by Tension Loading (Metal to Metal)
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ASTM D 1084-55T	Tests for Consistency of Adhesives
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(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania, 19103.)

3. REQUIREMENTS

3.1 Preproduction samples. Unless otherwise specified in the contract or order, preproduction samples of the nitrile phenolic, synthetic rubber adhesive shall be manufactured using the methods and procedures proposed for the production. The sample shall be tested as specified in Section 4 herein and is for the purpose of determining that, prior to starting production, the contractor's production methods are capable of yielding items that comply with the technical requirements of the contract. After satisfactorily passing all the preproduction tests specified herein, no changes in raw materials and processing of materials for production shall be made without prior written approval of the procuring activity.

3.2 Data requirements. No data is required by this specification or by applicable documents referenced in Section 2 unless specified in the contract or order (see 6.2).

3.3 Physical and chemical properties

3.3.1 Solids content. The solids content shall be no greater than 21 nor less than 19 percent.

3.3.2 Viscosity. The viscosity shall be no less than 15 seconds nor more than 35 seconds.

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3.3.3 Shear strength. The shear strength shall be no less than 1200 pounds per square inch (psi).

3.4 Workmanship. The material shall be uniform in quality and shall be free from impurities and other defects that could adversely affect its use.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspections. Inspection of the adhesive shall be classified as follows:

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

4.3 Sampling

4.3.1 Preproduction sample. Three samples from the preproduction sample of the adhesive, manufactured in accordance with 3.1, shall be subjected to the preproduction tests detailed in 4.4 at an activity designated by the procuring activity. Further production of the adhesive by the supplier, prior to the approval of the preproduction sample, shall be at the supplier's risk.

4.3.2 Quality conformance inspection sampling. Unless otherwise specified, sufficient material shall be taken from each lot to perform the tests as specified in 4.5.

4.3.3 Inspection lot. An inspection lot of the synthetic rubber adhesive shall be all the material presented for acceptance at one time and produced

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in a single manufacturing run under homogeneous conditions of manufacture.

4.4 Preproduction inspection. The preproduction sample shall satisfactorily pass the quality conformance inspections detailed in 4.5.

4.5 Quality conformance inspection

4.5.1 Visual examination. Visually examine all the containers in a lot to determine conformance to 3.4 and Section 5.

4.5.2 Solids content. Total solids content shall be determined in accordance with Federal Test Method Standard Number 175, method 4021.

4.5.3 Viscosity. The viscosity shall be determined in accordance with ASTM D 1084-55T, using a cup with a 0.15-inch opening.

4.5.4 Shear strength. Shear strength shall be determined in accordance with ASTM D 1002-53T with the following exceptions:

- a. One-inch wide cold rolled steel strips with a 1/2-inch lap joint shall be utilized.
- b. Both pieces of steel strips to be bonded shall be coated with adhesive, air dried and then dried further by being placed on the bottom plate of a press at 350 ± 5 degrees Fahrenheit (F) for 2 to 3 minutes.
- c. Specimens shall be cured for 30 ± 2 minutes at 350 ± 5 degrees F under a pressure of 500 ± 10 psi in the press.
- d. Separation speed shall be 0.05 inch per minute.

4.6 Acceptance criteria

4.6.1 Preproduction. Failure of any sample to comply with any requirement of this specification shall be cause for rejection of the sample.

4.6.2 Quality conformance. Failure of any sample to meet any requirement of this specification shall be cause for rejection of the lot.

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5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging and packing. Unless otherwise specified in the contract or order, minimum requirements for preservation, packaging and packing shall be in accordance with MIL-P-116, method III.

5.2 Marking. Each container shall be marked in accordance with MIL-STD-129. Marking shall include, but not be limited to, the following information:

- a. Manufacturer's name and location
- b. Material trade name
- c. Net weight or volume
- d. Lot number, batch number and date of manufacture
- e. Shelf life or storage limitations
- f. Number and revision letter of this specification

6. NOTES

6.1 Intended use. The material purchased in accordance with this specification is intended to be used as an adhesive in rocket motors.

6.2 Ordering data. Procurement documents should specify, but not be limited to, the following information:

- a. Title, number and revision letter of this specification
- b. Minimum lot size, if applicable
- c. Whether preproduction sample is required
- d. Place of delivery
- e. Size of container
- f. Request for test data

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<u>INSTRUCTIONS</u>		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).		
SPECIFICATION MIL-A-81270(WP) ADHESIVE, SYNTHETIC RUBBER		
ORGANIZATION (of submitter)		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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DEPARTMENT OF THE NAVY
Bureau of Naval Weapons
Washington, D. C. 20360

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