

**MIL-P-46069(MU)**

25 SEPTEMBER 1964

**MILITARY SPECIFICATION****MOLDING PLASTIC, GLASS/EPOXY PRE-MIX****1. SCOPE**

1.1 This specification covers the requirements for an epoxy preimpregnated chopped strand premix molding compound.

**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 the specification to the extent specified herein.

**SPECIFICATIONS:****FEDERAL**

PPP-D-723 —Drums, Fiber.  
 PPP-D-729 —Drums, Metal, 55 Gallon  
 (For Shipment of  
 Non-Corrosive Mate-  
 rials).

**MILITARY**

JAN-P-112 —Packaging and Packing  
 for Overseas Shipment  
 —Drums, Ply wood  
 (For Drums Whose  
 Weight of Content  
 Does Not Exceed 200  
 Pounds).

**STANDARDS****FEDERAL**

Fed. Test —Plastics: Methods of  
 Method Std. Testing  
 No. 406

**MILITARY**

MIL-STD-105 —Sampling Procedures  
 and Tables for In-  
 spection by Attri-  
 butes

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

**3. REQUIREMENTS**

3.1 **Material.** The material shall consist of  $\frac{1}{2}$  inch fiber length chopped glass strands which are impregnated with an unpigmented epoxy resin.

3.2 **Color.** Unless otherwise specified by the procuring activity, the premix shall contain no pigments or colorants.

3.3 **Instructions for use.** When specified by the procuring activity, the manufacturer shall provide complete instructions for using the premix. Such instructions shall be furnished with each shipment of premix material and shall contain the following information:

(a) *Storage stability.* Indicate the optimum temperature and conditions to obtain maximum stability, and expectant storage life of the material under these conditions.

(b) *Molding techniques.* State the optimum temperature and pressure required to produce molded specimens conforming to all properties specified in table I.

The number of copies of the instruction sheet and method of determining compliance with the stated conditions shall be specified by the procuring activity.

3.4 **Physical and mechanical properties.** Specimens prepared from the premix in accordance with the manufacturers instructions shall conform to the requirements specified in table I.

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**MIL-P-46069(MU)****TABLE I. Property requirements**

Property	Requirement	Paragraph reference to applicable test
Flexural strength, psi, min.	50,000	4.6.3
Flexural modulus, psi, min.	$2.6 \times 10^6$	4.6.3
Tensile strength, psi, min.	22,000	4.6.4
Impact, strength, ft. lbs./inch of notch, min.	18	4.6.5
Barcol hardness, min.	60	4.6.6
Resin content, percent	$37 \pm 3$	4.6.7

**3.5 Workmanship.** The premix shall be free from contaminants, foreign, and extraneous material. No scrap material previously cured and reground shall be used.

**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 Govern-

ment 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 Lot.** A lot of premix shall consist of all the material which is produced in one continuous manufacturing process and offered for acceptance at one time.

**4.3 Inspection.** Inspection for acceptance of each lot shall consist of determining conformance to the requirements of section 3 and the examination specified in 4.5.

**4.4 Sampling.**

**4.4.1 Sampling for examination.** A sample of filled containers shall be selected from each lot in accordance with Standard MIL-STD-105 at Inspection Level I.

**4.4.2 Sampling for tests.** A sample of sufficient size to prepare the necessary specimens for testing shall be selected at random from each lot.

**4.5 Examination**

**4.5.1 Visual.** Sample units shall be ex-

**TABLE II. Examination procedures and standards<sup>1</sup>**

Item	AQL Percent	Classification of defect	Defect <sup>2</sup>	Method of inspection
Premix (see 3.2, 3.5, and 6.2)	4.00	Minor 201	Improper color	Visual
		Minor 202	Reground scrap	Visual
		Minor 203	Contamination, foreign or extraneous material	Visual
In open container (see 3.3 and 5.2)	4.00	Minor 204	Lack of, or improper liner in container	Visual
In closed container (see 3.2 and 5.3)	1.00	Minor 205	Improper container	Visual
		Major 101	Improper weight <sup>3</sup>	Approved scales <sup>4</sup>
		Minor 206	Improper closure	Visual
		Minor 207	Lack of, or improper marking	Visual

<sup>1</sup> Unless otherwise specified by the procuring activity, Standard MIL-STD-105 shall be used as a basis.

<sup>2</sup> When applicable.

<sup>3</sup> The actual weight of a container filled with the minimum required quantity of premix shall be the basis for determining the acceptable weight of subsequent containers.

<sup>4</sup> All scales and other measuring tools shall be furnished by the contractor and approved by the procuring activity.

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amined for the defects and at the acceptable quality levels shown in table II.

**4.5.2 Packing and marking.** Examination shall be for the defects and at the acceptable quality levels shown in table II.

**4.6 Test procedures**

**4.6.1 Preparation of specimens.** Sheets, 0.125 inch thick, and of sufficient size and number from which the specimens required by 4.6.3 to 4.6.6 can be prepared, shall be molded from the material selected in accordance with 4.4.2. Molding temperatures and pressures shall be as recommended by the manufacturer.

**4.6.2 Test methods and conditions.** Unless otherwise specified, all specimens shall be conditioned and tested under the standard conditions required by Federal Test Method Standard No. 406, section 4, paragraph 4.4. The reported results shall be the average of the values obtained for all test specimens.

**4.6.3 Flexural strength and modulus.** Seven specimens shall be machined from the sheets prepared in accordance with 4.6.1 and shall be tested in accordance with Method 1031 of Fed. Test Method STD No. 406.

**4.6.4 Tensile strength.** Seven specimens shall be machined from the sheets prepared in accordance with 4.6.1 and shall be tested in accordance with Method 1011 of Fed. Test Method STD No. 406. The specimens shall be type I as shown in figure 1011A of the test method.

**4.6.5 Impact strength.** Ten specimens shall be machined from the sheets prepared in accordance with 4.6.1 and shall be tested in accordance with Method 1071 of Fed. Test Method STD. No. 406.

**4.6.6 Barcol hardness.** Barcol hardness shall be determined from direct readings taken with a Model 934-1 Barcol Impressor. The average of a minimum of five readings shall be reported. The Impressor shall be used in accordance with the manufacturer's instructions.

**4.6.7 Resin content.** Resin content shall be determined on the uncured premix in accordance with Method 7061 of Fed. Test Method STD. No. 406. Resin content shall be determined in triplicate.

**4.7 Rejection**

**4.7.1 Examination.** A lot shall be rejected when the number of nonconforming units of a sample exceeds the acceptance number for that sample, when examined in accordance with 4.5.

**4.7.2 Tests.** A lot shall be rejected for failure to comply with any of the test requirements of this specification, when tested in accordance with 4.6.

**5. PREPARATION FOR DELIVERY**

The packing and marking requirements specified herein apply only to direct purchases by, or direct shipment to the Government.

**5.1 Preservation and packaging.** Not applicable.

**5.2 Packing**

**5.2.1 Level A.** Unless otherwise specified, the premix material shall be packed in one of the containers listed below. The gross weight shall not exceed 200 pounds. All drums shall be furnished with a polyethylene bag, properly closed. Closure of drums shall be in accordance with the applicable specification.

- (a) Fiber drums conforming to PPP-D-723, Type III, Grade A.
- (b) Plywood drums conforming to JAN-P-112.
- (c) Full removable head metal drums conforming to PPP-D-729.

**5.2.2 Level C.** The premix shall be packed for shipment in compliance with common carrier regulations applicable to that mode of transportation to ensure safe delivery at destination at lowest transportation costs without assessment of penalty charges for improper packing.

**5.3 Marking.** Containers shall be marked in

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accordance with Standard MIL-STD-129, and any additional special marking specified in the contract or order.

### 6. NOTES

6.1 **Intended use.** The premix molding compound covered by this specification is intended for use in molding missile or projectile fins, and other similar structural applications.

**Custodian:**

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6.2 **Ordering data.** Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Instruction sheet, if required (see 3.3).
- (c) Level of packing required (see 5.2).
- (d) Special marking, if required (see 5.8).

**Preparing Activity:**

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Project No. 9230-A000

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 110-R504
<b>INSTRUCTIONS</b>		
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.		
SPECIFICATION		
ORGANIZATION	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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PICATINNY ARSENAL  
DOVER, NEW JERSEY  
OFFICIAL BUSINESS**

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**Commanding Officer  
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