

# AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard



AMS 3626F

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Superseding AMS 3626E

## Plastic Moldings and Extrusions, Methyl Methacrylate

### 1. SCOPE:

#### 1.1 Form:

This specification covers one type of methyl methacrylate resin in the form of extrusions, compression moldings, and injection moldings.

#### 1.2 Application:

These products have been used typically for parts requiring good dimensional stability, a high degree of optical clarity, and good resistance to outdoor weathering, but usage is not limited to such applications.

#### 1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

### 2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

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## 2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor, West Conshohocken, PA 19428-2959.

ASTM D 256	Impact Resistance of Plastics and Electrical Insulating Materials
ASTM D 570	Water Absorption of Plastics
ASTM D 635	Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
ASTM D 638	Tensile Properties of Plastics
ASTM D 638M	Tensile Properties of Plastics (Metric)
ASTM D 648	Deflection Temperature of Plastics Under Flexural Load
ASTM D 792	Specific Gravity (Relative Density) and Density of Plastics by Displacement

## 2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-STD-2073-1 DOD Materiel, Procedures for Development and Application of Packaging Requirements

## 3. TECHNICAL REQUIREMENTS:

### 3.1 Material:

Shall be an unfilled methyl methacrylate resin.

### 3.2 Color:

Colorless, transparent, or, when specified, the product shall be furnished translucent or opaque and in the color specified.

### 3.3 Properties:

The product shall conform to the requirements specified in Table 1, 3.3.7, and 3.3.8; tests shall be performed on the product supplied and in accordance with specified ASTM methods, insofar as practicable:

TABLE 1 - Properties

Paragraph	Property	Requirement	Test Method
3.3.1	Tensile Strength, minimum at 23 °C ± 1 (73 °F ± 2) at 70 °C ± 1 (158 °F ± 2)	7600 psi (52.4 MPa) 2800 psi (19.3 MPa)	ASTM D 638 or ASTM D 638M Speed C
3.3.2	Impact Strength, Notched Izod, minimum at 23 °C ± 1 (73 °F ± 2)	0.2 foot-pound per inch (10.7 J/m)	ASTM D 256, Method A
3.3.3	Specific Gravity at 23/23 °C (73/73 °F), maximum	1.19	ASTM D 792, Method A
3.3.4	Water Absorption (24 hours immersion) at 23 °C ± 1 (73 °F ± 2) Gain, maximum Soluble Loss, maximum	0.60% 0.12%	ASTM D 570
3.3.5	Deflection Temperature at 264 psi (182 kPa) fiber stress, minimum	65 °C (149 °F)	ASTM D 648
3.3.6	Rate of Burning, maximum (See 8.2)	1.5 inches per minute (0.6 mm/s)	ASTM D 635

3.3.7 Weather Resistance: The product shall have weather resistance acceptable to purchaser, determined by a procedure agreed upon by purchaser and vendor.

3.3.8 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service, determined by a procedure agreed upon by purchaser and vendor. Discoloration of metal shall not be considered objectionable.

#### 3.4 Quality:

The product, as received by purchaser, shall be uniform in quality and condition, smooth, and free from imperfections detrimental to usage of the product.