

ANCELLED

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## PLASTIC MOLDINGS AND EXTRUSIONS Ethyl Cellulose

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Extrusions, compression or injection moldings.

3. APPLICATION: The thermoplastic product, with good resistance to impact at low temperature, is primarily intended for general purpose applications requiring such a property.

4. TECHNICAL REQUIREMENTS: (a) General.-

(1) Color and Condition.- Unless otherwise specified, a black opaque product shall be furnished. The product shall be furnished translucent or opaque, as specified, and in the color required, when so stipulated.

(2) Weathering.- When specified, a weathering test shall be conducted as agreed between the purchaser and the vendor.

(3) Corrosion.- The product shall not have a corrosive or other deleterious effect on other materials when exposed to conditions normally encountered in the operation of aircraft. Discoloration of metals shall not be considered objectionable.

(b) Physical Properties.- The product shall conform to the following requirements as received unless otherwise indicated:

|                                       | Value | Test Method               |
|---------------------------------------|-------|---------------------------|
| Tensile Strength, psi, min            |       | ASTM D638-44T             |
| 77 F                                  | 4500  |                           |
| 160 F <sup>a</sup>                    | 2000  |                           |
| Impact Strength, (Notched Izod)       |       |                           |
| ft-lb per in. of notch, min           |       | ASTM D256-43T             |
| 77 F                                  | 5.0   | Method A                  |
| -40 F                                 | 1.0   |                           |
| Specific Gravity, 77 F/77 F, max      | 1.16  | ASTM D792-44T             |
| Water Absorption (24-hr immersion)    |       | ASTM D570-42              |
| % Gain, max                           | 1.8   |                           |
| % Soluble Loss, max                   | 0.1   |                           |
| Distortion Under Heat                 |       |                           |
| (264 psi Fiber Stress), deg Fahr, min | 135   | ASTM D648-45T             |
| Weight Loss on Heating,               |       |                           |
| %, max                                | 0.2   | ASTM D635-44 <sup>b</sup> |
| Flammability, in. per min, max        | 2.0   |                           |

Section 70 of the SAE Technical Board rules provides that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by one engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any standard or recommended practice, and no commitment to be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider themselves against liability for infringement of patents."

<sup>a</sup>Specimens conditioned for 48 hr and tested at  $160 \pm 2$  F and minimum relative humidity of 3%.

<sup>b</sup>Specimens shall be 1/8 in. thick.

5. **QUALITY:** The product shall be uniform in quality and condition, clean, smooth, free from foreign materials, and from defects detrimental to fabrication, appearance, or performance. Products in which harmful defects are revealed during fabrication will be subject to rejection.
6. **TOLERANCES:** Tolerances shall be as specified on the drawing.
7. **SAMPLES:** When specified, the vendor of the product shall furnish molded test specimens which have been molded at the plant of the molder and represent each batch of molding compound. The vendor shall state that the molded samples are made from materials used on the production run and are equal in quality to the product supplied on the order.
8. **REPORTS:** (a) Unless otherwise specified, the vendor shall furnish three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, percentages and specific types of plastic used, part number and quantity.
- (b) Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of the product, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification and shall include in the report a certification that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
9. **IDENTIFICATION:** Unless otherwise specified, all parts of suitable size shall have the part number molded or permanently impressed thereon. Extrusions require no identifications.
10. **PACKAGING:** (a) Packaging shall be accomplished in such a manner as to ensure that the product, during shipment and storage, will not be permanently distorted, and will be protected against exposure to undue weathering or harmful agents of any kind.

(b) Each package shall be permanently and legibly marked to give the following information:

PART NUMBER \_\_\_\_\_  
COLOR \_\_\_\_\_  
QUANTITY \_\_\_\_\_  
PURCHASE ORDER NO. \_\_\_\_\_  
MATERIAL SPECIFICATION AMS 3621  
MANUFACTURER'S IDENTIFICATION \_\_\_\_\_