



ACRYLIC MOLDING COMPOUND

ESB-M4D9-A2

1. SCOPE

The material defined by this specification is a thermoplastic acrylic molding compound with good weathering and heat resistance properties.

2. APPLICATION

This specification was released originally for material used in exterior two-shot injection molded tail lamp lenses.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 MOLDING COMPOUND

3.2.1 Flow Rate 13 - 17 g/10 min
(ASTM D 1238, Condition "I")

3.3 MOLDED TEST SPECIMEN

3.3.1 Preparation of Test Specimens

All test specimens shall be injection molded in accordance with ASTM D 1897. The values of this specification are based on injection molded specimens unless otherwise specified.

3.3.2 Conditioning and Test Conditions

All test values indicated herein are based on material conditioned per ASTM D 618, Procedure B (48 h at 50 +/- 2°C) prior to testing, except for para 3.3.3 and 3.3.10, where material is conditioned in a controlled atmosphere of 23 +/- 2° and 50 +/- 5% relative humidity for not less than 24 h prior to testing. All tests are performed at 23 +/- 2° C and 50 +/- 5% RH unless otherwise specified.

3.3.3 Specific Gravity 1.17 - 1.19
(ASTM D 792)

3.3.4 Tensile Strength, min 9,000 psi (62 MPa)
(ASTM D 638, Type I specimen,
0.125 in (3.2 mm) thick, 50 mm/min)

3.3.5 Elongation, min 3%
(ASTM D 638, Type I specimen,
0.125 in (3.2 mm) thick, 50 mm/min)

Date	Action	Revisions
2007 01 17	Revised	Inserted 3.0; Deleted 3.1, 3.4.6, 3.8, 4; Corrected numbering in para 3
1983 07 22	Released	B4E-5212/CENI-RD-503991-1



3.3.6	Flexural Modulus, min (ASTM D 790, Method I, Procedure A, 0.250 in (6.4 mm) thick specimen)	350,000 psi (2.4 GPa)
3.3.7	Flexural Strength, min (ASTM D 790, Method I, Procedure A, 0.250 in (6.4 mm) thick specimen)	14,000 psi (96 MPa)
3.3.8	Impact Strength, min (ASTM D 256, 0.125 in (3.2 mm) thick specimen)	
	Izod	0.35 ft.lb/in (18.6 J/m)
	Unnotched (No Notch Either Side)	4.0 ft.lb/in (213 J/m)
3.3.9	Deflection Temperature, min (ASTM D 648, 0.250 in (6.4 mm) thick specimen, 264 psi (1.82 MPa)	76 °C
3.3.10	Water Absorption, max (ASTM D 570, 24 h immersion)	0.4%

3.4 MOLDED PART

3.4.1 Color

As specified on engineering drawing, and it shall match the master sample approved for production on file in the Quality Control or Test Laboratory.

3.4.2 Appearance

Shall be uniform in density, texture and finish, free of visible porosity, warpage, heat scorch, checks, cracks, chipped edges and uneven surfaces. They shall also be free of other contamination.

3.4.3 Accelerated Weathering

After 1600 h exposure in an Atlas XW Weatherometer per FLTM BO 101-01 change in visual appearance shall not exceed a rating of 5 per the AATCC Gray Scale for evaluating change in color.

3.4.4 Outdoor Exposure (SAE J 576)

After outdoor exposure tests defined in para 3.3 of SAE J 576 for material used as defined in para 2.2.1, the appearance shall meet the requirements of para 4.2.4 of the same document.

3.4.5 Decorability

When decorating is required on parts made of this material, they must be capable of accepting this decoration in accordance with the performance specification shown on the engineering drawing.