



POLYAMIDE (PA) MXD6 55% GLASS FIBER AND MINERAL REINFORCED MOLDING COMPOUND

WSS-M4D992-A

1. SCOPE

The material defined by this specification is a glass fiber reinforced crystalline thermoplastic molding compound based on the polycondensation of metaxylylendiamine (MXDA) and adipic acid.

2. APPLICATION

This specification was released originally for material used for painted exterior mirror shells that require high strength and good vibration characteristics.

Notice: This material absorbs and retains moisture. Part design and tolerances must accommodate changes in part dimensions and physical properties due to moisture absorption or loss in the service/assembly environment.

3. REQUIREMENTS

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.1.1 All requirements of this specification, identified by symbol (s), shall be met with data representing 3 sigma values.

3.2 MOLDING COMPOUND

3.2.1 Filler Content 52 – 58%
(ISO 3451/4, test temperature
600 +/- 25 °C, test portion 1 g)

(s) 3.2.2 Melt Flow Rate 7.0 - 13.0 g/10
(ISO 1133, 275 °C, 2.16 kg) minutes

The material shall be dried for 12 hours minimum at 80 °C in a mechanical convection oven immediately preceding the test.

Date	Action	Revisions
2005 04 06	Activated	



Documents

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3.3 MOLDED TEST SPECIMEN

3.3.1 Preparation of Test Specimens

Unless otherwise specified all tests shall be carried out on injection molded one-end gated test specimens.

The following dimensions are required:

- A. 150 min x 10 x 4.0 +/- 0.2 mm (Tensile Bar, ISO 3167)
- B. 120 x 10 x 4.0 +/- 0.2 mm

Specimens with shorter dimensions shall be cut from the center portion of the test specimen A and/or B. The specimens shall be prepared according to ISO 294. No annealing allowed.

	3.3.2	Density (ISO 1183, Method A)	1.70 - 1.76 g/cm ³
(s)	3.3.3	Tensile Strength at Max Load, min (ISO R 527, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, 5 mm/min test speed)	160 MPa
(s)	3.3.4	Flexural Modulus, min (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)	16.0 GPa
(s)	3.3.5	Impact Strength, Izod, min (ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)	
	3.3.5.1	At 23 +/- 2 °C	3.5 kJ/m ²
	3.3.5.2	At -40 +/- 1 °C	3.2 kJ/m ²

The test specimens must be conditioned for minimum of 6 h at the above specified temperature prior to impact test. Low temperature testing shall be done within the cold box.

(s)	3.3.6	Heat Deflection Temperature, min (ISO 75, 120 x 10 x 4.0 +/- 0.2 mm specimen, edgewise, 0.32 +/- 0.01 mm deflection @ 1.80 MPa)	217 °C
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All specimens dry as molded. If not tested immediately after molding, specimens must be stored in a sealed, moisture-proof container filled with silica gel.