

NYLON 66/6 - 13% GLASS FIBER REINFORCED, COPOLYMER

GMP.PA66/6.001

1 SCOPE. This specification covers the properties of a 13% glass fiber reinforced, pellet form, injection molding, nylon copolymer compound.

1.1 APPLICATIONS. Typical applications include the following: Switches, knobs

2 REFERENCED STANDARDS.

GM1000M	ASTM D789	ASTM D2584
ASTM D256	ASTM D790	ASTM D3418
ASTM D638	ASTM D792	ASTM D4019
ASTM D648	ASTM D1897	

3 TEST PROCEDURES. Tests shall be conducted using the latest issue of the test methods indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and/or handling the materials required by this specification.

3.1 Test specimens shall be injection molded according to ASTM D1897. Test specimens shall be 3.2 ± 0.2 mm thick unless otherwise specified in this GMP specification. Izod specimens shall be cut from the centers of the 127 x 12.7 x 3.2 mm bars.

3.2 Tests shall be conducted on dry-as-molded, unannealed test specimens. These specimens are to be sealed in water vapor impermeable containers immediately after molding and maintained in the sealed containers @ $22 \pm 3^\circ\text{C}$ until the time of testing, 24 h min after molding. Tests shall be made @ $22 \pm 3^\circ\text{C}$ unless otherwise specified.

4 COMPOUND PROPERTIES.

4.1 RESTRICTED AND REPORTABLE CHEMICALS (GM1000M). By 1997 start of saleable vehicles, all materials supplied to this specification must comply with the requirements listed in GM1000M, "Restricted and Reportable Chemicals."

4.2 COMPOUND CERTIFICATION. Material suppliers must certify molding compound properties to the specific GM Test Sampling Plan approved for their material.

4.3 COMPOUND PROPERTIES (NATURAL AND BLACK). See Table 1.

5 SUGGESTED COMPOUND VERIFICATION.

Inherent compound properties and test procedures that may be used to identify this material are listed below. The test value and test procedure requirements are identical to those listed in Section 4, Compound Properties.

Filler Content
Infrared Characterization Scan
Melt Point
Relative Viscosity
Specific Gravity

6 COMPOUND AND SOURCE APPROVAL.

Each vehicle group and component division will have its own approved compound list derived from the corporate plastics file (MATSPC). No shipment shall be made by a new source until a sample of the compound manufactured at a production facility has been approved by the appropriate vehicle group and/or component division. Shipment receipt and certification requirements will vary among receiving locations.

6.1 Completed copies of the Material Safety Data Sheet meeting GM information requirements must be submitted with any new submissions or when a composition change has occurred.

7 IDENTIFICATION. The molding compound shall be identified by the specification code, the manufacturer's identification code and lot number, along with any additional vehicle group and component division requirements.

8 INSPECTION AND REJECTION. The purchaser reserves the right to sample incoming shipments even though it is the responsibility of the supplier to meet the requirements stated without dependence upon the purchaser's inspection. The supplier (whether prime contractor or subcontractor) will forfeit qualification if a change is made in material, processing methods, testing methods, or location of manufacture without prior written request to and subsequent approval from the purchaser.

9 GENERAL INFORMATION. This standard was originated by the Plastics Committee in September 1992 and first published in March 1995.

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GMP.PA66/6.001**TABLE 1 - COMPOUND PROPERTIES (NATURAL AND BLACK)**

Properties	Test Values	Test Methods
Glass Fiber Reinforcement	11 - 15%	ASTM D2584
Moisture Content as Received	0.2% max	ASTM D789 or ASTM D4019
Specific Gravity	1.20 - 1.24	ASTM D792
Melt Point	230 - 245°C	ASTM D3418, 10°C/minute
Flexural Modulus	3900 MPa min	ASTM D790, Method I, 1.3 mm/minute, 50 mm span, tangent calculation
Tensile Strength at Break	98 MPa min	ASTM D638, Type I bar, 5 mm/minute
Deflection Temperature Under Load	185°C min	ASTM D648, 1820 kPa
Notched Izod Impact	36 J/m min	ASTM D256, Method A