NYLON 66 + PPE - GENERAL PURPOSE, ALLOY

GMP.PA66+PPE.003

1 SCOPE. This specification covers the properties of a pellet form, injection molding grade, integrally colored plastic alloy of heat stabilized poly (hexamethylene adipamide) 66 + poly (phenylene ether) + polystyrene. The heat stabilized poly (hexamethylene adipamide) 66 is a continuous phase matrix into which the poly (phenylene ether) + polystyrene alloy is uniformly dispersed.

1.1 PAINTABILITY. Approved paint systems that can be used on this material are listed in the GM Approved Paint On Plastic Systems (GM APOPS) data base.

1.2 APPLICATIONS. Typical applications include the following: wheel covers and mirror housings.

2 REFERENCED STANDARDS.

GM1000M	ASTM D789	ASTM D3763
ASTM D256	ASTM D790	ASTM D4019
ASTM D638	ASTM D792	
ASTM D648	ASTM D1897	

3 TEST PROCEDURES. Tests shall be conducted using the latest issue of the test methods indicated.

3.1 Test specimens shall be injection molded according to ASTM D1897 using side-gated test molds. Specimen thickness shall be 3.2 ± 0.2 mm.

3.2 Tests shall be conducted 40 h min, after molding and immediately following a conditioning period of 24 h min, @ 21 ± -2°C and 50% RH ± 5% RH unless otherwise specified. All testing shall be done on unannealed samples.

3.3 MULTI-AXIAL IMPACT.

3.3.1 Test specimens shall be injection molded test plaques that are 100 mm min wide by 100 mm min long or 100 mm min dia. disk by 3.2 ± 0.2 mm thick.

3.3.2 Ductile failure is defined as a puncture of the test plaque without cracks radiating more than 10 mm beyond the center of the impact point.

4 COMPOUND PROPERTIES (BLACK & GRAY) SEE TABLE 1.

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".

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.

Specific Gravity
TGA and DSC Analysis
Infrared Spectroscopy
Melt Point
Filler Content
Relative Viscosity

6 APPROVED 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 whenever 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 November 1991. The latest revisions include:

Rev	Date	Description
A	2/92	Editorial
B	3/95	New vformat, Title change

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TABLE 1 - COMPOUND PROPERTIES (BLACK AND GRAY).

Properties	Test Values	Test Methods
Specific Gravity	1.05 - 1.15	ASTM D792, Method A1
Moisture Content as Received	.2% max	ASTM D789 or ASTM D4019
Tensile Stress at Yield	55 MPa min	ASTM D638, Type I bar, 50 mm/minute
Flexural Modulus		ASTM D790, Method I, 1.3 mm/minute, 50 mm span, Tangent Calculation
@ +22°C	2000 MPa min	
@ +120°C	750 MPa min	
Izod Impact	160 J/m min	ASTM D256, Method A
Deflection Temperature Under Load	108°C min	ASTM D648, 1820 kPa
Multi - Axial Impact Strength		ASTM D3763, 2.2 m/s
@ + 22°C	15 J min @ max load, Ductile/Brittle	See 3.3.1
@ - 30°C	5 J min @ max load, Brittle	

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