



ENGINEERING MATERIAL SPECIFICATION

Material Name	File Control No.	Specification Number
POLYAMIDE (PA) 66, MOLDING COMPOUND - SE	SMT5004DA8170	WSK-M4D564-A

1. SCOPE

The material defined by this specification is a polyamide 66 molding compound containing flame retardant additives.

2. APPLICATION

This specification was released originally for material used for loudspeaker connectors.

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 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared and/or thermal analysis of material/parts supplied to this specification. The IR spectra and thermogram established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce IR spectra and thermograms that correspond to the reference standard when tested under the same conditions.

3.3 CONDITIONING AND TEST CONDITIONS

All test values indicated herein are based on material and specimens with moisture content not exceeding 0.2% (test according to ISO R 960, Method B/ASTM D 789).

All test materials immediately after processing have to be sealed in containers that are impermeable to water vapor. If the moisture content exceeds 0.2 %, condition the material for a minimum of 16 h at 40 - 50 C at a reduced pressure below 133 kPa.

Date	Release No.	Release/Revision
1988 06 01	B/031512 TP	Retyped, added pagge 6 shear modulus M. Siewert
1987 02 26	SM/EQ 5676TP	Released H. Fuechtenhans

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Conduct tests in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5% relative humidity. Individual specimens shall not be removed from closed containers until immediately before testing.

3.4 MOLDING COMPOUND

- 3.4.1 Melting Point, min 250 C
(ISO 1218, Method B/ASTM D 789)

3.5 MOLDED TEST SPECIMEN

3.5.1 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 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.

- 3.5.2 Density 1.16 - 1.20 g/cm³
(ISO R 1183, Method A/ASTM D 792, Method A1)
- 3.5.3 Tensile Strength at Yield, min 65 MPa
(ISO R 527/ASTM D 638M, 150 x 10 x 4.0 +/- 0.2 mm specimen, 50 mm/min test speed)
- 3.5.3.1 Elongation at Break, min 2 %
(Test Method according to para 3.5.3)
- 3.5.4 Flexural Modulus, min 2.7 GPa
(ISO 178/ASTM D 790M, Method I, Procedure A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 64 mm support span)