



POLYPHENYLENE ETHER + POLYAMIDE BLEND (PPE+PA) CONDUCTIVE MOLDING COMPOUND

WSS-M4D989-B

1. SCOPE

The material defined by this specification is a conductive thermoplastic molding compound based on polyphenylene ether and polyamide blend.

2. APPLICATION

This specification was released originally for material used for exterior components such as fuel filler doors that do not require a conductive primer and can be painted with basecoat/clearcoat systems in the assembly plant with the vehicle body.

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

Material specification requirements are to be used for initial qualification of materials.

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 This specification is based on virgin material only. The use of in-house regrind is not allowed unless the part is validated during PV testing with the documented level of regrind noted on the part drawing.

3.2 MOLDING COMPOUND

3.2.1 Melt Volume Rate 8 – 25 cm³/
(ISO 1133, 280 °C, 5.0 kg) 10 minutes

The material shall be dried for 30 min minimum at 95 °C in a mechanical convection oven immediately preceding the test.

Date	Action	Revisions	Rev. 4
2014 09 16	Editorial	See Summary of Revisions	K. Mueller, NA
2014 09 10	Editorial	See Summary of Revisions	K. Mueller, NA
2006 09 29	Activated		M. Myers



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 minimum x 10 x 4.0 +/- 0.2 mm (ISO 3167, Type 1A)
- B. 60 x 60 x 2.0 +/- 0.1 mm (ISO/DIS 294-3)
- C. 355 x 100 x 1.0 +/- 0.1 mm (ISO 3795)

3.3.2 Density (ISO 1183, Method A) 1.07 – 1.13 g/cm³

3.3.3 Tensile Strength at Yield (ISO 527-1 & ISO 527-2, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, test speed: 50 mm/minute) 53 MPa min

3.3.3.1 Elongation at Yield (Test Method according to para 3.3.3) 4.0% min

3.3.4 Tensile Stress/Strain Curves (ISO 527-1, 527-2, ISO 11403-1; 150 x 1 x 4 mm specimen [specimen A]). Test speed shall be 5 mm/minute for all materials.

Provide a curve of tensile stress versus strain using one specimen per lot at each of the following temperatures: -20 °C, 23 °C, 60 °C and 90 °C. For ductile materials, the curve shall cover strain through yield point.

3.3.5 Impact Strength, Izod, notched (Initial Qualification) (ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen [use center section of specimen A], 10 specimens for each test)

3.3.5.1 At 23 +/- 2 °C 6.0 kJ/m² min

3.3.5.2 At -40 +/- 1 °C 1.9 kJ/m² min

The test specimen must be conditioned for minimum of 6 hours at the above specified temperature prior to impact test. Low temperature testing shall be done within the cold chamber, if not possible, test may be conducted outside, but within 5 seconds.

3.3.6 Tensile Modulus (ISO 527-1 & ISO 527-2, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen test speed: 1mm/minute) 2.2 GPa min