



POLYPHENYLENE ETHER + POLYSTYRENE BLEND (PPE+PS), IMPACT RESISTANT MOLDING COMPOUND

WSK-M4D844-A9

1. SCOPE

The material defined by this specification is a thermoplastic compound based on polyphenylene ether (or polyphenylene oxide) with high impact polystyrene.

2. APPLICATION

This specification was released originally for material used for painted body parts.

3. REQUIREMENTS

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

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

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

3.4 MOLDING COMPOUND

- (s) 3.4.1 Melt Flow Rate 4 - 13 g/10 minutes
(ISO 1133, 300 °C, 2.16 kg)

The material shall be dried for 2 h minimum at 115 - 120 °C in a mechanical convection oven immediately preceding the test.

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 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.

- 3.5.2 Density 1.01 - 1.20 g/cm³
(ISO 1183, Method A)

Date	Action	Revisions
2006 05 18	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.8, 3.9 & 4
2001 06 22	Revised	Updated
1993 08 02	Released	EP00E10258823000



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- (s) 3.5.3 Tensile Strength at Max Load, min 35 MPa
(ISO R 527, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen, 50 mm/min test speed)
- (s) 3.5.3.1 Elongation at Break, min 30%
(Test Method according to para 3.5.3)
- (s) 3.5.4 Flexural Modulus, min 1.5 GPa
(ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen, 2 mm/min test speed, 64 mm support span)
- 3.5.5 Shear Modulus at 23 °C 750 - 950 MPa
(ASTM D 4065, forced constant amplitude, fixed frequency of 1 Hz +/- 15%, strain level below 1%. Specimen approx. 60 x 10 x 4.0 +/- 0.2 mm cut from the center of specimen A. Specimen length between clamps 35-40 mm. Soak time at each temperature interval - 3 minutes minimum)

Additionally, a Shear Modulus versus Temperature curve shall be plotted for -50 to +150 °C temperature range, at 5 °C minimum intervals. The plotted curve must be within tolerance range shown on page 5.

- (s) 3.5.6 Impact Strength, Izod, min
(ISO 180/1A, 80 x 10 x 4.0 +/- 0.2 mm specimen, 10 specimens for each test)
- 3.5.6.1 At 23 +/- 2 °C 24 kJ/m²
- 3.5.6.2 At -40 +/- 1 °C 8 kJ/m
- 3.5.6.3 At -20 +/- 2 °C 10 kJ/m²

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) 3.5.7 Heat Deflection Temperature, min 100 °C
(ISO 75, 120 x 10 x 4.0 +/- 0.2 mm specimen, 0.32 +/- 0.01 mm deflection. At 1.80 MPa)
- (s) 3.5.8 Vicat Softening Temperature, min 110 °C
(ISO 306, 10 x 10 x 4.0 +/- 0.2 mm specimens. Bath - silicone oil, temperature raise 50 +/- 5 °C/h. Dial gage reset to '0' after addition of 5 kg weight. At 50 N load)

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.