



**POLYPROPYLENE (PP) HOMOPOLYMER, 20% MINERAL
FILLED, MOLDING COMPOUND**

WSS-M4D729-B1

**POLYPROPYLENE (PP), 20% MINERAL FILLED,
MOLDING COMPOUND, 50% PCR AND/OR PIR CONTENT**

WRS-M4D729-B2

1. SCOPE

The material defined by this specification is a 20% mineral (talc) filled injection molding compound based on polypropylene. Material with recycled content should be used whenever feasible.

2. APPLICATION

This specification was released originally for material used for rear lamp bulb holder cover and head lamp housing, battery tray, heater and A/C unit, engine air cleaner and engine NVH cover.

2.1 LIMITATIONS

- These materials have low impact resistance at low temperatures. Production level materials must be used in preparing test parts / panels. The use of improper sample prep materials can influence test results.
- For applications that have a direct impact on the interior air quality, such as heater and A/C unit please note that the odour test is required as prescribed in the relevant performance specification.

3. REQUIREMENTS

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 Many 4D resin specifications prior to 2011, identified certain requirements with the symbol (s), which indicated that the mean and +/- 3 sigma values were to be reported. The specification minimum, maximum or range was established using 3 sigma data. For 2011 and beyond, refer to Table 1 for number of samples required for each test to establish specification limits.

3.1.2 WSS-M4D729-B1 is based on virgin materials.

3.1.3 WRS-M4D729-B2 must contain 50% Post Consumer Recycled (PCR) and/or Post Industrial Recycled (PIR) content as defined by WRS-M99P42-A1. The remaining portion of the material can come from virgin sources.

3.1.4 The use of regrind is permitted for economic and environmental reasons with compliance as indicated in WSS-M99P1111-A.

Date	Action	Revisions	Rev. 1
2011 10 04	Revised	Editorial changes to 3.1.	
2011 05 10	Active	Reformatted B1 and new B2 suffix	



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3.1.5 Performance Criteria:

Parts using this material must comply with all the requirements of WSK-M98P10-A/ Latest for exterior lighting application or WSS-M15P50-B / Latest for engine compartment and underbody applications

3.2 SAMPLE PREPARATION

Unless otherwise specified all tests shall be carried out on injection molded, one-end gated test specimens. The test specimens A and D shall be molded using molding conditions defined in ISO 1873-2.

Specimens shall be as follows:

Specimen A	150 minimum x 10 x 4.0 +/- 0.2 mm (ISO 527-2, Specimen Type 1A)
Specimen B	355 x 100 x 1.0 +/- 0.1 mm (ISO 3795)
Specimen C	145 x 60 x 3.2 +/- 0.2 mm
Specimen D	Center of Specimen A. 80 x 10 x 4.0 +/- 0.2 mm
Specimen E	100 mm diameter x 3.2 mm
Specimen F	80 mm diameter x 3.2 mm
Specimen G	90 mm x 200 mm
Specimen H	50 +/- 1 mm diameter x 3.2 +/- 0.2 mm
Specimen I	100 mm x 150 mm, min

3.3 MATERIAL PROPERTIES

3.3.1	Filler Content (ISO 3451-1, Method A, talc filler, 1 h at 750 +/- 25 °C, test portion 2 to 2.5 g)	18 - 23%
3.3.2	Density (ISO 1183, Method A)	1.03 - 1.15 g/cm ³
3.3.3	Tensile Strength at Yield (ISO 527-1 and ISO 527-2, Specimen A, test speed:50 mm/minute)	27 MPa min
3.3.4	Tensile Modulus (ISO 527-1 & ISO 527-2, Specimen A 1 mm/minute test speed)	2.0 GPa min
3.3.5	Flexural Modulus (ISO 178, Specimen D 64 mm support span, 2 mm/minute test speed)	2.2 GPa min
3.3.6	Impact Strength, Notched Izod (ISO 180/1A, Specimen D)	
3.3.6.1	At 23 +/- 2 °C	2.0 kJ/m ² min Report Break Type
3.3.6.2	At -40 +/- 2 °C	1.2 kJ/m ² min Report Break Type