



POLYPROPYLENE COPOLYMER, 22% MINERAL FILLED,
INTERIOR

WSK-M4D556-A

NOT TO BE USED FOR NEW DESIGN

POLYPROPYLENE COPOLYMER, 22% MINERAL FILLED, MEDIUM
SCRATCH RESISTANT MOLDING COMPOUND, INTERIOR

WSK-M4D556-A3

NOT TO BE USED FOR NEW DESIGN

POLYPROPYLENE COPOLYMER, 15% MINERAL FILLED, HIGH
SCRATCH RESISTANT MOLDING COMPOUND, INTERIOR

WSK-M4D556-A4

POLYPROPYLENE COPOLYMER, 24% MINERAL FILLED, HIGH
SCRATCH RESISTANT MOLDING COMPOUND, MULTI SPOT
DECOR, INTERIOR

WSK-M4D556-A5

NOT TO BE USED FOR NEW DESIGN

1. SCOPE

The materials defined by these specifications are colored 15 to 24 % mineral filled injection moulding compounds based on polypropylene copolymers. WSK-M4D556-A3, -A4 and -A5 materials are qualified to fulfill higher requirements for scratch resistance. WSK-M4D556-A5 material shows additionally multi spot decor effects.

2. APPLICATION

These specifications were released originally for materials used for various interior applications such as pillar trims, door bins, package tray side supports etc.

2.1 LIMITATIONS

Mold-in-color part using this material must comply with all the requirements of WSS-M15P4-Latest. Production level materials must be used in preparing test parts / panels. The use of improper sample prep materials can influence test results.

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 All requirements of this specification, identified by symbol(s), shall be met with data representing 3 sigma values using latest ISO test methods.

3.1.2 This specification is based on virgin materials, however materials with recycled content as defined by WSS-M99P42-A (post-consumer and/or post industrial recyclates and repolymerised recycled materials) should be used whenever technically feasible and following all materials and PV testing required by Ford Materials Engineering. The use of regrind is permitted, for economic / environmental reasons, with compliance as indicated in WSS-M99P1111-A.

Date	Action	Revisions
2010 05 19	Revised	Completely revised, WSK-M4D556-A/A3/A5 is replaced by WSK-M4D556-A4 V.Cerato and Global Material Team
2005 09 06	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.11, 3.12 & 4
1987 01 23	Released	SM/EQ 5668 TP



Documents

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**Critical Process Parameters**

At the request of Ford Materials Engineering the supplier shall be responsible to collect critical process control data on each lot of material produced. Testing required will be jointly developed between Ford Materials Engineering and the supplier based on Control Plan and PFMEA review at the time of initial approval. Annually the supplier will review the in process data with Ford Materials Engineering to show that the process has remained under control. The data needs to be submitted in January for the previous calendar year. Data showing poor quality control measures or lack of submitted data may result in deletion from the Ford Approved Source List.

3.2 MOLDING COMPOUND

		A/A3/A5	A4
(s)	3.2.1 Filler Content % (ISO 3451-1, Method A, talc filler, 1 h at 850 +/- 50 °C, test portion 2 to 2.5 g)	19-27	13-19

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 527-2, specimen type 1A)
B. 355 x 100 x 1.0 +/- 0.1 mm (ISO 3795)

NOTE: *The recommended thickness tolerances on all test specimens are +/- 0.1 mm.*

Test specimen A shall be molded using molding conditions defined in ISO 1873-2. Specimens with shorter dimensions shall be cut from the center of the specimen A. No annealing allowed.

		A/A3/A5	A4
	3.3.2 Density g/cm ³ (ISO 1183, Method A),	1.01-1.11	0.95-1.05
(s)	3.3.3 Tensile Strength at Yield, min (ISO 527-1 & ISO 527-2, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen A, test speed: 50 mm/minute)	20 MPa	
	3.3.4 Tensile Modulus, min (ISO 527-1 & ISO 527-2, 150 minimum x 10 x 4.0 +/- 0.2 mm specimen A test speed: 1 mm/min, 10 specimens)	A 1.8 GPa	A3/A4/A5 1.7 GPa
(s)	3.3.5 Flexural Modulus, min (ISO 178, 80 x 10 x 4.0 +/- 0.2 mm specimen [use center section of specimen A], 2 mm/min test speed, 64 mm support span)	A 2.0 GPa	A3/A4/A5 1.9 GPa