MAGNUM™ 3904
ABS Resin

Overview

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MAGNUM™ 3904 is a medium heat ABS. Its very high impact properties make it suitable for main interior automotive applications. MAGNUM™ 3904 is available in Europe and China, locally produced in major car production regions. Due to its excellent extrusion capabilities, this product is also used for large thermoformed parts, for Truck and Bus applications.

Benefits:

- Lot to lot consistency allowing for optimal machine parameters settings from the start
- Self-coloring enabling improvement of costs by using less pigments and lowering your logistic costs
- Low VOC allowing a better interior air quality facing increasing regulatory and OEMs constraints.
- Heat stability during wide range of processing temperatures: enhanced part design freedom
- Contains low amounts of gels providing for excellent thermoformability with low levels of scrap

Applications:

- Main interior automotive applications requiring high impact
- Various interior trims, under the beltline
- Large sized applications in commercial transportation

Complies with:

U.S. FDA FCN 1525

Automotive Specifications

- BMW GS 93016
- GM QK 002022 Color: Natural
- DAIMLER DBL 5404.03
- VAG VW-TL 527

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.05	g/cm³	1.05	g/cm³	ISO 1183/B
Apparent (Bulk) Density	0.65	g/cm³	0.65	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)					ASTM D1238
220°C/10.0 kg	4.5	g/10 min	4.5	g/10 min	
220°C/5.0 kg	1.2	g/10 min	1.2	g/10 min	
230°C/3.8 kg	1.2	g/10 min	1.2	g/10 min	
Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	0.287	in³/10min	4.70	cm³/10min	ISO 1133
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3	in/in	0.40 to 0.70	%	ISO 294-4
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
0.126 in (3.20 mm), Injection Molded	264000	psi	1820	MPa	ISO 527-2
Injection Molded	273000	psi	1880	MPa	ASTM D638
Tensile Stress					
Yield, Injection Molded	5660	psi	39.0	MPa	ASTM D638
Yield, 0.126 in (3.20 mm), Injection Molded	5370	psi	37.0	MPa	ISO 527-2/50
Yield, 0.126 in (3.20 mm), Injection Molded	5660	psi	39.0	MPa	ISO 527-2/100
Tensile Strain					
Yield, Injection Molded	3.6	%	3.6	%	ASTM D638
Yield, 0.126 in (3.20 mm), Injection Molded	2.6	%	2.6	%	ISO 527-2/50
Yield, 0.126 in (3.20 mm), Injection Molded	2.8	%	2.8	%	ISO 527-2/100
Flexural Modulus					
Injection Molded	310000	psi	2140	MPa	ASTM D790
0.126 in (3.20 mm), Injection Molded [1, 2]	276000	psi	1900	MPa	ISO 178

Mechanical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Flexural Stress					
Injection Molded	8410	psi	58.0	MPa	ASTM D790
0.126 in (3.20 mm), Injection Molded [1, 2]	8410	psi	58.0	MPa	ISO 178
Impact	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Charpy Notched Impact Strength					
-22°F (-30°C), Injection Molded	5.7	ft·lb/in²	12	kJ/m²	ISO 179/2C
-22°F (-30°C), Injection Molded	8.6	ft·lb/in²	18	kJ/m²	ISO 179/1eA
73°F (23°C), Injection Molded	18	ft·lb/in²	37	kJ/m²	ISO 179/1eA
73°F (23°C), Injection Molded	10	ft·lb/in²	22	kJ/m²	ISO 179/2C
Notched Izod Impact					
Injection Molded	10	ft·lb/in	540	J/m	ASTM D256
-22°F (-30°C), Injection Molded	8.1	ft·lb/in²	17	kJ/m²	ISO 180/A
73°F (23°C), Injection Molded	20	ft·lb/in²	42	kJ/m²	ISO 180/A
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Heat Deflection Temperature					ISO 75-2/A
264 psi (1.8 MPa), Annealed	207	°F	97.0	°C	
Vicat Softening Temperature	207	°F	97.0	°C	ASTM D1525 ISO 306/B50
Flammability	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Burning Rate [3] (0.0787 in (2.00 mm))	1.6	in/min	40	mm/min	ISO 3795
Flame Rating [3]					UL 94
0.06 in (1.5 mm)	HB		HB		
0.12 in (3.0 mm)	HB		HB		
Carbon Emission [3]	20.0	µg/g	20.0	µg/g	VDA 277
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Gardner Gloss (60°)	71		71		ASTM D523

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

[1] 0.079 in/min (2.0 mm/min)

[2] 3-points

[3] This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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