MAGNUM™ 3904

ABS Resin

Trinseo

PROSPECTOR®
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Technical Data

Product Description

Overview:
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

General

Material Status	• Commercial: Active		
Literature [1]	• Brochure - MAGNUM™ ABS - Tthe Benchmark ABS for Extrusion (English) • Brochure - MAGNUM™ ABS Resins - Proven to enhance productivity and efficiency (English) • Press Release - Trinseo broadens Plastic Resin offering in North America (English) • Technical Datasheet		
UL Yellow Card [2]	• E162447-238269 • E73656-249577		
Search for UL Yellow Card	• Trinseo • MAGNUM™		
Availability	• Asia Pacific • Europe	• Latin America • North America	
Features	• Good Processability	• High Impact Resistance	
Uses	• Automotive Applications	• Automotive Interior Parts	
Automotive Specifications	• BMW GS 93016 • DAIMLER DBL 5404.03	• GM QK 002022 Color: Natural • VAG VW-TL 527	
Forms	• Pellets		
Processing Method	• Extrusion • Injection Molding	• Profile Extrusion • Sheet Extrusion	• Thermoforming

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density			
--	1.05 g/cm³	1.05 g/cm³	ISO 1183/B
--	0.0379 lb/in³	1050 kg/m³	ISO 1183 [4]
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
220°C/10.0 kg	0.244 in³/10min	4.00 cm³/10min	ISO 1133 [4]
Molding Shrinkage - Flow	0.40 to 0.70 %	0.40 to 0.70 %	ISO 294-4

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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
--	276000 psi	1900 MPa	ISO 527-2 [4]
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
Yield	5080 psi	35.0 MPa	ISO 527-2 [4]
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
Yield	2.5 %	2.5 %	ISO 527-2 [4]
Nominal strain at break	45 %	45 %	ISO 527-2 [4]
Flexural Modulus			
Injection Molded	310000 psi	2140 MPa	ASTM D790
0.126 in (3.20 mm), Injection Molded [5, 6]	276000 psi	1900 MPa	ISO 178
Flexural Stress			
Injection Molded	8410 psi	58.0 MPa	ASTM D790
0.126 in (3.20 mm), Injection Molded [5, 6]	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
-22°F (-30°C)	7.61 ft·lb/in²	16.0 kJ/m²	ISO 179/1eA [4]
73°F (23°C)	18.1 ft·lb/in²	38.0 kJ/m²	ISO 179/1eA [4]
Charpy impact strength			ISO 179/1eU [4]
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
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			
264 psi (1.8 MPa), Annealed	207 °F	97.0 °C	ISO 75-2/A
264 psi (1.8 MPa)	207 °F	97.0 °C	ISO 75-2 [4]
Vicat Softening Temperature			
--	207 °F	97.0 °C	ASTM D1525 ISO 306/B50
50°C/h, B (50N)	207 °F	97.0 °C	ISO 306 [4]

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume resistivity	> 3.9E+14 ohms·in	> 1.0E+13 ohms·m	IEC 60093 [4]

Form No. TDS-31913-en

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Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Burning Rate [7] (0.0787 in (2.00 mm))	1.6 in/min	40 mm/min	ISO 3795
Flame Rating [7]			UL 94
0.06 in (1.5 mm)	HB	HB	
0.12 in (3.0 mm)	HB	HB	
Burning Behav. at 1.6mm nom. thickn.			ISO 1210 [4]
0.06 in (1.50 mm), UL	HB	HB	
Carbon Emission [7]	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

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

[5] 0.079 in/min (2.0 mm/min)

[6] 3-points

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

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Where to Buy

Supplier

Trinseo
, USA
Telephone: 888-789-7661
Web: http://www.trinseo.com/

Distributor

ARM CHEMICAL LIMITED
Telephone: +86-20-3874-3190
Availability: China

Channel Prime Alliance
Telephone: 800-247-8038
Web: http://www.channelpa.com/
Availability: North America

Entec Polymers
Telephone: 800-375-5440
Web: http://www.entecpolymers.com/
Availability: North America

Nexeo Solutions - Europe
Nexeo Solutions is a Pan European distribution company. Contact Nexeo for availability of individual products by country.
Telephone: +34-93-480-9125
Web: http://www.nexeosolutions.com/
Availability: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Spain, Sweden, Switzerland, United Kingdom

PolyOne Distribution
PolyOne Distribution is a global distribution company. Contact PolyOne Distribution for availability of individual products by country.
Telephone: 800-894-4266
Web: http://polyonedistribution.com/
Availability: Global

RESINEX Group
RESINEX is a Pan European distribution company. Contact RESINEX for availability of individual products by country.
Telephone: +32-14-672511
Web: http://www.resinex.com/
Availability: Europe

Tex-Co Resin Distribution, Inc.
Telephone: 877-908-3926
Web: http://www.texcoresin.com/
Availability: North America

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