



MAGNUM™ 3904

Trinseo - ABS Resin

Sunday, November 3, 2019

General Information

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		
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

ASTM & ISO Properties¹

Physical	Nominal Value	Unit	Test Method
Density	1.05	g/cm ³	ISO 1183/B
Density	0.0379	lb/in ³	ISO 1183 ²
Apparent (Bulk) Density	0.65	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)			ASTM D1238
220°C/10.0 kg	4.5	g/10 min	
220°C/5.0 kg	1.2	g/10 min	
230°C/3.8 kg	1.2	g/10 min	
Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	4.70	cm ³ /10min	ISO 1133
Melt volume-flow rate (220°C/10.0 kg)	4.00	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.40 to 0.70	%	ISO 294-4

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Trinseo - ABS Resin

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
0.126 in, Injection Molded	264000	psi	ISO 527-2
Injection Molded	273000	psi	ASTM D638
Tensile modulus	276000	psi	ISO 527-2 ²
Tensile Stress			
Yield, Injection Molded	5660	psi	ASTM D638
Yield, 0.126 in, Injection Molded	5370	psi	ISO 527-2/50
Yield, 0.126 in, Injection Molded	5660	psi	ISO 527-2/100
Tensile Stress (Yield)	5080	psi	ISO 527-2 ²
Tensile Strain			
Yield, Injection Molded	3.6	%	ASTM D638
Yield, 0.126 in, Injection Molded	2.6	%	ISO 527-2/50
Yield, 0.126 in, Injection Molded	2.8	%	ISO 527-2/100
Tensile Strain (Yield)	2.5	%	ISO 527-2 ²
Nominal strain at break	45	%	ISO 527-2 ²
Flexural Modulus			
Injection Molded	310000	psi	ASTM D790
0.126 in, Injection Molded ^{3, 4}	276000	psi	ISO 178
Flexural Stress			
Injection Molded	8410	psi	ASTM D790
0.126 in, Injection Molded ^{3, 4}	8410	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-22°F, Injection Molded	5.7	ft-lb/in ²	ISO 179/2C
-22°F, Injection Molded	8.6	ft-lb/in ²	ISO 179/1eA
73°F, Injection Molded	18	ft-lb/in ²	ISO 179/1eA
73°F, Injection Molded	10	ft-lb/in ²	ISO 179/2C
Charpy notched impact strength (73°F)	18.1	ft-lb/in ²	ISO 179/1eA ²
Charpy notched impact strength (-22°F)	7.61	ft-lb/in ²	ISO 179/1eA ²
Charpy impact strength (73°F)	No Break		ISO 179/1eU ²
Charpy impact strength (-22°F)	No Break		ISO 179/1eU ²
Notched Izod Impact (Injection Molded)	10	ft-lb/in	ASTM D256
Notched Izod Impact Strength			ISO 180/A
-22°F, Injection Molded	8.1	ft-lb/in ²	
73°F, Injection Molded	20	ft-lb/in ²	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (264 psi, Annealed)	207	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi)	207	°F	ISO 75-2 ²
Vicat Softening Temperature	207	°F	ASTM D1525
Vicat Softening Temperature	207	°F	ISO 306/B50
Vicat Softening Temperature (50°C/h, B (50N))	207	°F	ISO 306 ²
Electrical	Nominal Value	Unit	Test Method
Volume resistivity	> 3.9E+14	ohms-in	IEC 60093 ²
Flammability	Nominal Value	Unit	Test Method
Burning Rate ⁵ (0.0787 in)	1.6	in/min	ISO 3795

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Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁵			UL 94
0.06 in		HB	
0.12 in		HB	
Burning Behav. at 1.6mm nom. thickn. (0.06 in, UL)		HB	ISO 1210 ²
Carbon Emission ⁵	20.0	µg/g	VDA 277
Optical	Nominal Value	Unit	Test Method
Gloss (60°)	71		ASTM D523

Notes

¹ Typical properties: these are not to be construed as specifications.

² Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

³ 0.079 in/min

⁴ 3-points

⁵ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.