

# MAGNUM™ 1150 EM ABS Resin

## Overview

MAGNUM™ ABS resins are thermoplastic materials which provide an excellent balance of processability, impact resistance and heat resistance as imparted by the various polymer compositions. MAGNUM ABS resin are available in a wide range of melt flow rates, impact strength and heat resistance for both high and low gloss applications manufactured by injection molding, sheet or profile extrusion and thermoforming processes.

The automotive grades of MAGNUM ABS resins offer a wide range of gloss, viscosities, impact strength and heat properties for use in numerous automotive applications. Melt flow rates from 1 to 12 g/10 min, impact strengths from 2.5 to 12 ft-lb/in and heat distortion temperatures from 165 to 190 degrees F are available. Available primarily as natural plus concentrates, MAGNUM ABS resins are used in a wide variety of automotive applications including structural instrument panels, consoles, pillars and exterior trim parts requiring painting and plating.

Within the MAGNUM ABS product line, MAGNUM 1150 EM ABS resin is a high impact, medium heat, low gloss resin. MAGNUM™ 1150 EM has improved low temperature impact strength over standard grades of ABS. MAGNUM™ 1150 EM is used in applications like pillars and instrument panel trim.

### Automotive Specifications

- CHRYSLER MS-DB-198 Type B CPN3903 Color: 100% Color Match

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.03 g/cm <sup>3</sup>	1.03 g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	0.90 g/10 min	0.90 g/10 min	ASTM D1238
Molding Shrinkage - Flow (0.126 in (3.20 mm))	6.0E-3 to 7.0E-3 in/in	0.60 to 0.70 %	ASTM D955
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus <sup>1</sup> (0.126 in (3.20 mm))	254000 psi	1750 MPa	ASTM D638
Tensile Strength <sup>1</sup> (Yield, 0.126 in (3.20 mm))	5300 psi	36.5 MPa	ASTM D638
Tensile Elongation <sup>1</sup>			ASTM D638
Yield, 0.126 in (3.20 mm)	3.0 %	3.0 %	
Break, 0.126 in (3.20 mm)	30 %	30 %	
Flexural Modulus <sup>2</sup> (0.126 in (3.20 mm))	287000 psi	1980 MPa	ASTM D790
Flexural Strength <sup>2</sup> (0.126 in (3.20 mm))	8540 psi	58.9 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256
-20°F (-29°C), 0.126 in (3.20 mm)	6.3 ft-lb/in	340 J/m	
73°F (23°C), 0.126 in (3.20 mm)	10 ft-lb/in	560 J/m	
Instrumented Dart Impact <sup>3</sup>			ASTM D3763
-20°F (-29°C), 0.126 in (3.20 mm), Peak Energy	290 in-lb	32.8 J	
-20°F (-29°C), 0.126 in (3.20 mm), Total Energy	380 in-lb	42.9 J	
73°F (23°C), 0.126 in (3.20 mm), Peak Energy	265 in-lb	29.9 J	
73°F (23°C), 0.126 in (3.20 mm), Total Energy	400 in-lb	45.2 J	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Unannealed, 0.126 in (3.20 mm)	205 °F	96.1 °C	
66 psi (0.45 MPa), Annealed, 0.126 in (3.20 mm)	231 °F	111 °C	
264 psi (1.8 MPa), Unannealed, 0.126 in (3.20 mm)	180 °F	82.2 °C	
264 psi (1.8 MPa), Annealed, 0.126 in (3.20 mm)	226 °F	108 °C	
Vicat Softening Temperature	234 °F	112 °C	ASTM D1525
CLTE - Flow (0.126 in (3.20 mm))	5.3E-5 in/in/°F	9.5E-5 cm/cm/°C	ASTM D696

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 °F	82 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.10 %	0.10 %
Processing (Melt) Temp	425 to 525 °F	218 to 274 °C
Mold Temperature	80 to 140 °F	27 to 60 °C
Back Pressure	150 to 500 psi	1.03 to 3.45 MPa
Clamp Tonnage	2.0 to 5.0 tons/in <sup>2</sup>	2.8 to 6.9 kN/cm <sup>2</sup>
Screw L/D Ratio	20.0:1.0	20.0:1.0
Screw Compression Ratio	1.5:1.0 to 3.5:1.0	1.5:1.0 to 3.5:1.0

#### Injection Notes

Some applications such as plating may require moisture levels as low as 0.05%.

#### Notes

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

<sup>1</sup> 2.0 in/min (51 mm/min)

<sup>2</sup> 0.20 in/min (5.1 mm/min)

<sup>3</sup> 22.0 ft/sec (6.71 m/sec)



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