

MAGNUM™ 357 HP 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 resins 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.

Automotive MAGNUM ABS resins offer a wide range of gloss, viscosity, 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°F to 190°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.

MAGNUM™ 357 HP ABS resin is a medium gloss, high heat material that has slightly higher heat resistance and a little higher melt flow rate than MAGNUM 358 HP ABS resin.

Automotive Specifications

- CHRYSLER MS-DB-191 CPN1734
- CHRYSLER MS-DB-300 CPN4412
- FORD WSS-M4D690-B1
- TOYOTA TSM 5512G-2B
- VOLKSWAGEN TL 527
- CHRYSLER MS-DB-191 CPN3826
- CHRYSLER MS-DB-300 CPN4573
- GM GMW15572P-ABS-T2
- VAG VW-TL 527 B
- VOLKSWAGEN TL 527 Type A

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.06 g/cm ³	1.06 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	2.0 g/10 min	2.0 g/10 min	ASTM D1238
Molding Shrinkage - Flow	4.0E-3 to 7.0E-3 in/in	0.40 to 0.70 %	ASTM D955
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus ¹	290000 psi	2000 MPa	ASTM D638
Tensile Strength ¹			ASTM D638
Yield	5500 psi	37.9 MPa	
Break	4800 psi	33.1 MPa	
Tensile Elongation ¹ (Break)	45 %	45 %	ASTM D638
Flexural Modulus ²	320000 psi	2210 MPa	ASTM D790
Flexural Strength ²	9000 psi	62.1 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact ³			ASTM D256
0°F (-18°C), 0.126 in (3.20 mm)	2.4 ft-lb/in	130 J/m	
73°F (23°C), 0.126 in (3.20 mm)	5.8 ft-lb/in	310 J/m	
Instrumented Dart Impact ⁴			ASTM D3763
0°F (-18°C), 0.126 in (3.20 mm), Peak Energy	200 in-lb	22.6 J	
0°F (-18°C), 0.126 in (3.20 mm), Total Energy	210 in-lb	23.7 J	
73°F (23°C), 0.126 in (3.20 mm), Peak Energy	290 in-lb	32.8 J	
73°F (23°C), 0.126 in (3.20 mm), Total Energy	380 in-lb	42.9 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)	220 °F	104 °C	
264 psi (1.8 MPa), Unannealed, 0.126 in (3.20 mm)	190 °F	87.8 °C	
Vicat Softening Temperature	248 °F	120 °C	ASTM D1525
CLTE - Flow	4.5E-5 in/in/°F	8.1E-5 cm/cm/°C	ASTM D696
Fill Analysis	Nominal Value (English)	Nominal Value (SI)	Test Method
Melt Density	1.08 g/cm ³	1.08 g/cm ³	
Melt Specific Heat	0.453 Btu/lb/°F	1890 J/kg/°C	ASTM C351
Melt Thermal Conductivity	0.94 Btu·in/hr/ft ² /°F	0.13 W/m/K	ASTM C177
No Flow Temperature	302 °F	150 °C	
Ejection Temperature	261 °F	127 °C	
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	180 to 185 °F	82 to 85 °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	500 to 540 °F	260 to 282 °C	
Mold Temperature	100 to 180 °F	38 to 82 °C	
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa	
Clamp Tonnage	2.0 to 3.0 tons/in ²	2.8 to 4.1 kN/cm ²	
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	