

MAGNUM™ 357 HP

ABS Resin

Trinseo

Message:

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.

General Information	
Features	Good Processability
	High Heat Resistance
	High Impact Resistance
	Medium Gloss
Uses	Automotive Applications
	Structural Parts
Forms	Pellets
Processing Method	Injection Molding
	Profile Extrusion
	Sheet Extrusion
	Thermoforming

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.06	g/cm ³	ASTM D792
--	1050	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	2.0	g/10 min	ASTM D1238
Melt volume-flow rate (220°C/10.0 kg)	6.00	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.40 to 0.70	%	ASTM D955
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ³	2000	MPa	ASTM D638
--	2100	MPa	ISO 527-2 ⁴
Tensile Strength			
Yield ⁵	37.9	MPa	ASTM D638
Yield	40.0	MPa	ISO 527-2 ⁶

Break ⁷	33.1	MPa	ASTM D638
Tensile Strain			
Yield	2.3	%	ISO 527-2 ⁸
Break ⁹	45	%	ASTM D638
Nominal strain at break	40	%	ISO 527-2 ¹⁰
Flexural Modulus ¹¹	2210	MPa	ASTM D790
Flexural Strength ¹²	62.1	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy notched impact strength			ISO 179/1eA ¹³
-30°C	7.00	kJ/m ²	
23°C	16.0	kJ/m ²	
Charpy impact strength			ISO 179/1eU ¹⁴
-30°C	80.0	kJ/m ²	
23°C	No Break		
Notched Izod Impact ¹⁵			ASTM D256
-18°C, 3.20 mm	130	J/m	
23°C, 3.20 mm	310	J/m	
Instrumented Dart Impact ¹⁶			ASTM D3763
-18°C, 3.20 mm, Peak Energy	22.6	J	
-18°C, 3.20 mm, Total Energy	23.7	J	
23°C, 3.20 mm, Peak Energy	32.8	J	
23°C, 3.20 mm, Total Energy	42.9	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	104	°C	ASTM D648
0.45 MPa	104	°C	ISO 75-2 ¹⁷
1.8 MPa, Unannealed, 3.20 mm	87.8	°C	ASTM D648
1.8 MPa	90.0	°C	ISO 75-2 ¹⁸
Vicat Softening Temperature			
--	120	°C	ASTM D1525
50°C/h, B (50N)	109	°C	ISO 306 ¹⁹
CLTE - Flow			
--	8.1E-5	cm/cm/°C	ASTM D696
--	8.0E-5	cm/cm/°C	ISO 11359-2 ²⁰
Fill Analysis	Nominal Value	Unit	Test Method
Melt Density	1.08	g/cm ³	
Melt Specific Heat	1890	J/kg/°C	ASTM C351
Melt Thermal Conductivity	0.13	W/m/K	ASTM C177
No Flow Temperature	150	°C	
Ejection Temperature	127	°C	
Injection	Nominal Value	Unit	
Drying Temperature	82.2 to 85.0	°C	

Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.10	%
Processing (Melt) Temp	260 to 282	°C
Mold Temperature	37.8 to 82.2	°C
Back Pressure	0.345 to 0.689	MPa
Clamp Tonnage	2.8 to 4.1	kN/cm ²
Screw L/D Ratio	20.0:1.0	
Screw Compression Ratio	1.5:1.0 to 3.5:1.0	

NOTE

1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
3.	Type I, 51 mm/min
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
5.	Type I, 51 mm/min
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
7.	Type I, 51 mm/min
8.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
9.	Type I, 51 mm/min
10.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
11.	Type I, 1.3 mm/min
12.	Type I, 1.3 mm/min
13.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
14.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
15.	0.25 mm Notch Depth
16.	3.39 m/sec
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

19.

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

20.

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

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