

MAGNUM 9010

Dow Plastics - Acrylonitrile Butadiene Styrene

General Information

Product Description

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.

MAGNUM 9000 series high gloss ABS resins are designed to offer a wide range of impact strengths and melt flow rates to meet the needs of the durables injection molding markets. The 9000 series products offer typical Izod impact strength values from 4 to 7.5 ft-lbs/in and melt flow rates ranging from 2.5 to 7.0 g/10 min. The gloss values are typically greater than 95% on the 60° Gardner scale for the highest gloss resins and greater than 90% for those products having a broader range of gloss.

Within the MAGNUM 9000 series of ABS resins, MAGNUM 9010 ABS resin is one of the highest gloss resins with a medium impact strength and high flow. MAGNUM 9010 is used primarily in injection molding durable applications like housewares and computer equipment where easy processability is desired.

General

Material Status	<ul style="list-style-type: none"> Commercial: Active
Availability	<ul style="list-style-type: none"> Latin America North America
Test Standards Available	<ul style="list-style-type: none"> ASTM ISO 10350
Agency Ratings	<ul style="list-style-type: none"> CSA C-22.2 0.6 (HB) UL 94
Forms	<ul style="list-style-type: none"> Pellets
Processing Method	<ul style="list-style-type: none"> Injection Molding

ASTM and ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density -Specific Gravity	1.04	sp gr 23/23°C	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	7.00	g/10 min	ASTM D1238
Mold Shrink, Linear-Flow	0.0040 to 0.0070	in/in	ASTM D955
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ²	369000	psi	ASTM D638
Tensile Strength @ Yield ²	6500	psi	ASTM D638
Tensile Strength @ Break ²	5100	psi	ASTM D638
Tensile Elongation @ Yld	3.0	%	ASTM D638
Tensile Elongation @ Brk ²	35	%	ASTM D638
Flexural Modulus ³	400000	psi	ASTM D790
Flexural Strength ³	11500	psi	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact ⁴			ASTM D256
(0 °F, 0.125 in)	2.00	ft-lb/in	
(73 °F, 0.125 in)	4.00	ft-lb/in	
Instrumented Dart Impact ⁵			ASTM D3763
(0 °F, 0.125 in)	Peak Energy: 80.0	in-lb	
(0 °F, 0.125 in)	Total Energy: 83.0	in-lb	
(73 °F, 0.125 in)	Peak Energy: 240	in-lb	
(73 °F, 0.125 in)	Total Energy: 370	in-lb	
Thermal	Nominal Value	Unit	Test Method
DTUL @66psi - Unannealed (0.125 in, Injection Molded)	204	°F	ASTM D648
DTUL @264psi - Unannealed (0.125 in, Injection Molded)	180	°F	ASTM D648
Vicat Softening Point	230	°F	ASTM D1525
CLTE, Flow	0.000044	in/in/°F	ASTM D696
Flammability	Nominal Value	Unit	Test Method
Flame Rating - UL (0.0580 in)	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Gardner Gloss (60°)	95		ASTM D523
Fill Analysis	Nominal Value	Unit	Test Method
Melt Density	0.882	g/cm ³	
Melt Specific Heat	0.485	Btu/lb/°F	ASTM C351
Melt Thermal Conductivity	0.89	Btu-in/hr/ft ² /°F	ASTM C177

No Flow Temperature	284 °F
Ejection Temperature	226 °F

CAMPUS® Properties ⁶

Rheological properties	Nominal Value	Unit	Test Method
Melt volume-flow rate (220°C/10.0 kg)	1.34	in ³ /10min	ISO 1133
Mechanical properties 23°C/50%/r.h.	Nominal Value	Unit	Test Method
Tensile modulus	334000	psi	ISO 527-1, -2
Yield stress	7250	psi	ISO 527-1, -2
Yield strain	2.4	%	ISO 527-1, -2
Nominal strain at break	30.0	%	ISO 527-1, -2
Charpy impact strength (+23°C)	No Break	ft-lb/in ²	ISO 179 /1eU
Charpy impact strength (-30°C)	42.8	ft-lb/in ²	ISO 179 /1eU
Charpy notched impact strength (+23°C)	9.04	ft-lb/in ²	ISO 179 /1eA
Charpy notched impact strength (-30°C)	2.86	ft-lb/in ²	ISO 179 /1eA
Thermal properties	Nominal Value	Unit	Test Method
Temp. of deflection under load (1.80 MPa)	180	°F	ISO 75-1, -2
Temp. of deflection under load (0.45 MPa)	203	°F	ISO 75-1, -2
Vicat softening temperature (50°C/h 50N)	214	°F	ISO 306
Coeff. of linear therm. expansion (parallel)	0.000051	in/in/°F	ISO 11359-1, -2
Burning Behav. at 1.6mm nom. thickn. (0.06 in, UL)	HB		ISO 1210
Other properties	Nominal Value	Unit	Test Method
Density	0.0376	lb/in ³	ISO 1183
Test specimen production	Nominal Value	Unit	Test Method
Processing conditions acc. ISO	ISO 2580-2		
Injection Molding, melt temperature	482	°F	ISO 294
Injection Molding, mold temperature	140	°F	ISO 10724
Injection Molding, injection velocity	8	in/sec	ISO 294

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	180 to 190	°F
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.10	%
Processing (Melt) Temp	425 to 525	°F
Mold Temperature	80.0 to 140	°F
Back Pressure	50.0 to 500	psi
Clamp Tonnage	2.0 to 5.0	tons/in ²
Screw L/D Ratio	20.0:1.0	
Screw Compression Ratio	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

- 1 Typical properties: these are not to be construed as specifications.
- 2 Type I, 2 in/min
- 3 Type I, 0.05 in/min
- 4 Notch Depth: 10 mil
- 5 8000 in/min
- 6 Typical properties: these are not to be construed as specifications. Additional CAMPUS® data and disclaimer information may be found on CAMPUS® Data Sheet.



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