

LUSTRAN[®] ABS 451

ABS

Injection Molding Grade

Description

Lustran ABS 451 is a soft flowing, medium impact injection molding resin designed with a unique balance of impact, heat resistance, flow and gloss. As with any product, use of Lustran ABS 451 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Typical Properties*	ASTM Test Method (Other)	Lustran [®] ABS 451
General Melt Flow Rate at 230°C/3.8-kg Load Specific Gravity Mold Shrinkage	D 1238 D 792 D 955	4.4 g/10 min 1.06 0.004 - 0.006 in/in
Mechanical Tensile Stress at Yield Tensile Modulus Flexural Stress at Yield Flexural Modulus Notched Izod Impact 0.125-in Thickness, 73°F 0.125-in Thickness, 0°F Rockwell Hardness, R Scale	D 638 D 638 D 790 D 790 D 256 D 785	6,200 psi 380,000 psi 10,800 psi 375,000 psi 3.4 ft-lbs/in 1.3 ft-lbs/in 107
Thermal HDT, Unannealed 0.5-in Thickness, 264 psi 0.5-in Thickness, 66 psi HDT, Annealed (24h @ 185°F) 0.5-in Thickness, 264 psi 0.5-in Thickness, 66 psi Vicat Softening Temperature 1 kg load, 120°C/Hour Coefficient of Linear Expansion	D 648 D 648 D 1525 D 696	177°F - 215°F - 205°F 4.6 x 10 ⁻⁵ in/in/°F
Flammability** UL 94 Flame Class: 1.5-mm Thickness 3.0-mm Thickness	UL94 UL94	HB Rating HB Rating

Injection Molding Guidelines for Lustran ABS 451 ⁽¹⁾

Actual conditions used for processing will depend on machine size, mold design, material residence time and shot size. Predrying is recommended.

Stock Temperature ⁽²⁾	450 – 525 °F
Drying Conditions ⁽³⁾	2 hours @ 180 – 190 °F
Back Pressure	0 – 25 psi
Screw Speed	Moderate
Mold Temperature ⁽⁴⁾	80 – 150 °F
Injection Rate	Moderate to High
Cushion ⁽⁵⁾	0.125” max
Screw Delay	To minimize residence ⁽⁶⁾

⁽¹⁾ A reciprocating screw injection molding machine is preferred. A general purpose screw with a 2.5:1 compression ration is suggested. A minimum L/D of 20:1 will insure melt homogeneity.

⁽²⁾ Use minimum stock temperature with minimum barrel residence time, consistent with good part quality. Measure stock temperature with pre-heated, hand held pyrometer.

⁽³⁾ Predrying is recommended in a dryer with circulating, dehumidified hot air. The inlet air dew point should be -20°F or below. Drying for 4 hours at 160-170°F is also adequate

⁽⁴⁾ Mold temperature of 110-150°F is recommended for development of maximum gloss and strength.

⁽⁵⁾ Maintain ram forward (Packing) time at minimum required to control sink marks.

⁽⁶⁾ To avoid excessive residence time, volume and weight of shot should be balanced against barrel capacity and injection stroke. A shot weight-to-machine capacity ratio of 0.5 to 0.75 is recommended.

⁽⁷⁾ Adequate mold venting is important. Vent at parting line opposite gates and/or weld line, 0.002” deep x 0.25 to 0.5” wide. Grind 0.002” flats on ejector pins.

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