INEOS ABS

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

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*

*** Flammability results are based on small scale laboratory tests for comparison purposes only and do not necessarily represent the hazard presented by this or any other material under actual fire conditions.*

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.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the INEOS ABS products mentioned in this publication. For materials mentioned which are not INEOS ABS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, *e.g., material safety data sheets and product labels*. Consult your INEOS ABS representative or contact the Product Safety and Regulatory Affairs Department at INEOS ABS.

Note: The information contained in this publication is current as of March 2009. Please contact INEOS ABS to determine whether this publication has been revised.

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