

LUSTRAN[®] ABS 288

ABS

Injection Molding Grade

Description/ Applications

Lustran ABS 288 is a very high-flow injection molding grade of ABS (acrylonitrile butadiene styrene) with good impact strength and high gloss. It is intended for use in a wide range of applications, particularly in thin-walled components for telecommunications, office equipment, consumer and other office products.

Drying

Drying prior to processing is recommended in a desiccant dehumidifying hopper dryer. An inlet air dew point of -20°F (-29°C) or below is recommended to achieve a moisture content ≤ 0.1%. Typical drying conditions are 2 hours at 180°–190°F (82°–88°C). Drying for 4 hours at 160°–170°F (71°–77°C) is also adequate.

Processing

A reciprocating screw injection molding machine is preferred. A general-purpose screw with a 2.5:1 compression ratio is suggested. A minimum L/D ratio of 20:1 will ensure melt homogeneity.

Use minimum melt temperature with minimum barrel residence time, consistent with good part quality. To avoid excessive residence time in the barrel, volume and weight of the shot should be balanced against barrel capacity and injection stroke. A shot weight-to-machine capacity ratio of 0.5–0.75 is recommended. A mold temperature of 110°–150°F (45°–65°C) is recommended for development of maximum gloss and strength, with the hotter end of this range preferred.

Typical processing parameters are noted below. Actual processing conditions will depend on machine size, mold design, material residence time, and shot size.

Typical Injection Molding Conditions	
Barrel Temperatures:	
Rear.....	455° – 480°F (235° – 250°C)
Middle.....	465° – 490°F (240° – 255°C)
Front.....	475° – 500°F (245° – 260°C)
Nozzle.....	475° – 500°F (245° – 260°C)
Melt Temperature.....	475° – 510°F (245° – 265°C)
Mold Temperature.....	110° – 150°F (45° – 65°C)
Injection Pressure.....	10,000 – 16,000 psi
Hold Pressure.....	50 – 75% of Injection Pressure
Back Pressure.....	50 – 100 psi
Screw Speed.....	Moderate
Injection Speed.....	High
Cushion	1/4 in max
Clamp.....	2 – 4 ton/in ²

Additional information on processing may be obtained by contacting an INEOS ABS technical service representative.

Regulatory Compliance Information

Where end-use requirements permit, up to 20% Lustran ABS resin regrind may be used with virgin material, provided that the material is kept free of contamination and is properly dried (see section on Drying). Any regrind used must be generated from properly molded parts, sprues, and/or runners. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Material of this type should be properly discarded.

Improperly mixed and/or dried resin may diminish the desired properties of Lustran ABS resin. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history, or offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties.

The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

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.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Lustran® ABS 288
General Specific Gravity Mold Shrinkage Melt Flow Rate at 220°C/10-kg Load 60° Gloss	D 792 D 955 D 1238 (ISO 1133) D 523	1.05 0.004 – 0.006 in/in 30 g/10 min 95%
Mechanical Tensile Stress Tensile Modulus Flexural Stress Flexural Modulus Notched Izod Impact 4 mm, 23°C 4 mm, -30°C Instrumented Impact (Total Energy) 23°C -30°C	(ISO 527) (ISO 527) (ISO 178) (ISO 178) (ISO 180) D 3763	38 MPa 2.8 GPa 66 MPa 2.4 GPa 24 KJ/m ² 13 KJ/m ² 40 J 9 J
Thermal HDT, Unannealed 4 mm, 1.8 MPa 4 mm, 0.45 MPa Vicat Softening Temperature 1 kg load, 120°C/Hour 5 kg load, 50°C/Hour	(ISO 75) (ISO 306)	 76°C 85°C 104°C 94°C
Flammability** UL 94 Flame Class: 1.5-mm Thickness 3.0-mm Thickness	(UL94) (UL94)	HB Rating 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 purpose of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

Note: The information contained in this publication is current as of February 2010. Please contact INEOS ABS to determine whether this publication has been revised.

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