INEOS ABS

LUSTRAN® ABS 552

ABS

Extrusion Grade

Description

Lustran ABS 552 resin is a medium-gloss, medium-impact extrusion grade of ABS (acrylonitrile butadiene styrene). It provides a good balance between rigidity and impact strength, and has a stiff melt flow suitable for extrusion and thermoforming. Lustran ABS 552 resin is easy to color with ABS color concentrates. This resin is designed for either profile extrusion or substrate coextrusion and can be used alone or blended with a higher-impact resin. As with any product, use of Lustran ABS 552 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

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 maximum moisture content of 0.03%. Typical drying conditions are 3-4 hours at 180°-200°F (82°-93°C).

Processing for Profile Extrusion

Extruder. To obtain an optimum balance of appearance and mechanical properties, the extruder profile should be set to deliver polymer at a melt temperature between 420° and 480°F (215° and 249°C). A barrel temperature of 420°-465°F (215-240°C) is recommended.

Screw Design. Single- or two-stage screws can be used, although a two-stage screw is preferred. For two-stage screws, a first-stage compression ratio (feed depth to metering depth) of 2.5 – 2.7 and a pump ratio (second-stage metering to first-stage metering) of 1.5 – 2.0 are recommended.

Die. Die temperature settings for Lustran ABS normally range between 410° and 465°F (210° and 241°C). The die should be adjusted to provide uniform polymer melt at the lips. The typical die land length to profile thickness ratio ranges from 15:1 to 20:1.

Please consult an INEOS ABS technical service representative for additional information on profile extrusion.

Processing for Sheet Extrusion

Extruder. To obtain an optimum balance of sheet gloss and mechanical properties, the extruder profile should be set to deliver polymers at a melt temperature between 420° and 480°F (215° and 249°C).

Screw Design. Single- or two-stage screws can be used, although a two-stage screw is preferred. For two-stage screws, a first-stage compression ratio (feed depth to metering depth) of 2.5 – 2.7 and a pump ratio (second-stage metering to first-stage metering) of 1.5 – 2.0 are recommended.

Die. Die temperature settings for Lustran ABS normally range between 410° and 465°F (210° and 241°C). The die should be adjusted to provide uniform polymer melt at the lips.

Roll Stack. Suggested polishing roll settings for Lustran ABS using a standard S wrap are noted below. Specific settings are dependent on roll diameter, sheet gauge and linear speed.

Polishing Roll	Down Stack	Up Stack
Top	180°-220°F (82°-105°C)	180°-220°F (82-105°C)
Middle	145°-185°F (63°-85°C)	170°-210°F (77°-99°C)
Bottom	180°-220°F (82°-105°C)	160°-200°F (71°-93°C)

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

Regrind Information

Where end-use requirements permit, up to 40% Lustran ABS resin regrind may be used with virgin material during extrusion, provided that the material is kept free of contamination and is properly dried (see section on Drying). Only compatible materials should be used for regrind. Lustran ABS resin is totally compatible with Centrex® resin at all ratios. Other thermoplastics, such as polystyrene, polyethylene, and polypropylene, to mention a few, are not compatible, and mixing will result in appearance and property degradation.

Any regrind used must be generated from properly extruded and/or thermoformed parts and trim scrap. 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 regrind may diminish the desired properties of Lustran 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 552 Resin** U.S. Conventional	SI Metric
General			
Specific Gravity	D 792	1.05	
Density	D 792	0.038 lb/in^3	1.05 g/cm^3
Specific Volume	D 792	26.4 in^3/lb	0.95 cm^3/g
Melt Flow Rate at 230°C/10-kg Load	D1238	11.0 g/10 min	
Melt Flow Index 220°C/10-kg Load		6.0 g/10 min	
Gloss, 60° Sheet (Formed)	D523	90 (<20)%	
Mechanical			
Tensile Stress at Yield	D 638	5,200 lb/in^2	35.9 MPa
Tensile Modulus	D 638	290,000 lb/in^2	2.0 GPa
Flexural Stress at Yield	D 790	8,600 lb/in^2	59.3 MPa
Flexural Modulus	D 790	290,000 lb/in^2	2.0 GPa
Impact Strength, Notched Izod:	D 256		
0.125-in (3.2-mm) Thickness			
73°F (23°C)		4.9 ft·lb/in	262 J/m
0°F (-18°C)		2.4 ft·lb/in	128 J/m
-30°F (-34°C)		1.9 ft·lb/in	101 J/m
Instrument Impact:[a]	D 3763		
Peak Energy			
73°F (23°C)		22 ft·lb	30 J
0°F (-18°C)		17 ft·lb	23 J
-30°F (-34°C)		12 ft·lb	16 J
Total Energy			
73°F (23°C)		32 ft·lb	43 J
0°F (-18°C)		21 ft·lb	28 J
-30°F (-34°C)		13 ft·lb	18 J
Rockwell Hardness, R Scale	D 785	103	
Thermal			
Deflection Temperature Under Load:	D 648		
Unannealed, 264 psi (1.82 MPa)		190°F	88°C
Unannealed, 66 psi (0.46 MPa)		200°F	97°C
Coefficient of Linear Thermal Expansion	D 696	4.6 E-05 in/in/°F	8.3 E-05 mm/mm/°C
Relative Temperature Index:	(UL746B)		
0.059-in (1.5-mm) Thickness			
Electrical		140°F	60°C
Mechanical with Impact		140°F	60°C
Mechanical without Impact		140°F	60°C
Flammability* **			
UL94 Flame Class:	(UL94)		
0.059-in (1.5-mm) Thickness		HB[b] Rating	

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*
***Properties tested in transverse direction (worst case) on 125-mil extruded sheet specimens with less than 10% orientation unless otherwise noted.*
****Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditons.*
[a] *0.5-in dart, 3-in clamp, 7.6 mph*
[b] *Natural color*

Note: The information contained in this publication is current as of February 2008. Please contact INEOS ABS to determine whether this publication has been revised.

INEOS ABS

INEOS ABS (USA) Corporation
INEOS ABS NAFTA
356 Three Rivers Parkway
Addyston, OH 45001

www.ineos-abs.com