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INEOS ABS

LUSTRAN® ABS 556

ABS

Extrusion Grade

Description

Lustran ABS 556 resin is a low-gloss, medium-impact extrusion grade of ABS (acrylonitrile butadiene styrene). It has good melt strength for extrusion and thermoforming, and can be easily coextruded. It is easy to color with ABS color concentrates. The recommended ABS substrate is Lustran ABS 752 resin.

Applications

Lustran ABS 556 resin is used for low-gloss applications, such as motor vehicle dashboards, interior panels, and trim. This includes recreational vehicles, cars, trucks, heavy trucks, construction vehicles, forklift trucks, and farm equipment. As with any product, use of Lustran ABS 556 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

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). 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 240C). 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.

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Typical Properties* for Natural Resin	ASTM Test Method (Other)	Lustran® ABS 556 Resin** U.S. Conventional	Lustran® ABS 556 Resin** SI Metric
General			
Specific Gravity	D 792	1.06	
Density	D 792	0.038 lb/in³	1.06 g/cm³
Specific Volume	D 792	26.4 in³/lb	0.95 cm³/g
Melt Flow Rate at 230°C/10-kg Load	D 1238	10.0 g/10 min	
Gloss, 60°, Sheet	D 523	<10%	
Mechanical			
Tensile Stress at Yield	D 638	2,800 lb/in²	19.3 MPa
Tensile Stress at Break	D 638	3,200 lb/in²	22.1 MPa
Tensile Modulus	D 638	220,000 lb/in²	1.52 GPa
Flexural Stress at Yield	D 790	4,500 lb/in²	31.0 MPa
Flexural Modulus	D 790	210,000 lb/in²	1.45 GPa
Impact Strength, Notched Izod:	D 256		
0.125-in (3.2-mm) Thickness			
73°F (23°C)		2.0 ft-lb/in	107 J/m
0°F (-18°C)		1.3 ft-lb/in	69 J/m
-40°F (-40°C)		1.0 ft-lb/in	53 J/m
Instrumented Impact:[a]	D 3763		
Peak Energy			
73°F (23°C)		19 ft-lb	26 J
0°F (-18°C)		14 ft-lb	19 J
-30°F (-34°C)		10 ft-lb	14 J
Total 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
Thermal			
Deflection Temperature Under Load:	D 648		
Unannealed, 264 psi (1.82 MPa)		187°F	86°C
Unannealed, 66 psi (0.46 MPa)		205°F	96°C
Coefficient of Linear Thermal Expansion	D 696	5.4 E-05 in/in/°F	9.7 E-05 mm/mm/°C
Relative Temperature Index:	(UL746B)		
1.47-mm (0.058-in) 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)		
1.47-mm (0.058-in) Thickness		HB 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 conditions.*

[a] 0.5-in dart, 3-in clamp, 7.6 mph.

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INEOS ABS (USA) Corporation