INEOS ABS

LUSTRAN® ABS 266

ABS

Transparent Grade

Description

Lustran ABS 266 resin is a clear injection molding grade of ABS (acrylonitrile butadiene styrene). This transparent, general-purpose grade provides clarity and toughness with ease of processing. The resin is available in transparent tint, color code 000000.

Applications

A tough, transparent grade of ABS, Lustran ABS 266 resin is used in housings, toys, lawn and garden applications, and various consumer goods. As with any product, use of Lustran ABS 266 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 moisture content ≤ 0.1%. Typical drying conditions are 2 hours at 180°F–190°F (82°C–88°C). Drying for 4 hours at 160°F–170°F (71°C–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.

For best part quality, use the lower range of the recommended melt temperature with minimum barrel residence time. 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.

The melt temperature rage of 400-450°F (205-230°C) for Lustran ABS 266 is lower than for other Lustran ABS general-purpose grades because higher melt temperatures may affect transparency and color. Mold temperatures of 110°-150°F (45°-65°C) are recommended for development of maximum strength and clarity, 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	380° – 430°F (195° – 220°C)
Middle	390° – 440°F (200° – 225°C)
Front	400° – 450°F (205° – 230°C)
Nozzle	400° – 450°F (205° – 230°C)
Melt Temperature	400° – 450°F (205° – 230°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	0 – 25 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.

Regrind Information

For injection molding grade of Lustran ABS resin, up to 20% regrind may be used with virgin material, depending upon end-use requirements of the molded part and 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 1016 Clear Tint Resin	ASTM Test Method (Other)	Units U.S. Conventional	Units SI Metric	Lustran® 266 ABS Resin U.S.	Lustran® 266 ABS Resin SI
General					
Specific Gravity	D 792			1.08	
Density	D 792	lb/in³	g/cm³	0.039	1.08
Specific Volume	D 792	in³/lb	cm³/g	25.6	0.93
Mold Shrinkage	D 955	in/in	mm/mm	0.004–0.006	
Melt Flow Rate at 230°C/3.8-kg Load	D 1238	g/10 min		5	
Optical					
Transmittance at 0.100-in Thickness	D 1003	%		86	
Haze at 0.100-in Thickness	D 1003	%		3	
Refractive Index	D 542			1.52	
Mechanical					
Tensile Stress at Yield	D 638	lb/in²	MPa	5,400	37
Tensile Stress at Break	D 638	lb/in²	MPa	4,200	30
Tensile Elongation at Yield	D 638	%		4	
Tensile Elongation at Break	D 638	%		48	
Tensile Modulus	D 638	lb/in²	GPa	286,000	2.0
Flexural Stress at Yield	D 790	lb/in²	MPa	8,500	59
Flexural Modulus	D 790	lb/in²	GPa	257,000	1.8
Impact Strength, Notched Izod:	D 256				
0.125-in (3.2-mm) Thickness 73°F (23°C)		ft·lb/in	J/m	3.3	176
Rockwell Hardness	D 785	R Scale		108	
Thermal					
Deflection Temperature, Unannealed:	D 648				
0.125-in (3.2-mm) Thickness, 264 psi		°F	°C	163	73
0.125-in (3.2-mm) Thickness, 66 psi		°F	°C	188	87
0.5-in (12.7-mm) Thickness, 264 psi		°F	°C	180	82
0.5-in (12.7-mm) Thickness, 66 psi		°F	°C	201	94
Coefficient of Linear Thermal Expansion	D 696	in/in/°F	mm/mm/°C	6.7 E-05	12.1 E-05
Relative Temperature Index:	(UL746B)				
0.059-in (1.5-mm) Thickness					
Electrical		°F	°C	122	50
Mechanical with Impact		°F	°C	122	50
Mechanical without Impact		°F	°C	122	50
Flammability**					
UL94 Flame Class:	(UL94)				
0.059-in (1.5-mm) Thickness		Rating		HB[a]	
0.118-in (3.0-mm) Thickness		Rating		HB[a]	

** 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 purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.*

[a] *Clear color.*

Note: The information contained in this publication is current as of July 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