Lustran® Elite HH 1827

INEOS ABS (USA) Corporation - Acrylonitrile Butadiene Styrene

Monday, July 25, 2011

General Information

Product Description

Lustran® Elite HH 1827 resin is an injection molding grade of ABS (Acrylonitrile Butadiene Styrene) for high-heat applications in the automotive market. With a Vicat softening temperature of 233°F (112°C)*, Elite HH 1827 provides high heat resistance, low gloss, toughness, and easy flow for processing molded-in color parts. The resin is available in natural and black colors only. Its consistent, clean, natural color makes it ideally suitable for use with color concentrates. Color concentrates for automotive color matches are available from several concentrate suppliers.

Lustran Elite HH 1827 resin offers the right balance of properties for a variety of above-the-belt-line automotive applications. It is used for parts in the sun-loaded area where low-gloss, molded-in color is desired. Typical applications include A & B pillars, door panels, sail panels, consoles and console trim, cowl vents, and lamp housings. As with any product, use of Lustran Elite HH 1827 ABS resin in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

General

Material Status	• Commercial: Active		
Regional Availability	• North America		
Features	• Good Colorability • Good Flow	• Good Toughness • High Heat Resistance	• Low Gloss
Uses	• Automotive Applications	• Automotive Interior Parts	
Agency Ratings	• EC 1907/2006 (REACH)		
Automotive Specifications	• CHRYSLER MS-DB191 Type A CPN1497 Color: Black • CHRYSLER MS-DB191 Type A CPN1734 Color: Color Match • CHRYSLER MS-DB191 Type A CPN2993 Color: 90% Color Match • CHRYSLER MS-DB191 Type A CPN3438 Color: Color As Noted On Drawing • GM GMP.ABS.002 • GM GMP.ABS.003 • GM GMP.ABS.010 • SAE J1685 ABS0131		
Appearance	• Black	• Natural Color	
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Typical Value (English)		Typical Value (SI)		Test Method
Specific Gravity	1.05		1.05	g/cm³	ASTM D792
Specific Volume	26.3	in³/lb	0.950	cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR)					ASTM D1238
220°C/10.0 kg	13	g/10 min	13	g/10 min	
230°C/3.8 kg	4.0	g/10 min	4.0	g/10 min	
Molding Shrinkage - Flow	0.0040 to 0.0070	in/in	0.40 to 0.70	%	ASTM D955
Mechanical	**Typical Value (English)**		**Typical Value (SI)**		**Test Method**
Tensile Strength (Yield)	5700	psi	39.3	MPa	ASTM D638
Tensile Stress (Yield)	6090	psi	42.0	MPa	ISO 527-2
Tensile Elongation (Break)	50	%	50	%	ASTM D638
Flexural Modulus	340000	psi	2340	MPa	ASTM D790
Flexural Modulus	341000	psi	2350	MPa	ISO 178
Flexural Strength (Yield)	10100	psi	69.6	MPa	ASTM D790

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Impact	Typical Value	(English)	Typical Value	(SI)	Test Method
Notched Izod Impact					ASTM D256
73°F (23°C), 0.125 in (3.18 mm)	3.4	ft·lb/in	180	J/m	
73°F (23°C), 0.250 in (6.35 mm)	2.5	ft·lb/in	130	J/m	
73°F (23°C), 0.500 in (12.7 mm)	2.3	ft·lb/in	120	J/m	
Notched Izod Impact Strength [2]					ISO 180/1A
-40°F (-40°C)	3.7	ft·lb/in²	7.7	kJ/m²	
73°F (23°C)	8.2	ft·lb/in²	17	kJ/m²	
Thermal	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Deflection Temperature Under Load					ASTM D648
66 psi (0.45 MPa), Unannealed, 0.125 in (3.18 mm)	203	°F	95.0	°C	
Deflection Temperature Under Load					ASTM D648
264 psi (1.8 MPa), Unannealed, 0.125 in (3.18 mm)	181	°F	82.8	°C	
264 psi (1.8 MPa), Unannealed, 0.250 in (6.35 mm)	199	°F	92.8	°C	
264 psi (1.8 MPa), Unannealed, 0.500 in (12.7 mm)	205	°F	96.1	°C	
Vicat Softening Temperature	233	°F	112	°C	ASTM D1525 [3]
Vicat Softening Temperature	214	°F	101	°C	ISO 306/B50
CLTE - Flow (-22 to 86°F (-30 to 30°C))	0.000046	in/in/°F	0.000083	cm/cm/°C	ASTM D696
Flammability	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Burning Rate [4]	2.0	in/min	51	mm/min	SAE J1685
Flame Rating - UL					UL 94
0.0590 in (1.50 mm)	HB		HB		
0.126 in (3.20 mm)	HB		HB		
UL	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
RTI Str (0.0590 in (1.50 mm))	140	°F	60.0	°C	UL 746
RTI Imp (0.0590 in (1.50 mm))	140	°F	60.0	°C	UL 746
RTI Elec (0.0590 in (1.50 mm))	140	°F	60.0	°C	UL 746

Processing Information

Injection	Typical Value	(English)	Typical Value	(SI)
Drying Temperature	180 to 190	°F	82.2 to 87.8	°C
Drying Time	2.0	hr	2.0	hr
Suggested Max Moisture	< 0.10	%	< 0.10	%
Suggested Max Regrind	20	%	20	%
Rear Temperature	460 to 490	°F	238 to 254	°C
Middle Temperature	470 to 500	°F	243 to 260	°C
Front Temperature	480 to 510	°F	249 to 266	°C
Nozzle Temperature	480 to 510	°F	249 to 266	°C
Processing (Melt) Temp	480 to 520	°F	249 to 271	°C
Mold Temperature	120 to 160	°F	48.9 to 71.1	°C
Injection Pressure	13000 to 20000	psi	89.6 to 138	MPa
Injection Rate	Fast		Fast	
Back Pressure	25.0 to 100	psi	0.172 to 0.689	MPa
Clamp Tonnage	2.0 to 4.0	tons/in²	2.8 to 5.5	kN/cm²

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Injection	Typical Value (English)		Typical Value (SI)	
Cushion	< 0.250	in	< 6.35	mm
Screw L/D Ratio	20.0:1.0		20.0:1.0	
Screw Compression Ratio	2.5:1.0		2.5:1.0	

Injection Notes

Hold Pressure: 50 to 75% of Injection Pressure
Screw Speed: Moderate
Drying at 4 hours at 160°-170°F is also adequate.

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 4x10 mm bar

[3] Rate B (120°C/h), Loading 1 (10 N)

[4] 2x100x355 mm