INEOS ABS

LUSTRAN® SMA 2171

SMA

Injection Molding Grade

Description

Lustran SMA 2171 is a high heat injection molding grade of impact-modified SMA (styrene/maleic anhydride) terpolymer offering an exceptional balance of processability and performance. Lustran SMA 2171 has high heat resistance coupled with excellent chemical and impact resistance. As with any product, use of Lustran SMA 2171 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 of ≤ 0.1%. Typical drying conditions are 2-3 hours at 180°–200°F (82°–93°C).

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.

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	460° – 490°F (240° – 255°C)
Middle	470° – 500°F (245° – 260°C)
Front	480° – 510°F (250° – 265°C)
Nozzle	480° – 510°F (250° – 265°C)
Melt Temperature	480° – 520°F (250° – 270°C)
Mold Temperature	140° – 180°F (60° – 85°C)
Back Pressure	25 – 50 psi
Screw Speed	Moderate
Injection Speed	Moderate
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.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Lustran® SMA 2171
General		
Specific Gravity	D 792	1.07
Melt Flow Rate at 220°C/10-kg Load	D 1238	6 g/10 min
Mechanical		
Tensile Stress at Yield	D 638	4,540 psi
Tensile Stress at Yield	(ISO 527)	30 MPa
Tensile Stress at Break	D 638	4,220 psi
Tensile Stress at Break	(ISO 527)	31 MPa
Tensile Modulus	D 638	295,000 psi
Tensile Modulus	(ISO 527)	2,050 MPa
Flexural Stress at Yield	D 790	13,500 psi
Flexural Stress at Yield	(ISO 178)	57 MPa
Flexural Modulus	D 790	300,000 psi
Flexural Modulus	(ISO 178)	2,030 MPa
Notched Izod Impact	D 256	
0.125-in Thickness, 23°C		3.3 ft-lbs/in
0.125-in Thickness, -30°C		1.5 ft-lbs/in
Notched Izod Impact	ISO 180/1A	
4 mm, 23°C		18 kJ/m^2
4 mm, -30°C		7.3 kJ/m^2
Multi-Axial Impact, Fractovis J	D 3763	
23°C		
Energy Peak		16.0 J
Energy Max		20.0 J
-30°C		
Energy Peak		8.0 J
Energy Max		8.5 J
Rockwell Hardness, R Scale	D 785	98
Thermal		
HDT, Unannealed	D 648	
0.125-in Thickness, 264 psi		90°C
0.125-in Thickness, 66 psi		105°C
HDT, Unannealed	(ISO 75)	
4 mm, 1.8 MPa		92°C
4 mm, 0.46 MPa		106°C
Vicat Softening Temperature		
1 kg load, 120°C/Hour	D 1525	127°C
5 kg load, 50°C/Hour	(ISO 306)	110°C

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*