

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

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

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