

LUSTRAN[®] SMA 2316

SMA

16% Glass-Reinforced Grade

Description

Lustran SMA 2316 is a 16% glass-reinforced molding grade of impact-modified SMA (styrene/maleic anhydride) terpolymer offering an exceptional balance of processability and performance. Lustran SMA 2316 has high heat resistance coupled with rigidity and decorability, making it an ideal choice for automotive instrument panel and console applications. As with any product, use of Lustran SMA 2316 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°– 510°F (250°– 265°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 | ISO Test Method (Other) | Lustran® SMA 2316 Resin |
|--|--|--|
| General Specific Gravity Density Mold Shrinkage Parallel to Flow Cross to Flow Melt Flow Rate at 220°C/10-kg Load Glass Level | (ASTM D 792) ISO 1183 ISO 2577 (ASTM D 1238) | 1.2 1.198 g/cm ³ 0.028% 0.035% 3.3 g/10 min 16% |
| Mechanical Tensile Stress at Yield: -30°C 23°C 85°C 107°C Tensile Stress at Yield Tensile Stress at Fail, 23°C Tensile Modulus, 23°C Tensile Modulus Flexural Stress at Yield Flexural Stress at Yield Flexural Modulus Flexural Modulus Impact Strength, Notched Izod (4x10 mm): 23°C -40°C Impact Strength, Notched Izod (0.5 x 0.125 in): 23°C -30°C Impact Strength, Charpy Notched: 23°C -30°C | ISO 527 (ASTM D 638) ISO 527 ISO 527 (ASTM D 638) ISO 178 (ASTM D 790) ISO 178 (ASTM D 790) ISO 180/1A (ASTM D 256) ISO 179/1eA | 90.1 MPa 83.6 MPa 65.4 MPa 56.2 MPa 11,280 lb/in ² 84.7 MPa 5,780 MPa 797,000 lb/in ² 129 MPa 18,000 lb/in ² 5,290 MPa 637,000 lb/in ² 9.5 kJ/m ² 8.1 kJ/m ² 1.6 ft-lbs/in 1.3 ft-lbs/in 10.6 kJ/m ² 7.7 kJ/m ² |
| Thermal Deflection Temperature Under Load (4-mm): 18 MPa 0.46 MPa Deflection Temperature Under Load (0.5 x 0.125-in): 264 psi 64 psi Vicat Softening Temperature: 5-kg, 50°C/hour Vicat Softening Temperature, Method C: 1-kg, 120°C/hour Coefficient of Linear Thermal Expansion: Flow Cross-Flow | ISO 75-2A (ASTM D 648) ISO 306 (ASTM D 1525) ISO 11359-2 | 121°C 129°C 103°C 128°C 125.9°C 141°C 0.000041 mm/mm/°C 0.000047 mm/mm/°C |
| Other Burn Rate Poissons Ratio: Flow Direction Cross-Flow Direction | (SAE J 369) ISO 527 | 29.2 mm/min 0.41 0.39 |