

LUSTRAN[®] ABS 248

ABS

Injection Molding Grade

Description

Lustran[®] ABS 248 resin is a high-gloss, medium-impact grade of ABS (Acrylonitrile Butadiene Styrene). This general-purpose injection molding grade offers a good balance of physical properties. It also complies with FDA regulation 21 CFR 181.32 for repeated-use food contact applications in certain colors. The resin is available in natural, black and custom colors.

Applications

Lustran ABS 248 is used in applications requiring rigidity and intermediate abuse resistance. Typical applications include housings for small appliances and toys. As with any product, use of Lustran ABS 248 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. A mold temperature of 110°-150°F (45°-65°C) is recommended for development of maximum gloss and strength, 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..... | 455° – 480°F (235° – 249°C) |
| Middle..... | 465° – 490°F (241° – 254°C) |
| Front..... | 475° – 500°F (246° – 260°C) |
| Nozzle..... | 475° – 500°F (246° – 260°C) |
| Melt Temperature..... | 475° – 510°F (246° – 266°C) |
| Mold Temperature..... | 110° – 150°F (43° – 66°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.

| Typical Properties* for Natural Resin | ASTM Test Method (Other) | Lustran® ABS 248 Resin | |
|--|--|--|--|
| | | U.S. Conventional | SI Metric |
| General Specific Gravity Density Specific Volume Mold Shrinkage Melt Flow Rate at 230°C/3.8-kg Load Melt Flow Index 220°C/10-kg Load | D 792 D 792 D 792 D 955 D1238 | 1.06 0.038 lb/in ³ 26.1 in ³ /lb 0.004 – 0.006 in/in 5.0 g/10 min 13.0 g/10 min | 1.06 g/cm ³ 0.94 cm ³ /g 0.004 – 0.006 mm/mm |
| Mechanical Tensile Stress at Yield Tensile Modulus Flexural Stress at Yield Flexural Modulus Impact Strength, Notched Izod: 0.125-in (3.2-mm) Thickness 73°F (23°C) -40°F (-40°C) Rockwell Hardness, R Scale | D 638 D 638 D 790 D 790 D 256 D 785 | 6,800 lb/in ² 380,000 lb/in ² 10,700 lb/in ² 390,000 lb/in ² 4.2 ft-lb/in 0.9 ft-lb/in 112 | 47 MPa 2.6 GPa 74 MPa 2.7 GPa 224 J/m 48 J/m |
| Thermal Deflection Temperature Under Load: 0.5-in (12.7-mm) Thickness Unannealed 264 psi (1.82 MPa) 66 psi (0.46 MPa) Annealed 264 psi (1.82 MPa) 66 psi (0.46 MPa) Annealed, Compression Molded 264 psi (1.82 MPa) Coefficient of Linear Thermal Expansion Relative Temperature Index: 1.47-mm (0.058-in) Thickness Electrical Mechanical with Impact Mechanical without Impact Vicat Softening Temperature, Rate B | D 648 D 696 (UL746B) D 1525 | 187°F 200°F 204°F 212°F 215°F 4.5 E-05 in/in/°F 176°F 176°F 176°F 225°F | 86°C 93°C 96°C 100°C 102°C 8.1 E-05 mm/mm/°C 80°C 80°C 80°C 107°C |
| Flammability** UL94 Flame Class: 1.5-mm (0.059-in) Thickness 3.0-mm (0.118-in) Thickness 6.0-mm (0.236-in) Thickness | (UL94) | HB Rating HB Rating HB Rating | |

INEOS
ABS

INEOS ABS (USA) Corporation