

# Lustran 451

Acrylonitrile Butadiene Styrene (ABS)

## TECHNICAL DATASHEET

### DESCRIPTION

Lustran® 451 is a easy flowing, medium impact injection molding resin designed with a unique balance of impact, heat resistance, flow and gloss.

### FEATURES

- Medium impact strength
- Medium flow
- Unique balance of impact, heat resistance, flow and gloss
- UL 94 HB

### APPLICATIONS

- Major appliance

| Property, Test Condition                         | Standard    | Unit                    | Values |
|--|-------------|-------------------------|--------|
| <b>Rheological Properties</b>                    |             |                         |        |
| Melt Flow Rate, 200 °C/5 kg                      | ASTM D 1238 | g/10 min                | 1.8    |
| Melt Flow Rate, 230 °C/3.8 kg                    | ASTM D 1238 | g/10 min                | 4.4    |
| <b>Mechanical Properties</b>                     |             |                         |        |
| Izod Notched Impact Strength, 23°C (73°F)        | ASTM D 256  | ft-lb/in                | 3.4    |
| Izod Notched Impact Strength, -18°C (0°F)        | ASTM D 256  | ft-lb/in                | 1.3    |
| Tensile Stress at Yield, 23° C                   | ASTM D 638  | psi                     | 6200   |
| Tensile Modulus                                  | ASTM D 638  | psi x 10 <sup>3</sup>   | 380    |
| Flexural Modulus                                 | ASTM D 790  | psi x 10 <sup>3</sup>   | 375    |
| Flexural Stress at 5% Deflection                 | ASTM D 790  | psi                     | 10800  |
| Hardness, Rockwell                               | ASTM D 785  | R scale                 | 107    |
| <b>Thermal Properties</b>                        |             |                         |        |
| Vicat Softening Temperature, B/1 ( 120°C/h, 10N) | ASTM D 1525 | °F                      | 205    |
| DTUL @ 264 psi - Unannealed                      | ASTM D 648  | °F                      | 177    |
| DTUL @ 264 psi - Annealed                        | ASTM D 648  | °F                      | 215    |
| Coefficient of Linear Thermal Expansion          | ASTM D 696  | 10 <sup>-4</sup> (-)/°F | 0.46   |
| <b>Other Properties</b>                          |             |                         |        |
| Density  | ASTM D 792  | -                       | 1.06   |

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| Property, Test Condition | Standard   | Unit  | Values        |
|--------------------------|------------|-------|---------------|
| <b>Processing</b>        |            |       |               |
| Linear Mold Shrinkage    | ASTM D 955 | in/in | 0.004 - 0.006 |
| Drying Temperature       |            | °F    | 175           |
| Drying Time              |            | h     | 2-4           |

Typical values for uncolored products

### SUPPLY FORM

Lustran® ABS (Acrylonitrile Butadiene Styrene) resins are available in bulk railcar, bulk truckload and 726kg box quantities.

### REGULATORY COMPLIANCE

Please refer to Styrolution web site or contact Styrolution Technical Service for further information.

### 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.

### PRODUCT SAFETY

Safety Data Sheets and product labels provide information concerning the health and safety precautions that must be observed when handling the Styrolution products mentioned in this publication. No adverse effects on the health of processing personnel have been observed if the products are correctly processed and the production areas are suitably ventilated. For styrene, acrylonitrile, alpha-methyl styrene, maleic anhydride and 1, 3-butadiene, the maximum allowable workplace concentrations must be observed according to current local and federal regulations. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. This information is available in safety data sheets and on product labels. If there are questions or concerns, consult your Styrolution representative or contact the Product Safety and Regulatory Affairs Department at Styrolution.

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