

Styrolux 684D

Styrene Butadiene Copolymer (SBC)

TECHNICAL DATASHEET

DESCRIPTION

Styrolux® 684D is a clear styrene-butadiene copolymer (SBC) used in injection molding for parts with enhanced toughness as well as in sheet and film extrusion and blow molding. Parts made of Styrolux® 684D reveal excellent printability.

FEATURES

- High clarity
- Improved toughness
- Good printability

APPLICATIONS

- Food and non-food packaging
- Container, cups and lids
- Toys
- Extruded sheet and thin film
- Medical devices
- Blow moldings

| Property, Test Condition | Standard | Unit | Values |
|---|-------------|-----------------------|--------|
| Rheological Properties | | | |
| Melt Flow Rate, 200 °C/5 kg | ASTM D 1238 | g/10 min | 10 |
| Mechanical Properties | | | |
| Izod Notched Impact Strength, 23 °C (73 °F) | ASTM D 256 | ft-lb/in | 0.8 |
| Instrumented Dart Impact (total energy) | ASTM D 3763 | in-lbs | 196 |
| Instrumented Dart Impact (Peak force) | ASTM D 3763 | in-lbs | 97.8 |
| Tensile Stress at Yield, 23 °C | ASTM D 638 | psi | 3770 |
| Tensile Strain at Break, 23 °C | ASTM D 638 | % | 250 |
| Tensile Modulus | ASTM D 638 | psi x 10 ³ | 190 |
| Tensile Modulus (MD) | ASTM D 882 | psi | 191000 |
| Tensile Modulus (TD) | ASTM D 882 | psi | 171000 |
| Elongation at Break (MD) | ASTM D 882 | | 260 |
| Elongation at Break (TD) | ASTM D 882 | % | 100 |
| Flexural Strength, 23 °C | ASTM D 790 | | 4500 |
| Flexural Modulus, 23 °C | ASTM D 790 | psi x 10 ³ | 170 |
| Hardness, Shore D | ASTM D 2240 | - | 68 |

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| Property, Test Condition | Standard | Unit | Values |
|--|---------------|----------------------------|-------------------|
| Elemendorf Tear (MD) | ASTM D 1922 | lbs | 0.56 |
| Elemendorf Tear (TD) | ASTM D 1922 | lbs | 0.52 |
| Thermal Properties | | | |
| Vicat Softening Temperature, B/1 (120 °C/h, 10N) | ASTM D 1525 | °F | 186 |
| DTUL @ 264 psi - Unannealed | ASTM D 648 | °F | 158 |
| DTUL @ 66 psi - Unannealed | ASTM D 648 | °F | 170 |
| Coefficient of Linear Thermal Expansion | ASTM D 696 | 10 ⁻⁴ /°F | 0.72 |
| Electrical Properties | | | |
| Dielectric Constant at 106 CPS (1000000 Hz, 0,0394 in) | ASTM D 150 | - | 2.5 |
| Volume Resistivity | ASTM D 257 | - | >10 ¹³ |
| Surface Resistivity | ASTM D 257 | - | >10 ¹⁴ |
| Optical Properties | | | |
| Refractive Index, Sodium D Line | ASTM D 542 | - | 1.575 |
| Light Transmission at 550 nm | ASTM D 1003 | % | 90 |
| Haze | ASTM D 1003 | % | 1.5 |
| Other Properties | | | |
| Density | ASTM D 792 | lb/in ³ | 1.01 |
| Water Absorption, Saturated at 23 °C | ASTM D 570 | % | 0.07 |
| Oxygen Transmission Rate (23 °C/0% RH) | ASTM D 3985 | cc/100in ² /day | 8060 |
| Water Vapor Transmission Rate (WVTR) (23 °C/0% to 85% RH gradient) | ASTM F1249-06 | g/100in ² /day | 44.9 |
| Processing | | | |
| Linear Mold Shrinkage | ASTM D 955 | in/in | 0.0065 |

Typical values for uncolored products

SUPPLY FORM

Styrolux is supplied in pellet form and should be kept in its original containers in cool, dry place. Avoid direct exposure to sunlight. Styrolux® can be stored in silos at temperatures well below 45 °C.

PRODUCT SAFETY

During processing of Styrolux® small quantities of styrene monomer may be released into the atmosphere. At styrene vapor concentrations below 20 ppm no negative effects on health are expected. In our experience, the concentration of styrene does not exceed 1 ppm in well ventilated workplaces - that is where five to eight air changes per hour are made. For safety information please refer to our Material Safety Data Sheet for this product.

DISCLAIMER

The aforementioned data shall constitute the agreed contractual quality of the product sold by INEOS Styrolution at the time of passing of risk. INEOS Styrolution does not make any further warranty, representation or guarantee of any kind, express or implied, regarding the suitability of the product for any particular purpose or application and INEOS Styrolution disclaims all liability in connection therewith. The customer himself is required to verify whether or not the product is suitable for the further processing or application intended and whether or not the product complies with the relevant statutory requirements. Unless explicitly and individually otherwise agreed in writing, INEOS Styrolution's sole and exclusive liability with respect to its products is set forth in INEOS Styrolution's General Terms and Conditions for Sale.
