# Styrolux® 3G33

## Styrene Butadiene Block Copolymer

## BASF Corporation

| Product Description |
|---|
| Styrolux 3G33 is a thermoplastic styrene-butadiene block copolymer which is suitable for injection molding, extrusion and thermoforming. It offers an outstanding combination of crystal clarity and good toughness. |

| General | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Availability | • North America | | |
| Additive | • Impact Modifier | | |
| Features | • Good Toughness | • High Clarity | • Impact Modified |
| Agency Ratings | • FDA Unspecified Rating | • USP Class VI | |
| RoHS Compliance | • RoHS Compliant | | |
| Appearance | • Clear/Transparent | | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion<br>• Film Extrusion | • Injection Molding<br>• Thermoforming | |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | | | |
| -- | 1.02 | g/cm³ | ASTM D792 |
| -- | 1020 | kg/m³ | ISO 1183 [2] |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg) | 11 | g/10 min | ASTM D1238 |
| Melt volume-flow rate (200°C/5.0 kg) | 12.0 | cm³/10min | ISO 1133 [2] |
| Molding Shrinkage - Flow | 0.65 | % | ASTM D955 |
| Water Absorption (Saturation, 23°C) | 0.070 | % | ASTM D570 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | | | |
| 23°C [3] | 1720 | MPa | ASTM D638 |
| -- | 1600 | MPa | ISO 527-2 [2] |
| Tensile Strength | | | |
| Yield, 23°C | 28.3 | MPa | ASTM D638 |
| Yield | 32.0 | MPa | ISO 527-2 [2] |
| Tensile Strain | | | |
| Yield | 2.0 | % | ISO 527-2 [2] |
| Break, 23°C | 100 | % | ASTM D638 |
| Nominal strain at break | 40 | % | ISO 527-2 [2] |
| Flexural Modulus | | | |
| 23°C | 1480 | MPa | ASTM D790 |
| 23°C | 1750 | MPa | ISO 178 |
| Flexural Strength | | | |
| 23°C | 31.0 | MPa | ASTM D790 |
| 23°C | 45.0 | MPa | ISO 178 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Charpy notched impact strength (23°C) | 4.00 | kJ/m² | ISO 179/1eA [2] |
| Charpy Unnotched Impact Strength | | | ISO 179 |
| -30°C | 30 | kJ/m² | |
| 23°C | 100 | kJ/m² | |
| Notched Izod Impact (23°C) | 27.0 | J/m | ASTM D256 |
| Unnotched Izod Impact Strength (23°C) | 3.50 | kJ/m² | ISO 180 |
| Instrumented Dart Impact (Total Energy) | 5.00 | J | ASTM D3763 |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Durometer Hardness (Shore D) | 68 | | ASTM D2240 |

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| Thermal | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Deflection Temperature Under Load | | | |
| 0.45 MPa, Unannealed | 82.0 | °C | ASTM D648 |
| 0.45 MPa | 77.0 | °C | ISO 75-2 [2] |
| 1.8 MPa, Unannealed | 66.0 | °C | ASTM D648 |
| 1.8 MPa | 63.0 | °C | ISO 75-2 [2] |
| Vicat Softening Temperature | | | |
| -- | 91.0 | °C | ASTM D1525 [4] |
| 50°C/h, B (50N) | 56.0 | °C | ISO 306 [2] |
| CLTE | | | |
| Flow | 0.000075 | cm/cm/°C | ISO 11359-2 |
| Transverse | 0.000072 | cm/cm/°C | ASTM E831 |

| Electrical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Surface Resistivity | > 1.0E+14 | ohms | ASTM D257<br>IEC 60093 [2] |
| Volume Resistivity | | | |
| -- | > 1.0E+13 | ohm·cm | ASTM D257 |
| -- | > 1.0E+11 | ohm·m | IEC 60093 [2] |
| Dielectric Constant | | | |
| 1.00 mm, 1 MHz | 2.50 | | ASTM D150 |
| 100 Hz | 2.50 | | IEC 60250 [2] |
| 1 MHz | 2.50 | | IEC 60250 [2] |
| Comparative tracking index | 600 | | IEC 60112 [2] |
| Electric Strength (1.50 mm) | 140 | kV/mm | IEC 60243-1 |

| Optical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Refractive Index | 1.573 | | ASTM D542 |
| Transmittance | 92.0 | % | ASTM D1003 |
| Haze (25.4 µm, Blown Film) | 0.21 | % | ASTM D1003 |

| Injection | Nominal Value | Unit |
|---|---|---|
| Processing (Melt) Temp | 180 to 250 | °C |
| Mold Temperature | 30.0 to 50.0 | °C |

| Extrusion | Nominal Value | Unit |
|---|---|---|
| Melt Temperature | 190 to 230 | °C |

**Notes**

[1] Typical properties: these are not to be construed as specifications.

[2] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

[3] 51 mm/min

[4] Rate B (120°C/h), Loading 1 (10 N)