

DESCRIPTION

Styrolution PS 158K is a heat resistant, rapid freezing general purpose grade. It is suitable for expanded sheet and film; for blends with high impact Styrolution PS in heat contact applications; for transparent, impact resistant applications in blends with Styrolux.

FEATURES

- High heat resistance GPPS
- High transparency

APPLICATIONS

- Replacement of SAN in several application like water filter containers, pen parts etc.
- Transparent sheet for Showcases & displays, consumer electronics, household application, photo frames, building material etc.
- Ideal material for physically or chemically foamed high-quality foamed articles, such as foam containers, labels or profiles (PSP / XPS)
- In blends with high impact polystyrene or Styrolux
- Injection molded articles

| Property, Test Condition | Standard | Unit | Values |
|---------------------------------------|-----------|-------------------------|--------|
| Rheological Properties | | | |
| Melt Flow Rate, 200 °C/5 kg | ISO 1133 | g/10 min | 3 |
| Melt Volume Rate, 200 °C/5 kg | ISO 1133 | cm ³ /10 min | 3 |
| Mechanical Properties | | | |
| Izod Notched Impact Strength, 23 °C | ISO 180/A | kJ/m ² | 2.5 |
| Charpy Notched Impact Strength, 23° C | ISO 179 | kJ/m ² | 3 |
| Charpy Unnotched, 23° C | ISO 179 | kJ/m ² | 17 |
| Tensile Stress at Yield, 23° C | ISO 527 | MPa | 55 |
| Tensile Strain at Break, 23° C | ISO 527 | % | 3 |
| Tensile Modulus | ISO 527 | MPa | 3300 |
| Tensile Creep Modulus (1000h) | ISO 899 | MPa | 2600 |
| Tensile Creep Modulus (1h) | ISO 899 | MPa | 3300 |
| Flexural Strength | ISO 178 | MPa | 103 |

Styrolution PS 158K

General Purpose Polystyrene (GPPS)

TECHNICAL DATASHEET

| Property, Test Condition | Standard | Unit | Values |
|---|-------------|----------------------|-----------|
| Hardness, Ball Indentation | ISO 2039-1 | MPa | 150 |
| Thermal Properties | | | |
| Vicat Softening Temperature VST/B/50 (50N, 50°C/h) | ISO 306 | °C | 101 |
| Vicat Softening Temperature, B/1 (120°C/h, 10N) | ASTM D 1525 | °C | 108 |
| Vicat Softening Temperature, VST/A/50 (10N, 50°C/h) | ISO 306 | °C | 106 |
| Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa) | ISO 75 | °C | 86 |
| Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa) | ISO 75 | °C | 98 |
| Coefficient of Linear Thermal Expansion | ISO 11359 | 10 ⁻⁶ /°C | 80 |
| Thermal Conductivity | DIN 52612-1 | W/(m K) | 0.17 |
| Electrical Properties | | | |
| Dielectric Constant (100 Hz) | IEC 60250 | - | 2.5 |
| Dissipation Factor (100 Hz) | IEC 60250 | 10 ⁻⁴ | 0.9 |
| Dissipation Factor (1 MHz) | IEC 60250 | 10 ⁻⁴ | 0.5 |
| Dielectric Strength, Short Time, 1.5 mm | IEC 60243-1 | kV/mm | 135 |
| Relative Permittivity (100 Hz) | IEC 60250 | - | 2.5 |
| Relative Permittivity (1 MHz) | IEC 60250 | - | 2.5 |
| Volume Resistivity | IEC 60093 | Ohm*m | >1E16 |
| Surface Resistivity | IEC 60093 | Ohm | >1E14 |
| Other Properties | | | |
| Density | ISO 1183 | kg/m ³ | 1048 |
| Bulk Density (with external lubricant) | | kg/m ³ | 600 |
| Water Absorption, Saturated at 23°C | ISO 62 | % | <0.1 |
| Moisture Absorption, Equilibrium 23°C/50% RH | ISO 62 | % | <0.1 |
| Processing | | | |
| Linear Mold Shrinkage | ISO 294-4 | % | 0.3 - 0.6 |
| Melt Temperature Range | ISO 294 | °C | 180 - 260 |
| Mold Temperature Range | ISO 294 | °C | 10 - 60 |

| Property, Test Condition | Standard | Unit | Values |
|--------------------------|----------|------|--------|
| Injection Velocity | ISO 294 | mm/s | 200 |

Typical values for uncolored products

SUPPLY FORM

Styrolution PS 158K should be kept in its original containers in cool, dry place. Avoid direct exposure to sunlight. Styrolution PS 158K can be stored in silos.

PROCESSING

Styrolution PS 158K can be injection molded at temperatures between 180 and 280°C. Recommended mold temperatures are between 10 and 60°C. Extrusion melt temperature should not exceed 240°C.

PRODUCT SAFETY

During processing of Styrolution PS resins 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. Further information can be found in our Styrolution PS safety data sheets.

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