# Styrolution PS 168N

General Purpose Polystyrene (GPPS)

TECHNICAL DATASHEET

## DESCRIPTION

Styrolution PS 168N is a high molecular weight, heat resistant grade used where high strength is required. Suitable for physically or chemically expanded extruded sheet. Also use as a blend component with high impact polystyrene or Styrolux SBC.

## FEATURES

- High molecular weight, heat resistant grade used where high strength is required.
- Suitable for physically or chemically expanded extruded sheet
- Suitable for physically or chemically expanded extruded sheet
- Blend with high impact polystyrene or Styrolux SBC

## APPLICATIONS

- Foamed meat trays, foamed labels.
- In mixtures with high impact polystyrene for coffee cups, lids, etc.
- In mixtures with Styrolux for transparent, impact resistant cups, beakers and lids

| Property, Test Condition | Standard | Unit | Values |
|---|---|---|---|
| **Rheological Properties** | | | |
| Melt Flow Rate, 200 °C/5 kg | ISO 1133 | g/10 min | 1.2 |
| Melt Volume Rate, 200 °C/5 kg | ISO 1133 | cm³/10 min | 1.5 |
| **Mechanical Properties** | | | |
| Izod Notched Impact Strength, 23 °C | ISO 180/A | kJ/m² | 2 |
| Izod Notched Impact Strength, -30 °C | ISO 180/A | kJ/m² | 2 |
| Charpy Notched Impact Strength, 23° C | ISO 179 | kJ/m² | 4 |
| Charpy Unnotched, 23° C | ISO 179 | kJ/m² | <25 |
| Tensile Stress at Yield, 23° C | ISO 527 | MPa | 59 |
| 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 | 106 |
| Hardness, Ball Indentation | ISO 2039-1 | MPa | 150 |
| **Thermal Properties** | | | |
| Vicat Softening Temperature VST/B/50 (50N, 50°C/h) | ISO 306 | °C | 101 |

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INEOS STYROLUTION

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General Purpose Polystyrene (GPPS)

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| Property, Test Condition | Standard | Unit | Values |
|---|---|---|---|
| Vicat Softening Temperature, B/1 ( 120°C/h, 10N) | ASTM D 1525 | °C | 108 |
| 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/m³ | 1048 |
| Bulk Density (with external lubricant) | | kg/m³ | 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 - 280 |
| Mold Temperature Range | ISO 294 | °C | 10 - 60 |
| Injection Velocity | ISO 294 | mm/s | 200 |

Typical values for uncolored products

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## SUPPLY FORM

Styrolution PS 168N should be kept in its original containers in cool, dry place. Avoid direct exposure to sunlight. It can be stored in silos.

## PROCESSING

Styrolution PS 168N 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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