

## Styrolution PS 168N/L

General Purpose Polystyrene (GPPS)

TECHNICAL  
DATASHEET

## DESCRIPTION

Styrolution PS 168N/L is a high molecular weight, heat resistant grade with high mechanical strength. It is suitable for physically or chemically expanded extruded sheet. It is also suitable for use as blend component with high impact polystyrene or Styrolux.

## FEATURES

- High molecular weight
- High heat resistance
- High mechanical strength
- UL 94 HB (Antwerp only)

## APPLICATIONS

- Foam sheet for meat & fruit trays
- BOPS sheet

| Property, Test Condition                                      | Standard    | Unit                    | Values |
|---------------------------------------------------------------|-------------|-------------------------|--------|
| Rheological Properties                                        |             |                         |        |
| Melt Volume Rate, 200 °C/5 kg                                 | ISO 1133    | cm <sup>3</sup> /10 min | 1.5    |
| Mechanical Properties                                         |             |                         |        |
| Izod Notched Impact Strength, 23 °C (73 °F)                   | ASTM D 256  | kJ/m <sup>2</sup>       | 53     |
| 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, 23 °C                                      | ISO 178     | MPa                     | 106    |
| Flexural Modulus, 23 °C                                       | ISO 178     | MPa                     | 2280   |
| 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    |
| 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 <sup>-6</sup> /°C    | 80     |

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| Property, Test Condition        | Standard      | Unit              | Values            |
|---------------------------------|---------------|-------------------|-------------------|
| Thermal Conductivity            | DIN 52612-1   | W/(m K)           | 0.17              |
| Electrical Properties           |               |                   |                   |
| Dielectric Constant (100 Hz)    | IEC 62631-2-1 | -                 | 2.5               |
| Dissipation Factor (100 Hz)     | IEC 62631-2-1 | 10 <sup>-4</sup>  | 0.9               |
| Dissipation Factor (1 MHz)      | IEC 62631-2-1 | 10 <sup>-4</sup>  | 0.5               |
| Volume Resistivity              | IEC 62631-3-1 | Ohm*m             | >10 <sup>16</sup> |
| Surface Resistivity             | IEC 62631-3-1 | Ohm               | >10 <sup>14</sup> |
| Optical Properties              |               |                   |                   |
| Refractive Index, Sodium D Line | ISO 489       | -                 | 1.57              |
| Light Transmission at 550 nm    | ASTM D 1003   | %                 | 89                |
| Haze                            | ASTM D 1003   | %                 | 2                 |
| Other Properties                |               |                   |                   |
| Density                         | ISO 1183      | kg/m <sup>3</sup> | 1040              |
| Processing                      |               |                   |                   |
| Melt Temperature Range          | ISO 294       | °C                | 180 - 280         |
| Mold Temperature Range          | ISO 294       | °C                | 40                |
| Injection Velocity              | ISO 294       | mm/s              | 200               |

Typical values for uncolored products

## SUPPLY FORM

Styrolution PS 168N/L can be supplied in two versions, without or with an external additive for improving pneumatic conveying. "L" as a suffix to the grade designation characterises the version with this agent, i.e. Styrolution PS 168L. Styrolution PS 168N/L is supplied as cylindrical or lens shaped pellets, packed in 25 kg bags or bulk.

## PROCESSING

Styrolution PS 168N/L can be injection molded at temperatures between 180 and 280°C, and recommended mold temperatures between 10 and 60 °C. Extrusion temperatures should not exceed 250°C.

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### PRODUCT SAFETY

During processing of Styrolution PS small quantities of styrene monomer may be released into the atmosphere. At styrene vapor concentrations below 20ppm 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.

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### 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.

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