INEOS STYROLUTION

# Styrolution PS 454N

High Impact Polystyrene (HIPS)

TECHNICAL DATASHEET

## DESCRIPTION

Styrolution PS 454N is an impact resistant polystyrene with a good balance of toughness, high flow, heat resistance and high gloss.

## FEATURES

- Good balance of toughness, high flow, and heat resistance
- High gloss
- UL 94 HB

## APPLICATIONS

- Injection molding parts
- Air conditioners
- Refrigerators
- Water tanks for toilet flushing

| Property, Test Condition | Standard | Unit | Values |
|---|---|---|---|
| **Rheological Properties** | | | |
| Melt Volume Rate, 200 °C/5 kg | ISO 1133 | cm³/10 min | 14 |
| **Mechanical Properties** | | | |
| Charpy Notched Impact Strength, 23° C | ISO 179/1eA | kJ/m² | 16 |
| Tensile Stress at Yield, 23 °C | ISO 527 | MPa | 27 |
| Tensile Strain at Yield, 23 °C | ISO 527 | % | 1.4 |
| Tensile Modulus | ISO 527 | MPa | 2200 |
| Elongation at Break (MD) | ISO 527 | % | 25 |
| Flexural Strength, 23 °C | ISO 178 | MPa | 41 |
| Flexural Modulus, 23 °C | ISO 178 | MPa | 2300 |
| Hardness, Ball Indentation | ISO 2039-1 | MPa | 90 |
| **Thermal Properties** | | | |
| Vicat Softening Temperature VST/B/50 (50N, 50 °C/h) | ISO 306 | °C | 82 |
| Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa) | ISO 75 | °C | 78 |
| Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa) | ISO 75 | °C | 82 |
| Coefficient of Linear Thermal Expansion | ISO 11359 | $10^{-6}$/°C | 80 |
| Thermal Conductivity | DIN 52612-1 | W/(m K) | 0.17 |
| **Electrical Properties** | | | |

Contact us:
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|---|---|---|---|
| Dielectric Constant (100 Hz) | IEC 62631-2-1 | - | 2.5 |
| Dissipation Factor (100 Hz) | IEC 62631-2-1 | $10^{-4}$ | 1.5 |
| Dissipation Factor (1 MHz) | IEC 62631-2-1 | $10^{-4}$ | 4 |
| Volume Resistivity | IEC 62631-3-1 | Ohm*m | $>10^{16}$ |
| Surface Resistivity | IEC 62631-3-1 | Ohm | $>10^{13}$ |
| Other Properties | | | |
| Density | ISO 1183 | kg/m³ | 1040 |
| Processing | | | |
| Linear Mold Shrinkage | ISO 294-4 | % | 0.4 - 0.7 |
| Melt Temperature Range | ISO 294 | °C | 180 - 260 |
| Mold Temperature Range | ISO 294 | °C | 40 |
| Injection Velocity | ISO 294 | mm/s | 200 |

Typical values for uncolored products
Please note that all processing data stated are only indicative and may vary depending on the individual processing complexities.
Please consult our local sales or technical representatives for details.

## SUPPLY FORM

Styrolution PS 454N is supplied as cylindrical shaped granules. It has to be kept in its original containers in a cool, dry place. Avoid direct exposure to sunlight. Styrolution PS 454N can be stored in silos.

## PROCESSING

Styrolution PS 454N can be injection molded under different conditions depending on machinery available and articles molded. Mass temperature can be as high as 260°C. It is suitable for gas assisted injection molding. To achieve articles with very high gloss, well-polished surfaces are recommended.

## 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 were five to eight air changes per hour are made.

## DISCLAIMER

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The above mentioned data are accurate to the best of our knowledge. They are based upon reputable labs and industry standard testing methods. These are only typical values and actual product specification may deviate at industrial range. Therefore, no data in this technical data sheet shall constitute a warranty or representation regarding product features, fitness of the product for a specific purpose or application or its processability. 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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