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Refining & Chemicals  
Polymers

### Polystyrene Crystal 1160

Technical data sheet  
High heat resistance, High Molecular Weight  
Crystal Polystyrene  
Produced in Europe

#### Description

POLYSTYRENE CRYSTAL 1160 is a high heat resistance, high molecular weight crystal polystyrene mainly for the extrusion industry. Most notably for the production of bi-oriented polystyrene (BOPS). It is particularly useful in the production of sheet for food packaging and insulation board made by direct gassing, where it gives expanded sheets with high mechanical properties.

POLYSTYRENE CRYSTAL 1160 can be used pure for the production of transparent cups or in dilution with POLYSTYRENE IMPACT 7240 for the extrusion of sheet for hot-fill thermoforming applications.

The main applications are foamed trays, shower screens, high heat resistant thermoformed products, transparent cups, XPS.

#### Characteristics

|                                                  | Method      | Unit   | Value    |
|--------------------------------------------------|-------------|--------|----------|
| <b>Rheological properties</b>                    |             |        |          |
| Melt flow index (200°C-5kg)                      | ISO 1133 H  | g/10mn | 2.4      |
| <b>Thermal properties</b>                        |             |        |          |
| Vicat softening point 10N (T° increase = 50°C/h) | ISO 306A50  | °C     | 105      |
| Vicat softening point 50N (T° increase = 50°C/h) | ISO 306B50  | °C     | 101      |
| HDT unannealed under 1.8 MPa                     | ISO 75-2A   | °C     | 83       |
| HDT annealed under 1.8 MPa                       | ISO 75-2A   | °C     | 97       |
| Coefficient of linear thermal expansion          |             | mm/°C  | 7.10 E-5 |
| <b>Mechanical properties</b>                     |             |        |          |
| Unnotched Charpy impact strength                 | ISO 179/1eA | KJ/m²  | 8        |
| Tensile strength at break                        | ISO 527-2   | MPa    | 48       |
| Elongation at break                              | ISO 527-2   | %      | 3        |
| Tensile modulus                                  | ISO 527-2   | MPa    | 3200     |
| Flexural modulus                                 | ISO 178     | MPa    | 2900     |
| Rockwell hardness                                | ISO 2039-2  |        | L 70     |
| <b>Electrical properties</b>                     |             |        |          |
| Dielectric strength                              |             | kV/mm  | 135      |
| Surface resistivity                              | ISO IEC 93  | Ohms   | >10 E+14 |
| <b>Miscellaneous</b>                             |             |        |          |
| Density                                          | ISO 1183    | g/cm³  | 1.05     |
| Moulding shrinkage                               |             | %      | 0.4-0.7  |
| Water absorption                                 | ISO 62      | %      | <0.1     |

Information contained in this publication is true and accurate at the time of publication and to the best of our knowledge. The nominal values stated herein are obtained using laboratory test specimens. These are typical values not to be construed as specification limits. Before using one of the products mentioned herein, customers and other users should take all care in determining the suitability of such product for the intended use. Unless specifically indicated, the products mentioned herein are not suitable for applications in the pharmaceutical or medical sector. The Companies within TotalEnergies Petrochemicals do not accept any liability whatsoever arising from the use of this information or the use, application or processing of any product described herein. No information contained in this publication can be considered as a suggestion to infringe patents. The Companies disclaim any liability that may be claimed for infringement or alleged infringement of patents.

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Page 1 of 2

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### General Information

- Standard properties: All tests carried out at 23°C unless otherwise stated. Mechanical properties are measured on injection moulded tests specimens.
- Bulk density: bulk density is approximately 0.6 g/cm<sup>3</sup>.

### Handling and storage

Please refer to the safety data sheet (SDS) for handling and storage information. It is advisable to convert the product within one year after delivery provided storage conditions are used as given in the SDS of our product. SDS may be obtained from the website: [www.polymers.totalenergies.com](http://www.polymers.totalenergies.com).

