



## Product information

**General properties:** HIPS high-impact resistant is high impact polystyrene with improved heat resistance and good flow properties.

### **Brief characteristic** (typical values):

High impact polystyrene (HIPS) with high mechanical properties and good frost resistance.

Tuhips VM has a good heat resistance and an improved stress cracking resistance.

### **Mechanical properties**

Yield strength ISO 527 MPa 16

Elongation at yield ISO 527 % 3

Tensile strength at break ISO 527 MPa 16

Elongation at break ISO 527 % > 35

Modulus in flexure EN ISO 178 MPa 1500

Flexural stress at conventional deflection DIN 53452 N/mm<sup>2</sup> 39

Impact strength at 23°C EN ISO 179/1eU kJ/m<sup>2</sup> ≥ 40

Impact strength at -30°C EN ISO 179/1eU kJ/m<sup>2</sup> 30

Impact strength notched at 23°C EN ISO 179/1eA kJ/m<sup>2</sup> ≥ 7

Impact strength notched at -30°C EN ISO 179/1eA kJ/m<sup>2</sup> 5

Ball Indentation hardness (H 358/30) EN ISO 2039-1 N/mm<sup>2</sup> 80

### **Thermal properties**

Vicat softening point VST B 50 ISO 306 °C 90

ISO/R75 process A ISO 75 °C 78

ISO/R75 process B ISO 75 °C 89

Continuous working temperature °C ~ 70

Thermal coefficient of linear expansion ISO 7991 10<sup>-5</sup>/K 8-10

Thermal conductivity ISO 8302 W/Km 0,17

Specific heat kJ/kgK 1,2

### **Electrical properties**

Dielectric constant (at 10<sup>6</sup> Hz) IEC 250 2,5

Dielectric dissipation factor IEC 250 10<sup>-4</sup> 4

Specific volume resistivity DIN EN 61340-5-1 Ω cm > 10<sup>16</sup>

Surface resistivity DIN EN 61340-5-1 Ω > 10<sup>13</sup>

Dielectric strength VDE 0303 kV/mm 155

### **Other properties**

Burning behaviour UL 94 HB

(raw material from 1,6 mm thickness)

Shrinkage % 0,4 – 0,7

Water absorption, till saturation ISO 62 % < 0,1

Density (nature) ISO 1183 g/cm<sup>3</sup> 1,05

## Processing

HIPS high-impact resistant can be processed by all conventional techniques using standard conditions for Impact polystyrene although it is developed primarily for sheet and foil extrusion. Cups and containers made From HIPS high-impact resistant show a very uniform wall thickness distribution.

## Examples of application

Vending cups, dairy packaging and disposable tableware toys, profiles for furniture and picture frames.

## Regulatory Compliance

On request, we will be happy to provide you with Regulatory Compliance Statements (RCSs) that affirm our products' conformity to various EU Directives, including food contact. Standard RCSs are available for Directives on RoHS (Return of Hazardous Substances), WEEE (Waste Electrical and Electronic Equipment), Packaging Waste et al. We can also provide Declarations confirming the absence of heavy metals and a range of other substances subject to restrictions under EU Marketing and Use Directives, or prohibited under national laws and Company Standards. Please contact us for up-to-date regulatory information on any of our products.

## Food Contact Compliance Statement

Please be informed that HIPS high-impact resistant complies with the following positive lists/ approvals for food-contact materials and articles:

### EU (European Union):

Directive 2002/72/EC as amended, Annex II (monomers), Section A, and Annex III (incomplete list of additives). Manufacturers using the above product for the fabrication of finished products intended to come into contact with food are responsible for compliance by adequate testing or recognized model calculations (eg.MigraPass). They are also required to comply with the general regulatory requirement that these products do not bring about an unacceptable change in the composition of the foodstuffs or deterioration in the organoleptic characteristics thereof.

The information submitted on this paper is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors from the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

