

## E 05

### Technical Data Sheet

#### HIPS

Impressio® HIPS E 05 is an easily processable high impact polystyrene with good mechanical and thermal properties.

The product has been optimized for the production of filaments dedicated to 3D printing (FDM).

#### Applications

Impressio® HIPS E 05 has been designed to produce:

- 1.75 mm and 2.85 mm filaments for 3D printing.

#### Typical processing data

Impressio® HIPS E 05 has a very good processability with standard filament extruders and it allows a good thickness stability.

Standard processing conditions (\*) for the production of a 1.75 mm to 2.85 mm filament:

- melt temperature 210 - 240°C

(\*) The processing conditions may vary depending on the extrusion line and the cooling conditions.

#### Certification

Impressio® HIPS E 05, as supplied in the original packaging, by composition is compliant to some existing regulations on plastic materials intended for food contact.

#### Storage

- ⚠ Store away from atmospheric agents and direct sunlight, away from sources of heat and light.
- 🕒 The product, if stored correctly, keeps its characteristics for at least fifteen months.

#### General information

Impressio® HIPS E 05 is available in natural colour.

For further information, please contact Versalis directly writing to [info.styrenics@versalis.eni.com](mailto:info.styrenics@versalis.eni.com).

Property	Test Conditions	Test method	Units	Values
<b>General</b>				
Water absorption	24h - 23°C	ISO 62	%	< 0,1
Density	-	ISO 1183	g/cm <sup>3</sup>	1,04
Bulk density	-	ISO 60	g/cm <sup>3</sup>	0,65
<b>Rheological</b>				
Melt flow rate	200°C - 5kg	ISO 1133	g/10'	4
<b>Mechanical</b>				
Tensile strain at break	50 mm/min	ISO 527	%	70
Tensile stress at break	50 mm/min	ISO 527	MPa	28
Tensile stress at yield	50 mm/min	ISO 527	MPa	21
Flexural strength	2 mm/min	ISO 178	MPa	38
Rockwell hardness	L/M	ISO 2039/2	-	L 65
Tensile modulus	1 mm/min	ISO 527	MPa	1900
Izod impact strength, notched	-30°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	6,5
Izod impact strength, notched	+23°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	10
<b>Thermal</b>				
Coefficient of linear thermal expansion	-	ISO 11359-2	10 <sup>-5</sup> /°C	9
Thermal conductivity	-	ASTM C 177	W/(K·m)	0,17
Deflection temperature under load (annealed)	1,82 MPa - 120°C/h	ISO 75 A	°C	85
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	99
Vicat softening temperature	50 N - 50°C/h	ISO 306/B	°C	91
<b>Flammability</b>				
Glow wire test (GWT)	1,6 mm	IEC 60695-2-10	°C	650
<b>Electrical</b>				
Dielectric constant (relative permittivity)	1000 Hz secco/dry	IEC 60250	-	2,5
Dissipation factor	1000 Hz secco/dry	IEC 60250	-	3·10E-4
Dielectric strength	secco / dry	IEC 60243	kV/mm	65

Please consult the relevant safety data sheet for more detailed information.  
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