



versalis

www.versalis.eni.com

Technical data sheet
info.styrenics@versalis.eni.com

IMPRESSIO® HIPS E05

HIPS High Impact Polystyrene

Impressio® HIPS E05 is an easily processable high impact polystyrene with good mechanical and thermal properties.

Impressio® HIPS E05 has been optimized for the production of filaments dedicated to 3D printing (FDM).

Main applications

Impressio® HIPS E05 has been designed to produce 1.75 and 2.85mm filaments used into 3D printers for the production of prototypes. It can also be used as limonene soluble support phase.

Processing notes

Impressio® HIPS E05 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 filaments.

Melt temperature	(°C)	210 - 240
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(*) The processing conditions may vary depending on the extrusion line and the cooling conditions.



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Properties

Property	Conditions	Standard	Unit	Value
General				
Density	-	ISO 1183	g/cm ³	1.04
Bulk density	-	ISO 60	g/cm ³	0.65
Water absorption	24h – 23°C	ISO 62	%	<0.1
Rheological				
Melt flow rate	200°C – 5kg	ISO 1133	g/10'	4
Mechanical				
Tensile stress at Yield	50 mm/min	ISO 527	MPa	22
Tensile stress at Break	50 mm/min	ISO 527	MPa	28
Tensile strain at Break	50 mm/min	ISO 527	%	70
Tensile Modulus	1 mm/min	ISO 527	MPa	1900
Flexural strenght	2 mm/min	ISO 178	MPa	38
Izod impact strenght, notched	23°C – thickness 4 mm	ISO 180/1A	kJ/m ²	10
	-30°C – thickness 4 mm	ISO 180/1A	kJ/m ²	6.5
Rockwell hardness	L/M scale	ISO 2039/2	-	L 65
Thermal				
Vicat softening temperature	10N – 50°C/h	ISO 306	°C	99
Vicat softening temperature	50N – 50°C/h	ISO 306	°C	91
Deflection temp. under load (annealed) HDT	1.82MPa – 120°C/h	ISO 75-2/A	°C	85
Coefficient of linear thermal expansion	-	ASTM D 696	10 ⁻⁵ /°C	9
Thermal conductivity	-	ISO 8302	W/(Km)	0.17
Flammability				
Flame behaviour	Thickness 1.5 mm	UL 94	class	HB
Glow wire test (GWT)	Thickness 1.6 mm	IEC 60695-2-1	°C	650



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Storage and Handling

Impressio® HIPS E05 is supplied in pellets form.

The product should be stored in dry conditions at temperature below 50°C and protected from direct sunlight.

Improper storage can initiate degradation which may result in odor generation, colour changes and may have negative effects on the physical properties of the product.

Before using this product it is recommended to read and understand its Safety Data Sheet.

Availability

Contact your nearest Versalis sales office regarding the product availability and your specific application requirements.

Food contact declaration

Impressio® HIPS E05 complies with the European Union (Reg. 10/2011) and the USA (FDA) rules related to the use of plastic materials intended for contact with foodstuffs.

TECHNICAL SERVICE

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IMPORTANT: please consult the relevant safety data sheet for more detailed information. The information and data presented herein are to the best of our knowledge true and accurate but no warranty or guarantee, expressed or implied, is made nor is any liability accepted with respect to the use of such information and data.

versalis is available to provide the guaranteed values for each product on demand.