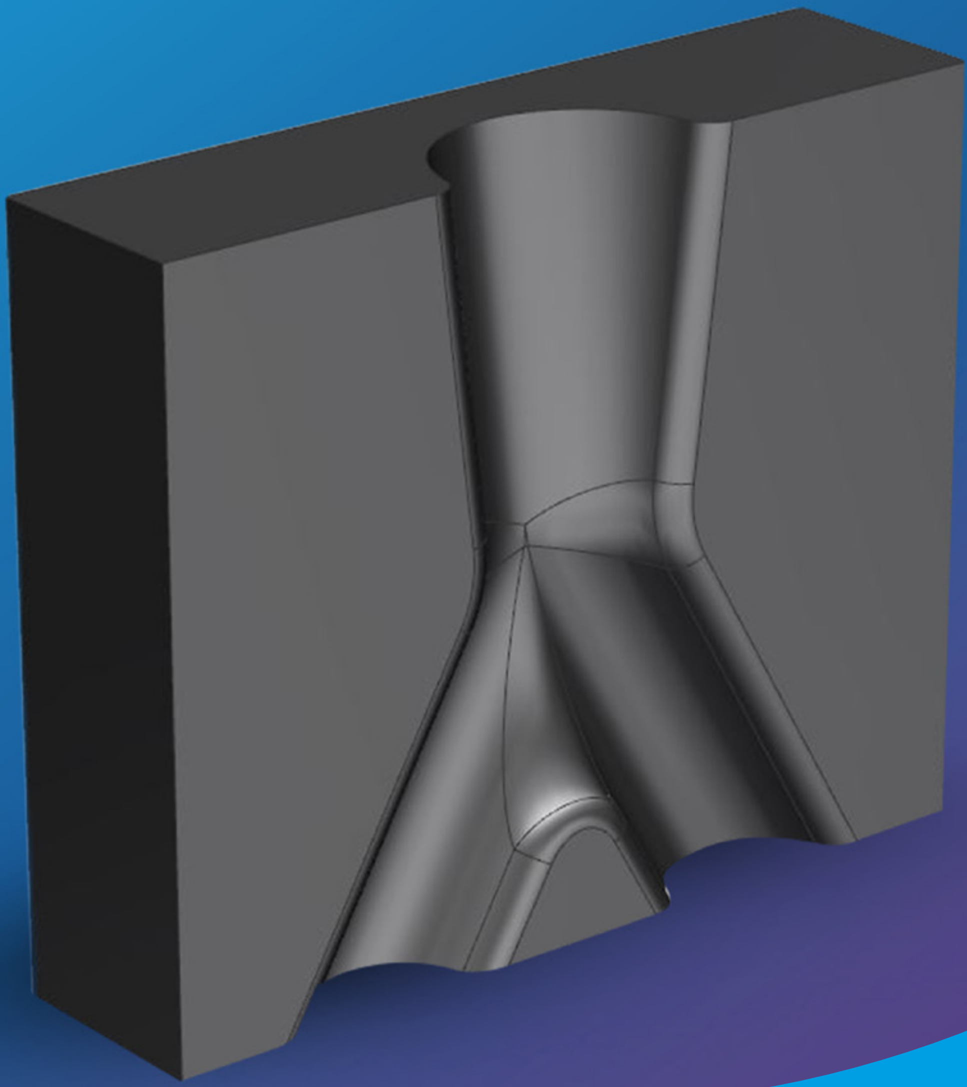

Addigy® G6001 GF

Fused Granulated Fabrication

Popular for its thermal, mechanical and chemical performance, polypropylene (PP) is the second most used polymer worldwide in traditional manufacturing. Despite broad adoption of 3D printing, no PP has been optimized for additive manufacturing. Covestro has now filled the gap with **Addigy® G6001 GF.**

For low volume or decentralized production, direct printing using additive manufacturing can decrease cost since tools are no longer needed. Additive manufacturing also allows for more design freedom and customized parts. Automotive, industrial or infrastructure manufacturers looking to utilize PP in their additive manufacturing processes had difficulties finding a material with the typical thermal, mechanical and chemical performance, while also printing smoothly.

Covestro's new **Addigy® G6001 GF** now offers a PP that has been optimized for fused granulate fabrication 3D printing. While unleashing the full potential of the intrinsic material behavior, so critical for building structural parts, this engineering grade thermoplastic prints smoothly and fast.

Covestro material scientists developed **Addigy® G6001 GF** by combining the same base as material used in high volume production with expertise on simulation tools (CAE), Design for Additive and material printing, then worked with equipment partners to optimize the material for FGF printing. The material has a lower carbon footprint due to the reduced energy consumption, and its low LCA, inherent to the PP's chemistry.

Key Benefits

- Mechanical performance
- Temperature capability: High HDT of 135°C
- Chemical resistance
- Printability: Easy processing on various FGF printers
- Post Processing: Easy machining, milling
- Low LCA (due to the polymer inherent chemistry)

Ideal Applications

- Low temperature tooling
- Applications requiring continuous use temperature (CUT) up to 130°C
- Structural, rigid or strong parts
- Applications for aqueous environment, in marine
- Lightweight design and metal replacement requiring impact resistance
- Automotive applications
- Infrastructure and water management

Technical Data

Mechanical properties	Value	Unit	Test Method
Tensile Modulus (3D printed: flat x-x direction)	6,000	MPa	ISO 527-1/-2
Tensile Modulus (3D printed: on-edge x-z direction)	1,700	MPa	ISO 527-1/-2
Stress at break (3D printed: flat x-x direction)	70	MPa	ISO 527-1/-2
Stress at break (3D printed: on-edge x-z direction)	18	MPa	ISO 527-1/-2
Strain at break (3D printed: flat x-x direction)	3.9	%	ISO 527-1/-2
Strain at break (3D printed: on-edge x-z direction)	7.7	%	ISO 527-1/-2
Impact – Charpy unnotched 23°C [-10°C] (3D printed: flat x-x direction)	36 [33]	kJ/m^2	ISO 179 1eU
Impact – Charpy unnotched 23°C [-10°C] (3D printed: on-edge x-z direction)	16 [11]	kJ/m^2	ISO 179 1eU

Thermal Properties	Value	Unit	Test method
Melting temperature (10°C/min)	165	°C	ISO 11357-1/-3
Glass transition temperature	1	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa) (3D printed: flat x-x direction)	153	°C	DMA
Temp. of deflection under load (1.80 MPa) (3D printed: on-edge x-z direction)	51	°C	DMA
Temp. of deflection under load (0.45 MPa) (3D printed: flat x-x direction)	162	°C	DMA
Temp. of deflection under load (0.45 MPa) (3D printed: on-edge x-z direction)	132	°C	DMA

Other Properties	Value	Unit	Test method
Melt flow rate (230°C – 2.16 kg)	1.8	dg/min	ASTM D1238
Water absorption	n.a.	%	
Humidity absorption	n.a.	%	
Density	1,120	kg/m^3	ISO 1183

[1] Based on IM bars.

These values may vary and depend on individual machine processing and post-curing practices.

More information at am.covestro.com

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