covestro

ADDING
VALUE
TO 3D
PRINTING.

RIGHT NOW

Addigy®

Addigy®

Tailor-made materials for industrial 3D printing

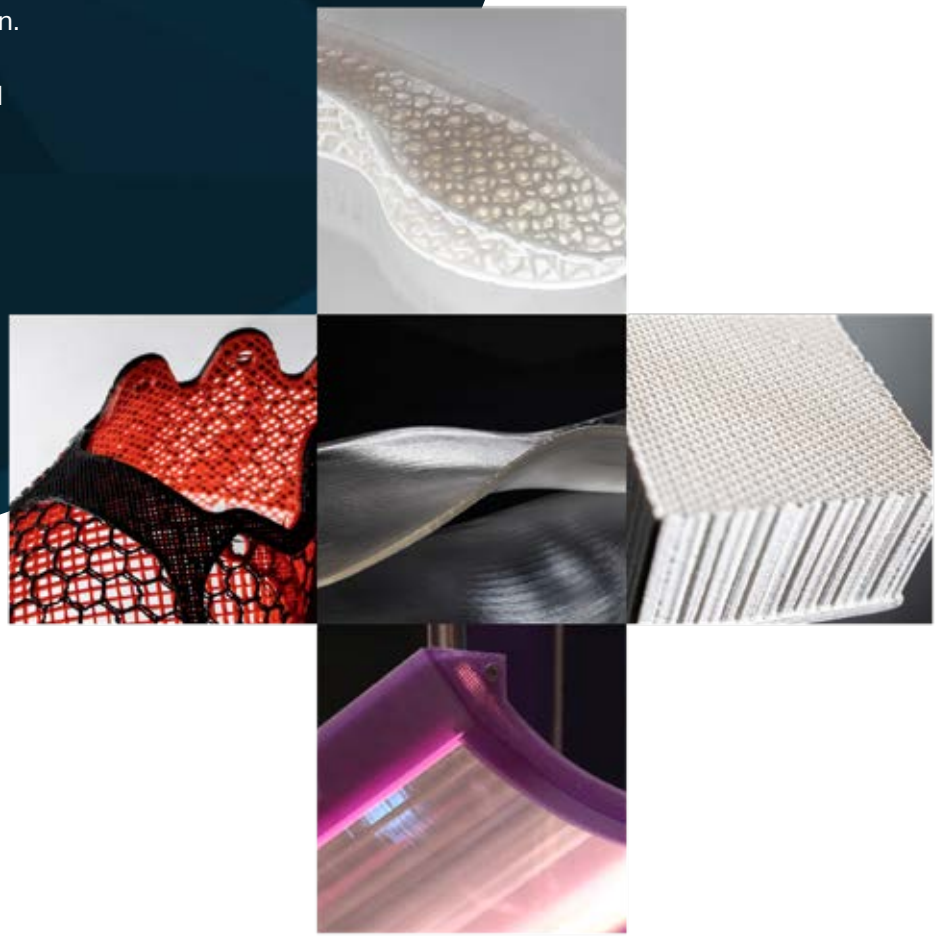
Are you waiting to scale up 3D printing? Addigy® helps you do just that – right now!

Addigy® adds value to your 3D printing production with a flexible toolkit of high performance materials and technologies. On the one hand Addigy® offers raw materials based on polycarbonate and polyurethane with excellent properties from flexible and rigid thermoplastic polyurethanes to high-strength polycarbonates. On the other hand, Addigy® provides a selection of filament, liquid, and powder technologies.

With this, Addigy® opens up a variety of possibilities across industries from healthcare to electrical & electronics and for applications from footwear to lighting. Even more exciting are the opportunities for customization – where others think in terms of "one size fits all", Addigy® is about meeting individual specifications to suit your individual needs.

But this isn't just about customization. It's about scaling up your production to an industrial level, saving time and costs and meeting ever shorter production cycles – all while increasing recyclability and thereby reducing environ-mental impact.

It's also about partnership. At Covestro, we work together with you to solve your individual challenges, connect with value chain partners and think one step ahead.



Scalability, Expertise, Innovation

Scalability

Move from prototyping to industrial production – right now!

- Global production units for PU, PC and TPU
- Expertise to scale up lab-products
- Reliable supplier for large quantities of 3D printing materials

Expertise

Trust in high quality materials from the inventor of PU and PC

- Decades of experience to kick-start your 3D production today
- Technical centers in Germany, China and USA provide global perspectives
- Flexible toolkit of high quality materials and technologies

Innovation

Partner with us to keep reinventing materials and find a tailor-made solution for you

- Pushing boundaries to improve raw materials across industries and applications
- Customized material properties to meet individual customers' needs on an industrial scale
- Joint development with partners to solve challenges across the value chain

Technologies and materials

Our portfolio: a flexible material toolkit for additive manufacturing

Based on high-performance polyurethane and polycarbonate raw materials, which are adjustable to customer's needs, the Addigy® portfolio offers technologies for all main polymer printing processes – providing our customers with variety and choice for multiple applications.

Filaments
Addigy® filaments offer a broad choice of extrudable raw materials that are ideal for fused filament fabrication (FFF) – from flexible and rigid thermoplastic polyurethanes (TPU) to high-strength polycarbonate (PC). Our materials are highly suitable for additive manufacturing.

Powders
Addigy® offers TPU powders, which are flexible materials available for selective laser sintering (SLS), one of the commonly used printing techniques in the powder bed fusion process. Addigy® TPU powders can also be used for high speed sintering (HSS).

Liquids
Our liquid resins are suited for stereolithography (SLA) and the digital light process (DLP). When it comes to toughness, flexibility, as well as chemical and weathering resistance, these PU-based resins offer a great opportunity to customize performance due to the broad range of isocyanates and polyols from Covestro.

Bringing 3D printing to life

Addigy® success stories

Thermally conductive lamp
For maximum performance, LEDs need to be embedded into a lightweight material with excellent thermal conduction. This can only be achieved with complex shapes that exchange heat with the air and extend the LED lifespan. Addigy® provides the material and a technological solution to make this possible.
[find out more]

Orthopedic insole
Producing orthopedic insoles requires materials that combine breathability and comfort with mechanical strength. We were also searching for an automated process that reduced waste while still allowing for the customization that only made-to-measure insoles allow. That's where Addigy® liquid polyurethane and TPU powder stepped in.
[find out more]

Recyclable shoe
Manual production, rising wages and cost-intensive processes make shoe manufacturing an expensive and complex business. What's more, consumers are increasingly looking for more sustainable products. With Addigy® 3D printing we're helping to simplify production processes while taking an important step towards a closed-loop economy.
[find out more]

FIND OUT MORE ▷
addigy.covestro.com

Technical data

An excerpt from our portfolio

FILAMENT

Addigy® FPU 77D X1010	
Color	Natural
Density	1190 kg/m³
Vicat softening temperature	133 °C
Shore hardness D	77
Tensile modulus (XY-Direction)	489 MPa
Tensile strength (XY-Direction)	18 MPa
Elongation (XY-Direction)	81 %
Abrasion resistance	52 mm³

Addigy® FPU 74D 000000 UV	
Color	Natural
Density	1179 kg/m³
Vicat softening temperature	188 °C
Shore hardness D	74
Tensile modulus (XY-Direction)	753 MPa
Tensile strength (XY-Direction)	42 MPa
Elongation (XY-Direction)	244 %
Abrasion resistance	56 mm³

FILAMENT

Addigy® FPU 64D 000000 UV	
Color	Natural
Density	1229 kg/m³
Shore hardness D	64
Tensile modulus (XY-Direction)	157 MPa
Tensile strength (XY-Direction)	43 MPa
Elongation (XY-Direction)	396 %
Abrasion resistance	23 mm³

Addigy® FPU 89A 000000 AF	
Color	Natural
Density	1130 kg/m³
Shore hardness D	89
Tensile modulus (XY-Direction)	16 MPa
Tensile strength (XY-Direction)	16 MPa
Elongation (XY-Direction)	727 %
Abrasion resistance	28 mm³

Addigy® FPC 3D1000	
Color	Natural
Density	1210 kg/m³
Vicat softening temperature	112 °C
Shore hardness D	NA
Tensile modulus (XY-Direction)	2010 MPa
Tensile strength (XY-Direction)	63 MPa
Elongation (XY-Direction)	4 %
Abrasion resistance	NA

LIQUID

Addigy® LPU Rigid 341-02 IM	
Color	Natural
Viscosity	17000-22000 mPas
Shore hardness D	64
Tensile strength at break	69 MPa
Elongation at break	5%
Young's modulus	2230 MPa
Glass transition temperature	92 °C

Addigy® LPU Flex 341-10 IM	
Color	Natural
Viscosity	8000-12000 mPas
Shore hardness D	44
Tensile strength at break	21 MPa
Elongation at break	104 %
Young's modulus	128 MPa
Glass transition temperature	64 °C

Customized grades

In addition to those presented here, we also provide grades tailored to your application/s and needs.

POWDER

Addigy® PPU 77A	
Property	**Value**
Glass transition temperature	-37 °C
Melt volume rate	
Color	natural
Melting temperature range	100–180 °C
Mechanical properties	
Shore hardness A	72
Tensile strength (X-direction)	4 MPa
Tensile strength (Z-direction)	2 MPa
Elongation at break (X-direction)	285 %
Elongation at break (Z-direction)	104 %
Printed part density	0,85 g/cm³
Rebounding elasticity	46 %
Tear resistance (XY-direction)	52 kN/m
Powder properties	
X10	~ 50 µm
X50	~ 105 µm
X90	~ 150 µm
Bulk density	0,382 g/cm³
Part bed powder density	0,481 g/cm³
Avalanche energy	~ 25 KJ/Kg

Customized grades

In addition to those presented here, we also provide grades tailored to your application/s and needs.

LET'S ADD TO YOUR SUCCESS WHY NOT?

GET IN TOUCH

AND TAKE 3D PRINTING
TO THE NEXT LEVEL

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