

Please contact
Mowiflex@kuraray.eu
 for additional infor-
 mation about further
 MOWIFLEX™ products.

MOWIFLEX™ for rapid prototyping in 3D printing

MOWIFLEX™ is a compound of PVOH and plasticizer that has been designed in order to suit thermoplastic processing needs. MOWIFLEX™ possesses all properties of standard PVOH,

such as water solubility, and can be processed as a thermoplastic at the same time - a decisive advantage for 3D printing.

A vision of the future becomes reality

The layered filament deposition 3D printing process (FDM/FFF) starts with the design and creation of a 3D object /model in a 3D CAD program. This model is then horizontally sliced using software which also generates the needed printing instructions for the 3D Printer. Products are built layer by layer of plastic strands such as ABS and PLA.

At this point a crucial issue may arise with models that have a complex geometry: overhanging components don't stick to the already printed form as they are not supported from below. Instead, due to the high temperature of the strand coming out of the die, the material runs down to the bottom.



This is exactly where MOWIFLEX™ comes into play to save the model: MOWIFLEX™ filaments can be used for **multicomponent printing** with different materials that need a **support substrate** for a so-called "overhang" or "undercut". In this way, the properties of MOWIFLEX™ also **increase geometrical flexibility**, like the possibility to print at angles of more than 30°.

Once the object has been printed, it can be placed in water where MOWIFLEX™ dissolves owing to its water-soluble character leaving the final printed product. With this innovative approach MOWIFLEX™ can be used as **water-soluble** support material or as water-soluble built material that in addition is also **environmental friendly and biodegradable** in an aqueous environment.



3D printed rabbit with conventional support material



3D printed rabbit with MOWIFLEX™



Adding value to your products - worldwide



KURARAY POVAL™, EXCEVAL™, ELVANOL™ and MOWIFLEX™ are the trademarks for polyvinyl alcohols made by Kuraray. Their key characteristics – outstanding film-forming properties and high binding strength – add real value to your products. Our polymers are water-soluble, highly reactive, crosslinkable and foamable. They have high pigment binding capacity, protective colloid characteristics and thickening effects. The physical and chemical properties of KURARAY POVAL™ make it ideal for a wide variety of applications, ranging from adhesives through paper and ceramics to packaging films. Many of our polymers are food contact-

approved and thus suitable for food applications. Ecologically KURARAY POVAL™ is advantageous due to its biodegradability and the fact that combustion does not generate residues. It is available in various particle sizes from granules to fine powders.

Kuraray produces its wide range of KURARAY POVAL™ grades in Japan, Singapore, Germany and the USA. Kuraray's global production and service network make us your partner of choice for innovative high-quality PVOH resins.

KURARAY - Here to Innovate.

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