

kuraray

mowiflex™



MOWIFLEX™

Maximizing freedom of design
in manufacturing of plastic parts

Please contact Mowiflex@kuraray.com for additional information about further MOWIFLEX™ products.

MOWIFLEX™ as water soluble support material for additive manufacturing

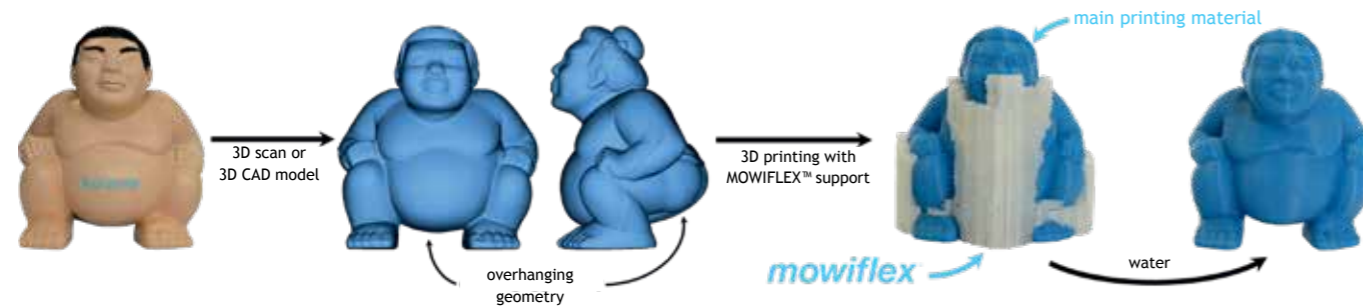
MOWIFLEX™ is a water soluble thermoplastic material based on polyvinyl alcohol. Excellent cold water solubility combined with low moisture absorption from the atmosphere render it the perfect support material for FFF (fused filament fabrication) based 3D printing processes. The application of MOWIFLEX™ as water soluble support material enables print-

ing of complex structures even those containing moving parts in one piece and high quality. After printing is complete, the support structures are easily dissolved in water which can then be disposed of conveniently through normal waste water systems due to the biodegradable* nature of polyvinyl alcohol.

	MOWIFLEX™ 3D 1000	MOWIFLEX™ 3D 2000
Water solubility	100% soluble, forms a clear solution	Slightly turbid solution
Dissolving speed	+	++
Moisture absorption	low	
Adhesion to main material	Good adhesion to PLA, PA, PVB	Improved adhesion to PLA, PA, PVB, TPU, PETG
Printing in heated chamber	○	+
Melt flow	+	++



*MOWIFLEX™ 3D 1000 and 3D 2000 are certified according to TÜV AUSTRIA OK biodegradable water. For disposal of large quantities of MOWIFLEX™ solution please follow local regulations.

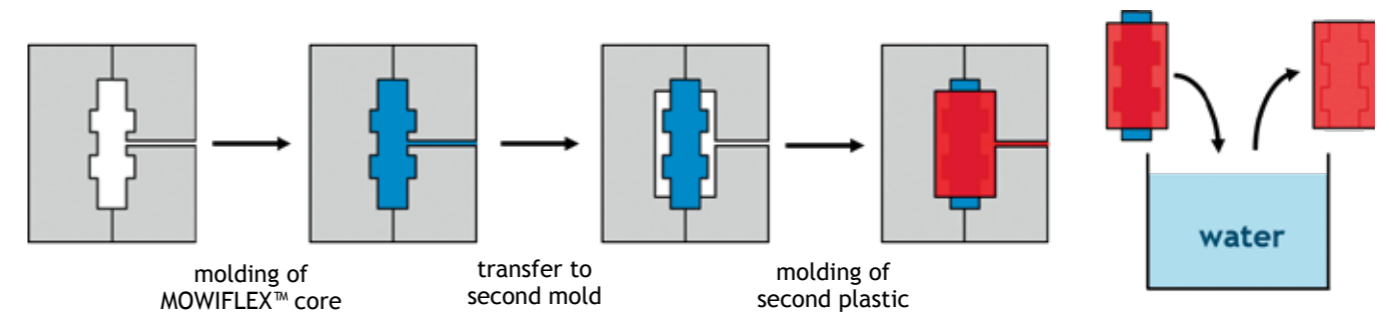


- biodegradable
- low moisture absorption
- print complex parts
- no organic solvents needed
- high filament stiffness
- adhesion to various materials

MOWIFLEX™ as water soluble material for lost core injection molding

The design of injection molded parts is typically limited by their demolding ability. Frequently, multiple expensive retractable and/or collapsing cores are required to manufacture complex plastic parts with undercuts or hollow sections. In some cases the only possibility is to mold multiple parts, which are welded together afterwards. This limitation can be overcome by using MOWIFLEX™ in lost core injection molding technology.

MOWIFLEX™ is a thermoplastic polyvinyl alcohol compound, which can be injection molded to water soluble objects. It's high stiffness and water solubility render it the perfect material for use as a temporary core. In a first step, the water soluble core is molded by using conventional injection molding equipment. This is subsequently transferred to a second mold, where the main material is molded around the MOWIFLEX™ core. As a last step the soluble core is removed by dissolving in water to obtain the final part. No harmful chemicals are involved in this process.



By using MOWIFLEX™ as a water soluble core, undercuts or internal geometries can be realized in injection molded plastic parts. Especially for the production of an intermediate number of highly complex plastic parts MOWIFLEX™ can contribute to enable their manufacturing by injection molding in one piece. After dissolving the soluble core in water the solution can be easily disposed to conventional waste water treatment plants, due to the biodegradability of MOWIFLEX™ (MOWIFLEX™ C17 is certified according to TÜV AUSTRIA OK biodegradable water).

Scuba diving air regulator housing (by courtesy of Mares S.p.A.) with complex bypass tube geometry molded from glass fiber reinforced polyamide by using a water soluble MOWIFLEX™ core.



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 produce their 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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