

MOWIFLEX™

# Water soluble material for lost core injection molding

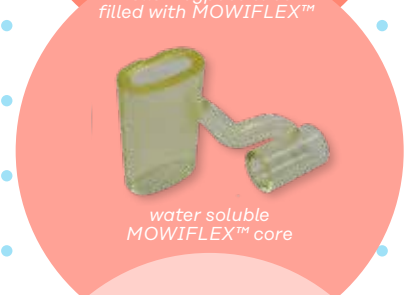
## MOWIFLEX™

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.

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 inherent biodegradability of MOWIFLEX™. MOWIFLEX™ C 17 / 3D 2000 is inherently biodegradable in water according to ISO 14851 (biodegradation >90 % vs. cellulose within 56 days).



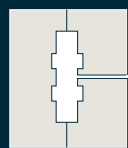
*hollow bypass tube filled with MOWIFLEX™*



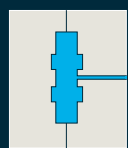
*water soluble MOWIFLEX™ core*



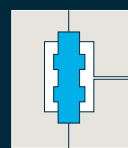
MOWIFLEX™ is a thermoplastic polyvinyl alcohol compound, which can be injection molded to water soluble objects. Its high stiffness and water solubility render it the perfect material for use as a temporary core. In a first step, the water soluble core is molded by using conventional injection molding 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.



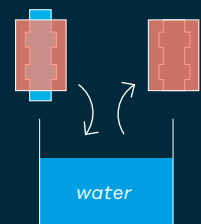
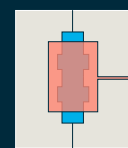
*molding of MOWIFLEX™ core*



*transfer to second mold*



*molding of second plastic*



*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 (PVOH) 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.

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 Poval™**

PLEASE CONTACT US  
[kuraray-poval.com](http://kuraray-poval.com)

**kuraray**

## HEADQUARTERS

### Kuraray Co., Ltd.

Tokiwabashi Tower  
2-6-4, Otemachi  
Chiyoda-ku  
Tokyo, Japan 100-0004

### Kuraray America, Inc.

3700 Bay Area Blvd.,  
Suite 680 Houston, TX 77058  
United States of America

### Kuraray Asia Pacific Pte., Ltd.

1 North Buona Vista Link  
#12-10/11, Elementum  
Singapore 139691

### Kuraray Europe GmbH

Philipp-Reis-Str. 4  
65795 Hattersheim am Main,  
Germany

### Kuraray China Co., Ltd.

Unit 2207, 2 Grand Gateway  
3 Hongqiao Road, Xuhui District, Shanghai  
200030, China

## DISCLAIMER

KURARAY POVAL™, EXCEVAL™, ELVANOL™, and MOWIFLEX™ are the trademarks or registered trademarks of Kuraray or its affiliated companies. The information, recommendations, and details in this document are provided based on sufficient consideration to the best of Kuraray's knowledge. However, they are not intended to guarantee any characteristics beyond the product specifications. Customers should verify the suitability of our products for their intended use and compliance with relevant laws and regulations. Neither Kuraray nor any of its affiliated companies makes any warranty or responsibility for any errors, inaccuracies, or omissions in this document.