Barrier coatings for packaging

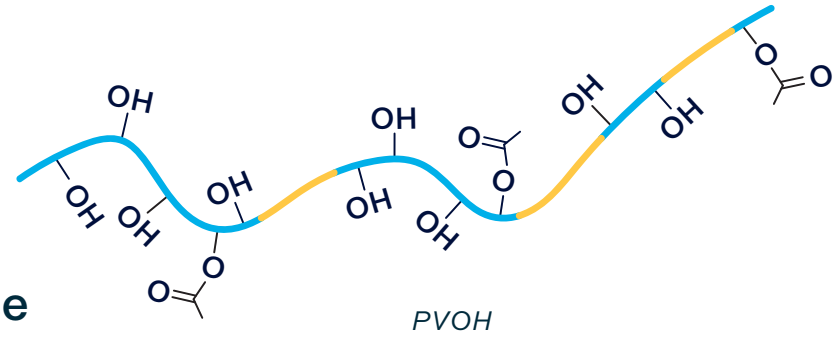
kuraray

Kuraray Poval™

Kuraray Poval™, Elvanol™, Exceval™

Market drive for sustainable packaging solutions

There is a pull from the market to develop sustainable, novel and convenient packaging for extended shelf-life foods. At the same time there is an industry drive to increase the functionality of the produced paper and board and through that adding the commercial value. This is an opportunity for aqueous barrier coatings on paper and board.



Polyvinyl alcohol

An excellent barrier against oxygen and grease

Polyvinyl alcohol is a noionic water soluble polymer that is well suited for water based barrier coatings. Polyvinyl alcohol is a linear and crystalline polymer that is also inherently biodegradable under the right conditions. The hydrophilic nature of polyvinyl alcohol makes it well suited as a barrier against grease and oil as well as mineral oils. The hydrogen bonds between the polymer chains together with the crystalline structure make polyvinyl alcohol the best available barrier against oxygen. Polyvinyl alcohol is approved to be used in food packaging according to BfR and FDA.

Barrier Material	Oxygen Barrier (OTR)
Polyethylene, polypropylene	-
PET	+
PA6 (Nylon)	+
PVDC	++
EVOH, PVOH	+++

Kuraray Poval™ & Exceval™

Kuraray case studies

Kuraray has worked intensively to develop water based barrier coatings for the packaging sector and our Kuraray Poval™ and Exceval™ are already used in applications where an oxygen barrier or a grease barrier is needed. Examples for applications like these are paper bags for bread and coffee packaging.

Starch sized base paper

OTR of uncoated paper:
> 2000 mL/m²/d

Used barrier coating:
Exceval™ HR-3010: 100 pts
Coating weight: 7 g/m²

Reached OTR value:
<1ml/m²/d
23°C, 50% RH

Kuraray Poval™, Elvanol™ & Exceval™ product portfolio

Our Kuraray Poval™, Elvanol™ and Exceval™ are well known to the paper industry. They are widely used in coated graphical papers, ink jet papers, thermal papers and release liners. They can be coated with all commonly used coating methods like film press, blade coaters or curtain coaters.

Kuraray offer a wide range of products to meet the requirements and needs of the different applications.

Product	Viscosity (mPas) 4% solution	Barrier against			
		O2	Grease	Mineral Oil	Water
Exceval™ AG-4104	3,5 - 4,5	+++	+++	+++	+
Exceval™ HR-3010	12,0 - 16,0	+++	+++	+++	+
Exceval™ RS 2117	25,0 - 30,0	+++	+++	+++	+
Elvanol™ 90-50	11,6 - 15,4	++	+++	+++	
Elvanol™ 71-30	27,0 - 33,0	++	+++	+++	
Kuraray Poval™ 6-98	5,0 - 7,0	++	+++	+++	
Kuraray Poval™ 15-99	12,5 - 17,5	++	+++	+++	
Kuraray Poval™ 28-99	26,0 - 30,0	++	+++	+++	

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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Kuraray Poval™ product portfolio

Please contact your local Kuraray office to discuss the right Kuraray product for your needs.

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