

OBA Carrier and co-binder for Coated Paper and Board

kuraray

Kuraray Poval™

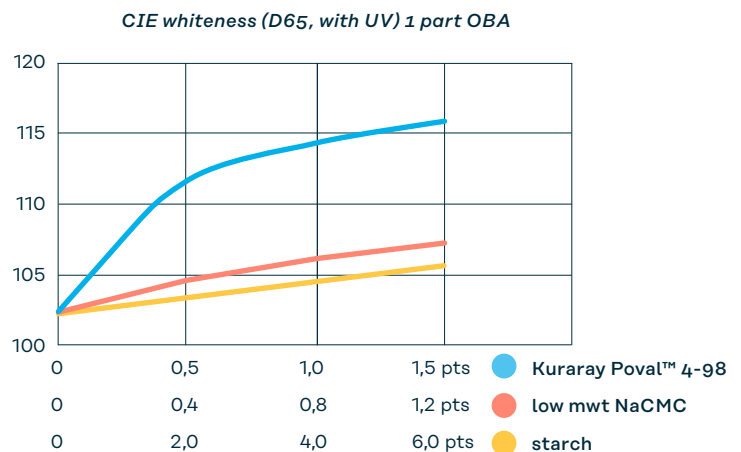
Why is paper and board coated?

Paper and board are coated in order to improve the printability. A pigment coating increases the smoothness and reduces the porosity of the paper and board which influences ink absorption. When printing on a coated paper the ink stays more on the surface of the paper giving a higher print gloss and a more brilliant and more detailed print. The coating colors consist of pigments like clay and calcium carbonate, latex and additives. The additives are crosslinkers to increase wet strength, optical brightening agents (OBA) to increase whiteness and co-binders to give strength, water retention and viscosity to name a few.

OBA Carrier

Increased whiteness by using Kuraray Poval™ as a OBA carrier

By adding Kuraray Poval™ to coating color containing optical brightening agent (OBA), the CIE Whiteness of the paper can be increase with up to 15%. Kuraray Poval™ interacts with the OBA increasing the efficiency of the OBA. The recommended addition level of Kuraray Poval™ is 1:1 ratio with the OBA, but further increasing the Kuraray Poval™ dosage will further increase the CIE whiteness and also reduce whiteness reduction over time.



Pigment coatings

Kuraray Poval™ as co-binder and water retention aid in pigment coatings

Kuraray Poval™ has multiple tasks in a pigment coating. Besides acting as a carrier of OBA it also acts as a binder and water retention aid in the coating color. Polyvinyl alcohol is the strongest binder available for paper coating and increasing the Kuraray Poval™ dosage will give possibilities to reduce total binder amount and through this reduce costs.

In the example on the right we have reduced the total binder content from 10,5 parts to 9 parts and at the same time increasing the dry strength. We have reduced the SB-latex level from 10 parts to 7 and increased the Kuraray Poval™ content from 0,5 parts to 2 parts.

Kuraray Poval™ has a positive effect on water retention. When increasing the the amount of Kuraray Poval™ in your coating recipe the ÅAGWR water retention will be reduced.



Coating colour

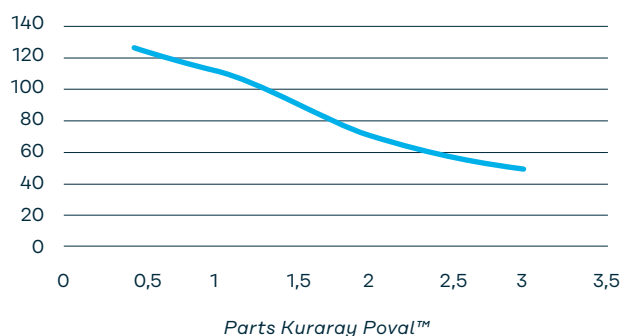
Calcium Carbonate: 80 pts
Clay: 20
OBA: 0,5 pts
CMC: 0,3 pts
Solid content: 66,7 %

Dry pick, m/s



Parts PVOH	0,5	1	2
SB latex	10	9	7
Total binder	10,5	10	9

ÅAGWR water retention, g/m²



Kuraray Poval™, Elvanol™ and Exceval™ products for coated Paper and Board

Low molecular weight and fully hydrolyzed Kuraray Poval™ is commonly used as co-binder and OBA carrier in coated paper and board. Which product is used depends on what the viscosity requirements are and if direct food contact approval is needed.

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



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™

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