

A hand is shown using a roller to apply a thick, white adhesive substance to a light-colored wall. The background is a solid blue color, and there are several large, semi-transparent orange circles scattered across the image. The text 'Specialities for emulsion polymerization and adhesives' is written in white, sans-serif font in the upper left quadrant.

Specialities for emulsion polymerization and adhesives

kuraray

Kuraray Poval™

KURARAY POVAL™ and EXCEVAL™

Optimised solutions for polymerization & adhesive processes

With KURARAY POVAL™ and EXCEVAL™, Kuraray offers a wide range of excellent specialities particularly designed for the emulsion polymerization & adhesives process. KURARAY POVAL™ and EXCEVAL™ are the trademarks of the polyvinyl alcohol (PVOH) from Kuraray. Both polymers are water soluble and characterised by their molecular weight (determined by their viscosity) and by the degree of hydrolysis. EXCEVAL™, Kuraray's novel special hydrophobic modified PVOH is water soluble like standard polyvinyl alcohol and can be processed in conventional conditions. The hydrophobic-hydrophilic balance of EXCEVAL™ has been optimized to combine good water resistance and sufficient viscosity stability of the aqueous solution.

Kuraray's polyvinyl alcohol specialities are available in a wide range of different grades, varying in molecular weight/viscosity and degree of hydrolysis. Both factors considerably determine the performance properties of PVA based emulsions.



KURARAY POVAL™ & EXCEVAL™

Polyvinyl alcohols tailored to your needs

Choosing the appropriate grade of PVOH is decisive for achieving the desired performance spectrum. The use of PVOH with a lower degree of hydrolysis will promote polymerization stability and the formation of lower particle size whereas higher degree of hydrolysis PVOH will enhance the water resistance.

Also for certain applications, blends of polyvinyl alcohol with different degree of hydrolysis are recommended to properly balance emulsion stability and water resistance. PVOH with a higher molecular weight/viscosity results in emulsion polymers with high shear thinning tendency and higher wet tack. Simultaneously, a lower degree of hydrolysis PVOH allows for improved water sensitivity. Due to the high water resistance of EXCEVAL™ HR-3010 and RS-2117 a D3 performance level can be achieved without using any crosslinker. If an even higher water resistance performance is needed, it can be achieved by simply using standard crosslinking systems. Furthermore, Kuraray's EXCEVAL™ RS-1000 series show a high grafting capability as well as an enhanced stabilization performance.

KURARAY POVAL™ & EXCEVAL™

Applications specialized in specialities

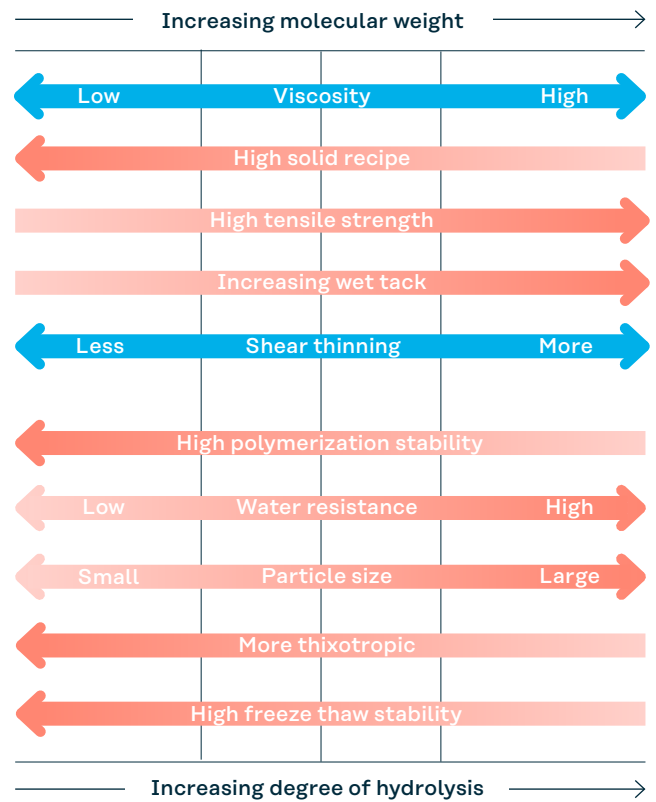
In emulsion polymerization processes, Kuraray's PVOH specialities are excellent colloidal stabilisers for vinyl acetate based emulsions, that are highly suitable as raw materials for wood glues and paper adhesives.

Among all the beneficial properties that polyvinyl alcohols add to the final product, the most important ones are the improved wet tack, the good heat resistance, the improved adhesion to hydrophilic substrate and its ability to be cross linked.

By simultaneously using different emulsifiers, finer emulsions can be produced, that are suitable as binders in paint applications. Furthermore, the desired particle size for a particular purpose can be achieved by adjusting the ratio of polyvinyl alcohol and emulsifiers.

Kuraray's polyvinyl alcohols can also be added to polymer emulsions after polymerization to improve certain properties of the end product, such as viscosity or open time.

Emulsion properties as a function of the PVOH molecular weight and degree of hydrolysis



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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