Exceval™

Kuraray's water-soluble ethylene vinyl alcohol

Exceval™ is the trade mark of Kuraray's hydrophobically modified polyvinyl alcohol especially designed for the requirements of "high water resistance". When used as a dispersing aid / protective colloid for the manufacture of polyvinyl acetate emulsion for wood adhesives, high water resistance like DIN D3 level can be achieved. This level of performance is accomplished without the addition of any cross-linking agents thanks to the excellent water resistance of Exceval™ itself. Exceval™ contributes to the production of "formaldehyde free", environmentally friendly wood adhesives. Due to its high water resistance utilized in top coats in direct thermal papers it is able to protect the imaging layer from being damaged.

In aqueous gas barrier coating applications, coatings made of Exceval™ absorb significantly less humidity. Therefore Exceval™ provides coatings with excellent gas barrier properties, e.g. toward oxygen, carbon dioxide and various aromas even at elevated relative humidity. Furthermore, the resulting coatings are highly transparent and glossy, have a strong chemical resistance and provide good adhesion to metallization as well as excellent printability.

One additional interesting character is the formation of an excellent oil and grease barrier when coated on papers because of better film forming properties. Exceval™ is an excellent gap filler between paper pulp which results in less permeability of liquids. Exceval™ is an FDA certified product and can be used in paper coating formulas and will be the best candidate of non-fluoro chemical barrier agents in the next generation of grease proof papers.

Elvanol™

Kuraray's polyvinyl alcohol

Elvanol™ is a recent addition to Kuraray's polyvinyl alcohol product portfolio. Its unique particle morphology, coming from a special production process expands its range of applications. An important advantage is improved water solubility and dissolving time and therefore energy consumption could be reduced dramatically. Elvanol™ can be dissolved in the continuous cooking process designed for starch in which standard polyvinyl alcohols remain undissolved. This will be a significant benefit in paper coating applications, especially where polyvinyl alcohols are used together with starch to enhance performance. Another valuable advantage is to produce an enhanced blending with fine particle materials like inorganic fillers. This characteristic provides a more uniform mold in compression molding type applications.

Elvanol™ T grades are unique copolymers developed especially for use as warp sizes for polyester / cotton blends and other spun yarns. What makes Elvanol™ T grades so special is an increased solubility into water under alkaline conditions and this is the key to more effective "de-sizing". Their performance is not deteriorated even when recycled and the copolymers will be the most economical textile sizing agent to meet environmental requirements from the market.

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

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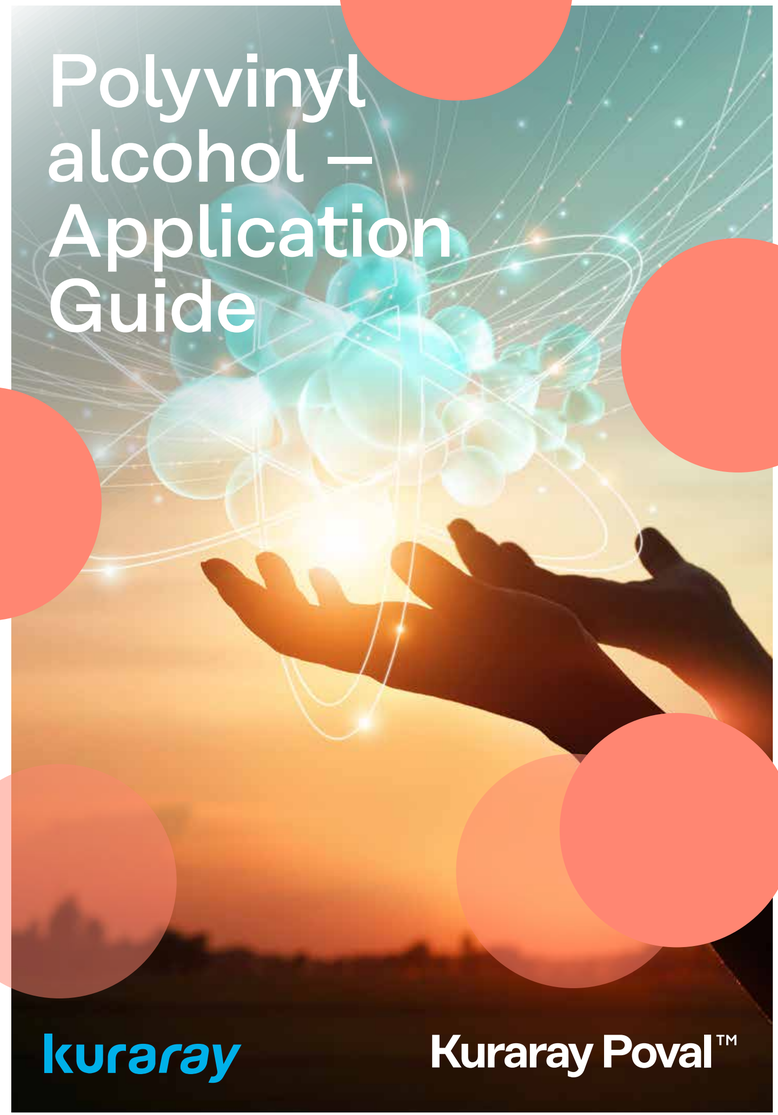
Polyvinyl alcohol – Application Guide



kuraray

Kuraray Poval™

Polyvinyl Alcohol

A champion in versatility

The applications of polyvinyl alcohol are extremely wide-ranging. The main uses are in the paper, textile, construction and adhesive industries as well as cosmetics, packaging and electronics. The physical and chemical properties make polyvinyl alcohol very versatile. Kuraray Poval™, Exceval™ and Elvanol™ are water soluble, have excellent film forming characteristics and high tensile strength.

In addition, the polymers are highly elastic and resistant to organic solvents. They also have dispersing power / surface activity to make emulsions and suspensions like surfactants. Reactivity of numerous hydroxyl groups with substances such as aldehydes and other reactive compounds expand the range even wider.

In the paper industry polyvinyl alcohol plays an important role as a carrier for optical brighteners. In the manufacture of bank notes it guarantees extremely hard-wearing properties and its use as a creping adhesive contributes to high productivity of tissue paper. Polyvinyl alcohol is also well known as a binder of fine particle inorganic fillers like fumed silica in ink jet papers for high quality photo printing.

In adhesives, polyvinyl acetate and vinyl acetate – ethylene emulsions realize sufficient adhesive strength on woods and papers thanks to the stabilization by polyvinyl alcohol. As a component of remoistenable adhesives, e.g. for postage stamps, partially hydrolyzed grades ensure that the adhesive strength is not impaired even in fluctuating air humidity. In the production of high strength industrial ceramics, polyvinyl alcohol acts as a temporary binder /green strength additive.

Their solvent resistance ensures the functionality of protective clothing. In the construction industry polyvinyl alcohol is a well used component in compounds as a film forming agent. In the application of oil field cement polyvinyl alcohol significantly reduces fluid loss which prevents defects in oil wells.