**Europe**

The excellent water resistance of EXCEVAL™ makes it especially suitable for wood adhesives. Due to its high water resistance utilized in top coats it is able to protect the imaging layer from being damaged. In aqueous barrier coating applications, coatings made of EXCEL™ perform superior to low humidity. Therefore EXCEL™ provides coatings with excellent properties, e.g. toward oxygen, carbon di-oxide and water vapor. In contrast EXCEL™ offers 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 bonding with free particle materials like inorganic fillers. This characteristic promotes a more uniform film in consistent coating type applications. EXCEL™ T grades are unique copolymers which are reactive toward oxygen, carbon dioxide and other gases. This makes EXCEL™ T grades ideal for polymer / starch blends and other paper grades. The EXCEL™ T grades provide a barrier when coated on papers because of their highly reactive, crosslinkable and foamable characteristics. They have high film forming 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 adhesive 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 PVA resins.

**KURARAY** - Here to Innovate.
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 expands 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.

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