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Bringing textiles to life

ELVANOL™ IN THE TEXTILE INDUSTRY

THE PERFORMANCE ADVANTAGES OF KURARAY ELVANOL™ PVOH

VERSATILITY	T-Grade copolymers have essentially the same film strength as a fully hydrolyzed polyvinyl alchohol (PVOH), the desizeability of a partially hydrolyzed PVOH, and the ease-of-use of a blend	SIZE BATH STABILITY	No viscosity degradation even after days at elevated temperature
		EASE OF DESIZING	Desizes better than medium- or high-viscosity partially hydrolyzed grades
LOW ADD-ON	As much as 50% less than starch		
HIGH WEAVING EFFICIENCY	Fewer loom stops	ENVIRONMENTAL	Lower BOD & COD than starch

ELVANOL™ T-Grades are unique copolymers developed especially for use as warp sizes for polyester/cotton blends and other spun yarns. Alone, or in combination with starch and additives, ELVANOL™ T-Grades are being used successfully on many different types of spun yarn, for example:

- acetat
- acrylic
- cotton
- rayon
- wool
- nylon and polyester spuns
- blends as polyester/cotton, polyester/wool, and polyester/rayon.

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ADVANTAGES OF ELVANOL™ T-GRADES:

Low Add-On:
The high film strength, abrasion resistance, and excellent adhesion of ELVANOL™ T-Grades permit their use at about one-third to one-half of the add-on required with starch formulas. Since lower add-on and higher adhesion result in less shedding on the loom, less frequent cleaning of drop wires, heddles, and reeds is required. Reduced add-on also permits greater warp yardage per beam, with consequently fewer doffs at the slasher and fewer tie-ins at the looms. This in turn means increased production at lower costs.

High Weaving Efficiency:
Yarns sized with ELVANOL™ T-Grades show excellent weaving performance with few loom stops. Good hairiness reduction results in low warp-related filling stops on air jet looms.

Low Weave-Room Humidity:
Weaving efficiency remains high over a wide range of humidity's as ELVANOL™ T-Grades remain flexible at low humidity, and are not softened at higher humidity's. High humidity is not required for good weaving performance.

Excellent Size Bath Stability:
Solutions of ELVANOL™ T-Grades are non-corrosive and are not subject to spoilage. Unlike starch sizing materials, they can be held at elevated temperatures for days without viscosity degradation. There is no need to heat pipelines to prevent gelling of the size solution.

Ease of Desizing:
ELVANOL™ T-Grades dissolve readily in hot water, without the need for costly enzymes. They are easily removed, even from heat-set polyester/cotton fabrics. Film dissolution studies show ELVANOL™ Grades T-66 and T-91 to exhibit better dissolving characteristics than medium or high viscosity partially hydrolyzed grades at 140-160°F (60-71°C).

Environmentally Friendly:
ELVANOL™ T-Grades have low Biological Oxygen Demand (BOD) compared to many other sizes. Combined with the ability to weave efficiently with low add-on, this results in a low BOD and COD (Chemical Oxygen Demand) in the desize stream to a finishing mill's waste water treatment plant. ELVANOL™ copolymers are degradable in properly designed and operated activated sludge waste water treatment systems.

Economically Recoverable and Reusable:
The unique molecular structure of the ELVANOL™ T-grade copolymers is extremely chemically stable, and is not hydrolyzed or otherwise chemically altered in the heat and stresses of a size recovery system. The T-grades are easily recovered and reused in any type of commercially available ultrafiltration system. Reuse is straightforward, as there is no viscosity change during desizing, ultrafiltration, or storage.
High concentrations can be achieved, reducing transportation costs and providing maximum flexibility in reuse of the reclaimed solutions.

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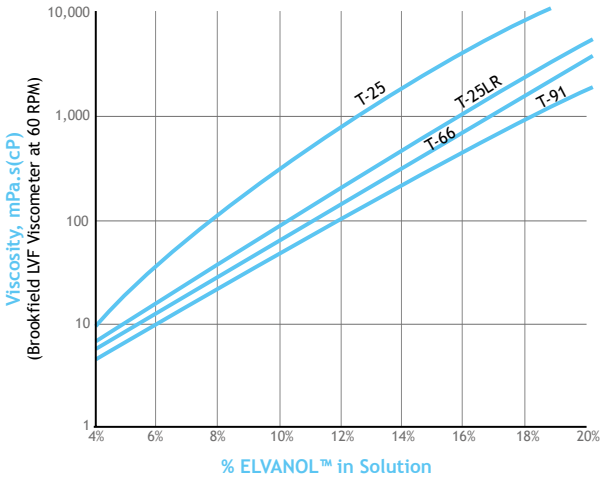
RESIN CHARACTERISTICS

Supplied as white, granular solids, ELVANOL™ T-Grades slurry easily in cold water without lumping and dissolve readily on heating.

PREPARING SIZE SOLUTIONS

ELVANOL™ polyvinyl alcohol disperses smoothly in cold water and dissolves readily on heating. Size baths based on ELVANOL™ alone or in combination with starch are easily prepared in all types of equipment now being used for size preparation.

Effects of Concentration on Viscosity of ELVANOL™ at 160°F Size Bath Formulas



SIZE BATH FORMULAS

ELVANOL™ T-Grades can be used alone or in combination with starches and additives, depending on the yarn and weave and on individual mill preference. Its applications range from:

- a 100% PVOH single component size for polyester,
- to 50-75% PVOH/starch blends for polyester/cotton blends,
- to 50% PVOH/starch blends for cotton to use as a binder in 10-15% PVOH/starch blends for denim and towel pile formulations.

As a single-component size, polyvinyl alcohol is effective at low add-on for use with the entire spectrum of spun yarns being woven today, including natural, synthetic, and blend yarns such as polyester/cotton spun blends. The low add-on at which ELVANOL™ can be applied as a single component size is particularly advantageous for tight fabric constructions that are difficult to weave. In combinations with starch, ELVANOL™ improves the strength of the size film and provides the required adhesion to synthetic yarns

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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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