

# DuPont™ Elvanol® T-25

## POLYVINYL ALCOHOL

### Product Data Sheet

#### Description

The rapid growth of synthetic and blend fabrics has brought with it the need for improved warp size materials having better adhesion, especially to the hydrophobic synthetic fibers. Elvanol® T-25 is a unique copolymer polyvinyl alcohol (PVA) developed especially for use as a warp size for polyester/ cotton blends and other spun yarns. Alone or in combination with starch, Elvanol® T-25 is being used successfully on practically every type of spun yarn now on the market; including acetate, acrylic, cotton, wool, nylon, and polyester spuns and such blends as polyester/cotton, polyester/wool, and polyester/ rayon.

#### Typical Properties of Elvanol® T-25

Viscosity, cps <sup>1</sup>	24.0-32.0
Solution, pH	5.0-7.0
Volatiles, wt. % max.	5.0
Ash, wt. % max. <sup>2</sup>	---
Residual Methanol, wt. % max. <sup>3</sup>	<0.99

<sup>1</sup> Viscosity in mPa.s (cP) of a 4% solids aqueous solution at 20°C (68°F)

<sup>2</sup> Dry basis, calculated as % Na<sub>2</sub>O

<sup>3</sup> As manufactured

#### Advantages of Elvanol® T-25

Size bath formulas based on Elvanol® T-25 are simple and easy to prepare, and run without difficulty on the slasher. Important performance advantages of Elvanol® T-25 as a warp size include the following:

#### Low Add-On

The high film strength, abrasion resistance, and excellent adhesion of Elvanol® T-25 permit its use at about one-half of the add-on required with starch formulas. Since lower add-on results 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 labor costs. "Tight" constructions are easier to weave at low size add-on, as there is more air space in the reed. Finally, the lower weight of size present reduces freight costs on shipments of grey cloth to finishing mills.

#### High Weaving Efficiency

Yarns sized with Elvanol® T-25 show excellent weaving performance with few loom stops. Since warp yardage per beam is greater, loom time per beam is longer.

#### Low Weave Room Humidity

Although weaving efficiency remains high over a wide range of humidity, warps sized with Elvanol® T-25 do not require high humidity for good weaving performance. Consequently, a more comfortable working atmosphere can be maintained without sacrificing efficiency. Lower humidity also prolongs the life of loom parts that are subject to corrosion in moist atmospheres.

#### Excellent Size Bath Stability

Solutions of Elvanol® T-25 are noncorrosive and are not subject to spoilage. Unlike starch sizing material, 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.



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### Ease of Desizing

Elvanol® T-25 dissolves readily in hot water, without the need for costly enzymes. It is easily removed, even from heat-set polyester/cotton fabrics.

### Favorable Cost Performance

The foregoing advantages make the overall cost/performance of warp sizes based on Elvanol® attractive, particularly for polyester blend yarns where ordinary sizes do not perform well at the low add-on required to achieve fabric quality.

Further savings are realized through reduced labor costs in the weave room and reduced freight costs on grey goods. In addition, finishing mills realize cost advantages resulting from elimination of the need for enzymes used to desize starch and the reduced amount of solids to be removed.

### Resin Characteristics

Elvanol® T-25 is a unique copolymer polyvinyl alcohol designed specifically for use as a warp size for spun yarns. Supplied as a white, granular solid, it slurries easily in cold water without lumping and dissolves readily on heating. Solutions of Elvanol® T-25 do not gel or mold, they can be stored over weekends and shutdown periods without impairing their usefulness.

### Safety & Handling

Read and understand the Materials Safety Data Sheet (MSDS) before using this product. Elvanol® is technical quality polyvinyl alcohol. It is not recommended for inclusion in any food or preparation that might be taken internally.

Under certain conditions of use, dust may be formed from Elvanol® polyvinyl alcohol. DuPont recommends that dust from Elvanol® be treated as a nuisance dust, which is regulated by the Occupational Safety and Health Administration (OSHA) under Title 29, Code of Federal Regulations, Section 1910.1000. Under this section, an employee's exposure to nuisance dust shall be limited to 15 milligrams per cubic meter (mg/m<sup>3</sup>) of total dust and 5 mg/m<sup>3</sup> of respirable dust on a time-weighted average in any 8-hour shift of a 40-hour week.

The DuPont limit for polyvinyl alcohol exposure to nuisance dust is 10 mg/m<sup>3</sup>, and for respirable dust is 5 mg/m<sup>3</sup>. If excessive concentrations of dust are encountered, a mask or respirator and goggles should be worn. The mask or respirator should comply with Section 1910.134 of the OSHA regulations; the goggles should comply with Section 1910.133.

For bulk storage and handling of Elvanol® (e.g. storage silos) refer to *Elvanol® Bulk Storage and Handling Safety Guide*.

Elvanol® may be disposed of by incineration or landfill. However, any disposal method must be in compliance with all applicable local, state and federal regulations.

**DuPont Offices Worldwide**

**Americas**

DuPont Company, BMP26-2363  
Lancaster Pike & Route 141  
Wilmington, DE 19805 U.S.A.  
Telephone +1 302 774 1161  
Toll-free (USA) 800 628 6208  
Fax +1 302 892 7390

DuPont do Brasil, S.A.  
Alameda Itapecuru, 506  
06454-080 Barueri, SP Brasil  
Telephone +55 11 4166 8542  
Fax +55 11 4166 8720

**Asia Pacific**

DuPont China Holding Co, Ltd.  
15th Floor, Shui on Plaza  
333 Huai Hai Road (Central)  
Shanghai 200021, China  
Telephone +86 21 6386 6366  
Fax +65 6272 7494

**Europe / Middle East / Africa**

DuPont de Nemours Int'l. S.A.  
2, Chemin du Pavillon Box 50  
CH-1218 Le Grand Saconnex  
Geneva, Switzerland  
Telephone +41 22 717 51 11  
Fax +41 22 717 55 00

[Elvanol.dupont.com](http://Elvanol.dupont.com)

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