

PVA Filament Yarn

WATER-SOLUBLE VINYLON FILAMENT YARN

TECHNICAL
REFERENCE

PROCESS
GUIDANCE

Document: Technical Data Sheet (TDS)

Product specifications

Polymer: Polyvinyl Alcohol (PVA)

Spinning Method: Dry Spinning Process

Ref Code:

TDS-PVA-2026

Water-soluble polyvinyl alcohol (PVA) filament yarn. The following tables present grade-specific physical properties and processing reference values. Treatment temperature and measured water solubility are distinct parameters; confirm performance in use.

DISSOLVING RANGE 30-95°C+ Available in Low (SS), Med (SF) & High (SH) grades	MAX DRY TENACITY 5.0 cN/dtex Superior mechanical strength for high-speed weaving	FINENESS RANGE 31-330 dtex 12F to 100F filaments for delicate & dense structures	REFERENCE DATA Confirm grade selection and suitability through sample evaluation.
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PHYSICAL PROPERTIES SPECIFICATION

Type	Treatment Temp.	Available Sizes (T: dtex / F: fil)	Dry Tenacity (cN/dtex)	Dry Elong. (%)	Water Sol. (°C)	Shrinkage in Water (%) Max (Temp)	At 25°C	Stress Shrinkage Stress (cN/dtex)
SH	95°C or higher (203°F)	62T / 18F	3.3-4.3	11-18	89-97	35-55 (85°C)	0-5	0.04-0.15
SF	55°C or higher (131°F)	31T/12F / 44T/12F / 62T/24F / 88T/24F / 110T/25F / 220T/50F / 330T/100F	3.3-4.4	11-24	31-41	40-60 (40°C)	-	0.10-0.30
SS	30°C or higher (86°F)	62T/18F / 110T/30F / 220T/60F	2.7-3.7	15-25	15-24	-	-	-
Dope Dyed Yarn (Marking & Visual Tracking Grade)								
SF (Dyed)	55°C or higher (131°F)	62T / 18F (Red / Blue)	3.2-4.2	11-21	31-41	40-60 (40°C)	-	0.10-0.30
High-Shrinking Yarn (Elastic Puckering & Texture Creation)								
SHC	90°C or higher (194°F)	250T / 100F	3.8-5.0	10-18	81-89	55-65 (60°C)	40-50	0.20-0.40

SUPPLY FORMATS & SECONDARY PROCESSING STRUCTURES

In addition to standard flat filament bobbins, PVA yarn is custom-manufactured in [Twist yarn / Ply yarn] structures to match specific loom tension, warp weaving, embroidery backing, or hollow core yarn spinning requirements.

DISSOLUTION MECHANISM

PVA yarn dissolves through five sequential physical phases when immersed in heated water, transiting from physical shrinkage to complete aqueous colloidal dissolution.



DISSOLVING METHOD & PROCESSING PARAMETERS

01 Temperature Maintenance Heat treatment bath to designated temperature before loading textile material. Continuous thermal supply is mandatory during processing to maintain uniform dissolution temperature across the bath.	02 Bath Ratio & Agitation Maintain a minimum water-to-goods ratio of 1:30 (w/w). Continuous agitation allows unrestrained fabric movement, rapidly dispersing the viscous PVA glue-phase into the bulk solution.
03 Dwell Time Control Directly exposed yarn dissolves in 10-20 minutes. For tightly woven, dense knitted, or multi-ply structures, prolonged exposure of 30-60 minutes is required for deep liquor penetration.	04 Overflow Rinsing & Effluent Post-dissolution rinsing in clean overflowing warm water is vital. PVA dried onto fibers becomes permanently recalcitrant and stiff. Dissolved wastewater is 100% treatable via activated sludge biological digestion.

HANDLING, STORAGE & SAFETY PRECAUTIONS

Acclimatization: Transferring cold yarn boxes into warm humid plants induces condensation, causing surface fusion and unreeling failure. Allow 24-48 hours sealed conditioning prior to opening.

Storage Climate: Store in climate-controlled areas at 15-25°C and 50-70% RH away from direct sunlight.

Safety Warning: PVA yarn contracts instantly with heavy shrinkage stress when wet. Never wrap yarn around fingers or body parts when contacting water.

KEY INDUSTRIAL & APPAREL APPLICATIONS

Zero-Twist Towels

Hollow Core Yarns

Guipure & Openwork Lace

Super-fine Wool Reinforcement

Offset Roller Covers

Automotive Airbags & Cushioning