



SIZING



ACHITEXMINERVA

# SIZING

Achitex Minerva Group produces and sells a complete range of products for textile sizing, designed to improve the resistance to mechanical stress of the warp yarns during the weaving process, without altering their appearance and quality.

The range has been developed in compliance with the strictest international standards, to guarantee the protection of health, safety and the environment.

## APPLICATIVE RANGE



Sizing products for staple yarns



Sizing products for filament yarns

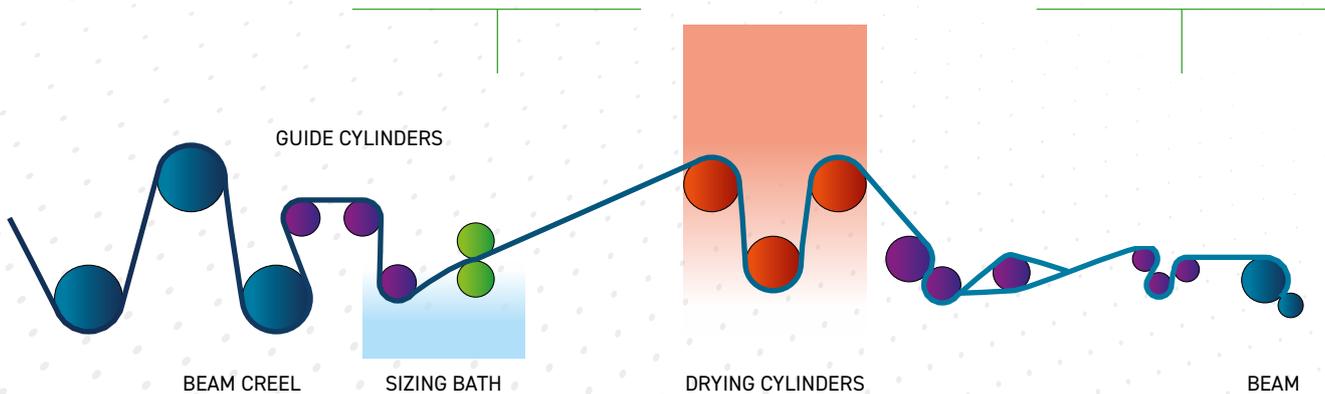


Lubricant waxing products for warping and after-sizing

### Preparation of the sizing

**bath:** disperse in water all the necessary ingredients in the cooking equipment, under stirring at room temperature, then heat up the solution obtained.

Once dried, the warp threads are wound up the beam, **ready to be used in weaving process.**



**Starting from a beam creel,** with the help of a series of guide cylinders, the warp yarns are passed through a sizing bath and squeezed by special cylinders, to eliminate the product in excess.

Subsequently, the treated warp threads pass through a series of **drying cylinders.**



## CONTINUOUS FILAMENT

POLYESTER	ACHISIZE	APPEARANCE	FILAMENT	SIZING	LOOM
	ACHISIZE PES	 Medium crystals	Flat-Textured	Single end	Dry-Water Jet
	ACHISIZE PES L conc	Liquid	Flat-Textured	Single end	Dry-Water Jet
	ACHISIZE J 150 B	Medium crystals	Flat-Textured	Single end	Dry-Water Jet

POLYAMIDE	ACHISIZE	APPEARANCE	FILAMENT	SIZING	LOOM
	ACHISIZE PA 100	Liquid	Flat-Textured	Single end-Back beam	Dry

## MODIFIED STARCHES

FOR ALL FIBERS	ACHISIZE	APPEARANCE	VISCOSITY 80°C 10%	pH 10%	MOISTURE	DESIZING
	ACHISIZE PS	Powder	1800 - 2200 cps	6 - 8	≤ 15	With enzymes
	ACHISIZE C 60	Powder	40 - 90 cps	9,5 - 12	≤ 10	Without enzymes
	ACHISIZE E 50	 Powder	90 - 130 cps	6 - 7,5	≤ 10	With enzymes

## POLYVINYLALCOHOL

FOR ALL FIBERS	ACHISIZE	APPEARANCE	VISCOSITY 20°C, 4%	pH 4%	HYDROLYSIS	PURITY	VOLATILES	DESIZING
	ACHISIZE F 105	Medium crystals	4 - 6 cps	5 - 8	86 - 89	≥ 94%	≤ 5	Without enzymes
	ACHISIZE F 170	Medium crystals	20 - 30 cps	5 - 8	86 - 89	≥ 94%	≤ 5	Without enzymes

## CARBOXYMETILCELLULOSES

FOR ALL FIBERS	ACHISIZE	APPEARANCE	VISCOSITY 20°C, 2%	pH 2%	MOISTURE	PURITY	VOLATILES	DESIZING
	ACHISIZE 3S	Coarse powder	18 - 28 cps	6 - 9,5	≤ 8%	≥ 94%	Purified	Without enzymes
	ACHISIZE I4	 Coarse powder	15 - 25 cps	6 - 9,5	≤ 8%	≥ 94%	Semi-purified	Without enzymes

## ACRYLIC RESIN

FOR ALL FIBERS	ACHISIZE	APPEARANCE	VISCOSITY 25°C 5%	pH	MOISTURE	DESIZING
	ACHISIZE A15	Powder	28 - 32 cps	6 - 9,5	≤ 5%	Without enzymes

## ONE-SHOT PRODUCT FOR OPEN END YARN

FOR ALL FIBERS	ACHISIZE	APPEARANCE	VISCOSITY 85°C, 2%	DESIZING
	ACHISIZE SAH	 Powder	75 - 150 cps	Without enzymes

## ONE-SHOT PRODUCTS

FOR ALL FIBERS	APPEARANCE	VISCOSITY 85°C, 10%	pH 10%	REINFORCING ADDITIVE	DESIZING
ACHISIZE CV 80 LC 	Powder	60 - 100 cps	6 - 8	Synthetic	With enzymes
ACHISIZE CV 90 LC	Powder	60 - 100 cps	6 - 8	Synthetic	Without enzymes
ACHISIZE CV 105 LC 	Powder	70 - 100 cps	7 - 9	Synthetic	Without enzymes
ACHISIZE VD 80	Powder	40 - 60 cps	6 - 8	Synthetic	Without enzymes
ACHISIZE VD 40 NK LC 	Powder	60 - 100 cps	6 - 8	Synthetic	Without enzymes
ACHISIZE CZ 	Powder	110 - 180 cps	5 - 8	Synthetic	Without enzymes

## GOTS WITHOUT RESTRICTION

FOR ALL FIBERS	APPEARANCE	VISCOSITY 85°C, 10%	pH 10%	REMARKS	DESIZING
ACHISIZE G 40 	Powder	40 - 60 cps	5,5 - 7,5	One shot product	Without enzymes

## SPECIAL PRODUCTS

ARAMID FIBERS	APPEARANCE	VISCOSITY 85°C, 10%	pH 10%	REMARKS	DESIZING
ACHISIZE B	Powder	90 - 140 cps	6 - 9	One shot product	Without enzymes

ACETATE FIBERS	APPEARANCE	VISCOSITY 50°C, 16%	pH 9%	REMARKS	DESIZING
ACHISIZE A 40	Liquid	< 80 cps	5 - 8	One shot product	Without enzymes

VISCOSE FIBERS	APPEARANCE	VISCOSITY 20°C	pH 10%	REMARKS	DESIZING
ACHISIZE CV 40	Liquid	10000 - 20000 cps	7 - 9	One shot product	Without enzymes

SHIRT ARTICLES (NATURAL FIBERS)	APPEARANCE	VISCOSITY 85°C, 10%	pH 10%	REINFORCING ADDITIVE	DESIZING
ACHISIZE MCZ 	Powder	90 - 140 cps	6 - 8	Achisize DE 60	Without enzymes

## DENIM SIZING PRODUCTS

FOR ALL FIBERS	APPEARANCE	VISCOSITY 85°C, 10%	REMARKS	DESIZING
ACHISIZE 03 ECO	Powder	25 - 50 cps	One-shot product	Depending on the machine technology
ACHISIZE ITV 	Powder	40 - 80 cps	One-shot product	With enzymes
ACHISIZE VD 50 LC 	Powder	40 - 60 cps	Anionic and non-ionic synthetic reinforcing additives	Without enzymes
ACHISIZE K	Powder	20 - 100 cps	One-shot product	Not necessary



## WARPING AND COLD SIZING PRODUCTS

		APPEARANCE	IONICITY	VISCOSITY	ALSO FOR POST SIZING
ACHISIZE E 1		Liquid	Non-ionic	40 - 80 cps (25°C)	
ACHISIZE ES 7		Liquid	Non-ionic	150 - 350 cps (20°C)	
ACHISIZE ES 20		Liquid	Non-ionic	200 - 450 cps (50°C)	
ACHIWAX RF		Flakes	Non-ionic	-	●
ACHIWAX P		Liquid	Non-ionic	44 - 48 cps (20°C)	●
ACHIWAX P 45		Liquid	Non-ionic	16 - 55 cps (20°C)	●
CERANTEX PS LIQ		Liquid	Non-ionic	~90 cps (20°C)	●
CONALUBE ECO 020		Liquid	Non-ionic	15 - 20 cps (20°C)	●

## AUXILIARIES

		REMARKS	IONICITY
ACHITINA GO		Extremely rapid wetting agent	Anionic / Non-ionic
ACHISTAT 073 F		Antistatic agent for all type of fibers at high concentration	Anionic / Non-ionic
ECOPON LO		Detergent and wetting agent for desizing	Non-ionic
ECOLASE HN		Enzymatic desizing agent	Non-ionic
DEFOAMER VO		Non-silicone defoamer with deaerating properties	Non-ionic



Suitable for GOTS without restrictions



May only be used in compliance with GOTS criteria 2.4.3

# ACHISIZE PIGMENT TECHNOLOGY

Color the yarns directly during the sizing process, through the use of pigment dispersions, thanks to a simple system called **Achisize Pigment Technology**, which allows to size and dye the yarns in one step, rather than two.

The difference, compared to the traditional sizing system, is that a pigmented sizing bath is used.

This system is suitable to dye cotton, cotton / polyester and wool, without affecting the quality of the fibers.



## ADVANTAGES

- ✓ **Fast:** one process instead of two, saving time
- ✓ **Economic and ecological:** saving water and energy, as well as pigments. Less water to purify and regenerate
- ✓ High uniformity and reproducibility of shades
- ✓ Perfect washability of the equipment with warm water

This technology provides the use of the Minerprint® pigments and the following Achitex Minerva products:

### ACHISIZE V3

Sizing product suitable for cotton, cotton / polyester or wool yarns and counts, essential for reducing yarn breakage and production stoppages on the weaving machine.

### BINDER 67

Aqueous dispersion of acrylic resin, with an excellent mechanical stability, suitable to protect yarns from high friction conditions such as yarn- to-yarn and yarn-to-metal parts.

### ACHIFIX PD

High concentration auxiliary, with levelling and anti-migration features. It allows to obtain uniform dyeing by avoiding pigment migration on the fabric.

### CROSSLINKER 59

Crosslinker that significantly increases washing and dry fastness, without affecting the final touch of the treated yarns.

### MINERPRINT® PIGMENTS

Wide range of water-based dispersions of selected organic pigments, finely dispersed and perfectly homogeneous.





## STANDARD APPLICATION

### PIGMENT DYEING IN A SINGLE SIZING BATH

This technology involves the application of pigment dispersions on raw white yarns, directly in the sizing process in a single step, modifying only the sizing solution. This application involves the use of air looms during the subsequent weaving process, different looms are not suitable.



### ADDITIONAL ADVANTAGES

- ✓ Possibility to work on short sizing machine, saving yarns on every article/shade change
- ✓ Possibility to work directly on raw white staple yarn, only for the desired length
- ✓ Easy and rapid color change
- ✓ Possibility to dye only the warp yarns
- ✓ Possibility to adjust "wash-off effects" as desired

### Process:

- ✓ Under mechanical stirring, the product disperse in cold water by adding direct steam; the solution have to reach a temperature between 85 and 90°C and then have to be "cooked" for 20-25 minutes.
- ✓ By adding cold water, lower the temperature of the solution to about 70°C, and add the necessary pigments and additives, under constant mechanical stirring.  
Products must be added in the following sequence:  
Binder 67  
Achifix PD  
Crosslinker 59  
Minerprint® Pigments
- ✓ Stir the solution for 5 minutes.
- ✓ This pigmented sizing bath simply replaces the standard sizing liquor used in the traditional process.

## SPECIAL APPLICATION

### SUPER DENIM

Starting from a denim yarn dyed through the traditional indigo dyeing system, adding binder and crosslinker to the sizing bath, it's possible to increase the washing fastness of indigo yarns, directly during the sizing process. This application allows to obtain a washing resistance higher than that obtained with conventional cationic fixing agents, but also a wider range of effects and darker shades on washed denim.

### Process:

For a better effect, add under stirring the following products directly in the sizing bath, previously prepared and brought to a temperature between 65°C and 70°C

- ✓ 40 - 50 g/l of Binder 67
- ✓ 10 - 12 g/l of Crosslinker 59

This recipe, having a non-ionic character, is perfectly compatible with any sizing product.

### DENIM OVER-DYEING

This application differ from the standard one in the starting yarn, which is a denim yarn dyed through the traditional indigo dyeing system. The pigment is applied to this yarn by changing the "matisse" of the fabric, acting exclusively on the warp, guaranteeing the "white texture effect" typical of denim fabrics. This application involves the use of air looms during the subsequent weaving process, different looms are not suitable.

### EQUIPMENT CLEANING FOR ALL APPLICATIONS

The pigmented sizing solution can be easily removed using warm water. The ease equipment cleaning allows to switch from one shade to another quickly, without any color contamination.



# ACHITEX MINERVA

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[info@achitexminerva.com](mailto:info@achitexminerva.com)

[www.achitexminerva.com](http://www.achitexminerva.com)

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