



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

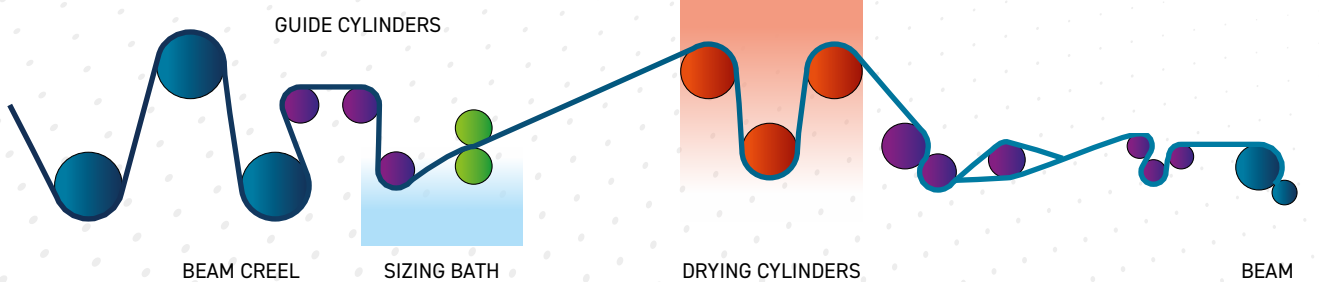


Lubricant waxing products for warping and after-sizing

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

MODIFIED STARCHES

| FOR ALL FIBERS | | 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 | | 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 | | 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 | | 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 | | 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.



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