



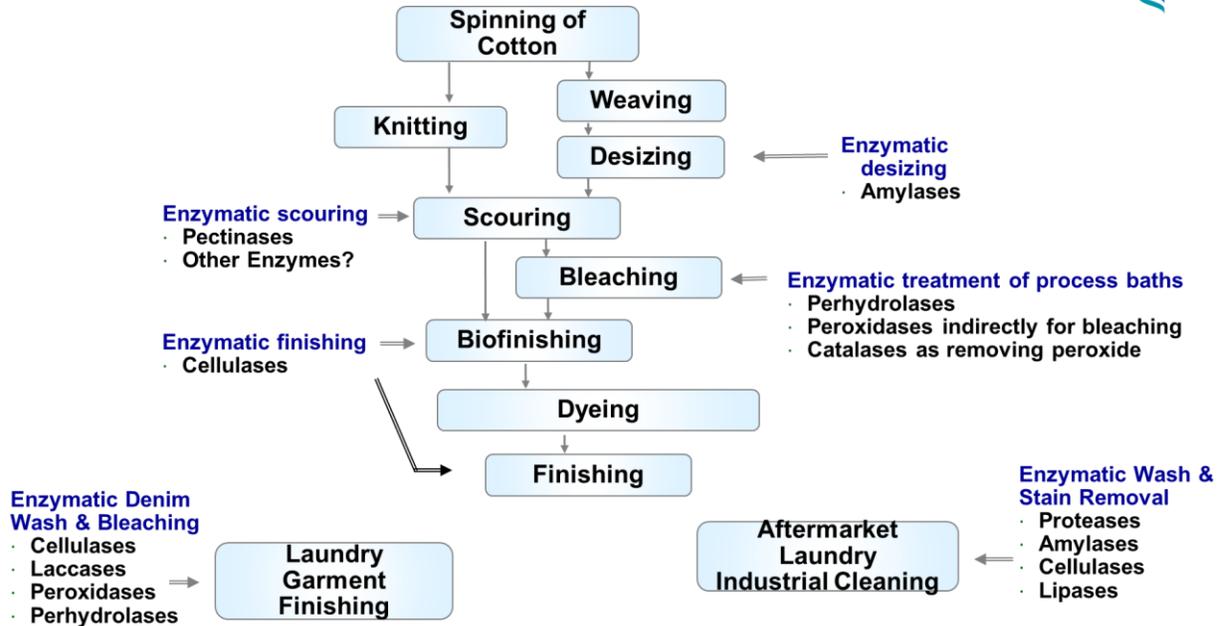
Cekal Specialties Inc.

Biocatalysts for Textile

Processing and Cleaning



***The Drive
Towards
Sustainability***

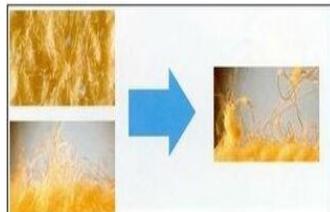


Enzymes can often offer sustainable and cost-effective alternatives to traditional chemical methods. Cekal offers base materials as well as custom tailored solutions for textile wet processing and cleaning.

Biopreparation



Biomanipulation of Fibers



Bioeffects and Fashion



Biocleaning



Enzymatic Preparation

Desizing (cotton)

After weaving, the size on the fabric must be removed to prepare the goods for the following steps such as bleaching or dyeing. Enzymes can be used to remove starch size without harming the fabric.

Scouring (cotton)

Bio-scouring removes impurities in the greige cotton fabric for a sustainable scouring textile process. A biocatalyst treatment will improve the absorbency and dyeability of the treated cotton. However, this process will have no effect on the natural color of the fabric.



Bio-scouring is suitable as a base for dyeing of medium and dark shades, but lighter and brighter shades will need a bleach treatment to improve the base color of the fabric. This can be achieved at near neutral pH, and lower temperature by using a specially formulated enzyme and surfactant package, in combination with hydrogen peroxide.

Bleaching (cotton)

Traditional textile bleaching removes colorants to provide white bright fabric or prepare the fabric for dyeing. The enzymatic process can often eliminate harsh chemicals such as Sodium Hydroxide.



Peroxide Neutralization

At the end of a bleaching process, the effluent must not contain un-neutralized Hydrogen Peroxide. An enzymatic catalyst can rapidly decompose Hydrogen Peroxide without harming the textile material.

Enzymatic Manipulation of Fibers

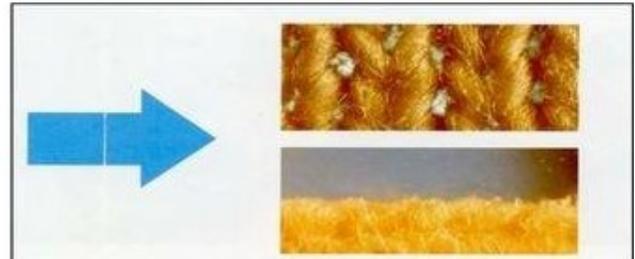
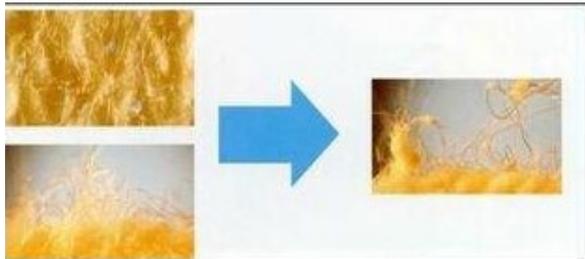
Abrasion (cotton)

Worn or abraded garments, mainly denim, have been a popular trend in the fashion industry for decades. Traditionally, denim was chemically treated with harsh acids or stone washed. Our enzymatic methods can eliminate the harsh acids and enhance as well as eliminate the stone wash providing a much more sustainable method of garment processing.



Depilling (cotton)

“Pills” are small balls of lint on the surface of fabric that form after the fabric has been abraded. Using specific enzymes can remove the loose fibers to decrease pilling on the fabric.



Softening (cotton)

Enzyme softening is a laundering process which uses enzymes to soften and finish fabric to provide jeans and other fabric a more comfortable feel.



Enzymatic Fashion Effects and Reduction of Color



Specialty enzyme methodology can be used to lighten shades of dyed fabric. Because different enzymes can react with specific dye classes, a wide array of fashion effects becomes feasible.



Enzymatic Cleaning and Laundry

Biocleaning is achieved using enzymes specifically for detergent washing and aftercare to meet consumer demands. Multiple enzyme strains are used, such as protease, amylase, cellulase, and lipase, that act upon fabric soils and stains, under mild conditions that do not damage the fabrics. Lower temperature washing conditions may be used with less chemical and alkali to decrease environmental impact.





Cekal Specialties Enzymes

Several workhorse enzyme bases are available under the AB Enzyme tradename, including:

***Ecostone F7**: Cellulase powder for denim processing, with minimal back-staining and tensile strength loss.

***Ecostone LT 300**: Cold temperature neutral cellulase powder for denim abrasion.

***Ecostone LBS500**: A unique powder-enzyme product with a wide pH and temperature range developed for denim laundry applications.

***Ecostone OSB7**: Neutral cellulase liquid used for biopolish and abrasion.

Additionally, **Cekazyme** is our generic tradename for textile and industrial enzymes. Our specialty is the development of custom enzyme formulations to fulfil the needs and criteria of our customers.

*ECOSTONE is a registered brand of AB Enzymes. Cekal Specialties is the exclusive distributor for AB Enzymes Textile Enzymes for the North and South American Regions.