

## TECHNICAL LITERATURE

### SILTEX 30503/Biosoft MAP

**Siltex 30503/Biosoft MAP** is a liquid cellulase enzyme that can effectively be used for biofinishing of cellulosic fabrics. It is an acid cellulase that performs best at a pH of 4.5 – 5.0 and a temperature of 45°C – 60°C. Siltex 30503/Biosoft MAP is designed for use in biofinishing of all cellulosic fabrics.

#### CHARACTERISTICS:

Appearance	: Straw color liquid
Odor	: Mild fermentation odor
pH (as is)	: 4.0 – 5.5
Density	: 1.00 - 1.12
pH range (application)	: 4.5 – 5.0
Temperature (application)	: 50 – 60°C

#### PROPERTIES:

- Reduces the fuzz and pilling.
- Significantly soften cotton fabrics, both woven and knits.
- Increase the gloss and luster
- Yields a fuller, deeper color before or during the garment dyeing.
- Biofinishing may be performed in either semi-continuous or batch process.

#### APPLICATION:

**Siltex 30503/Biosoft MAP** is very effective with in a pH of 4.5 to 5.5. Acetic acid based pH controls are preferred over citric or phosphate. **Siltex 30503/Biosoft MAP** may be applied at any wet processing step in the garment finishing process. It is best applied after preparation/bleaching, either as a separate process or in connection with garment dyeing. However,

**Siltex 30503/Biosoft MAP** may also be applied after dyeing.

When combined with other processes, the treatment conditions should be appropriate for both processes.

**Siltex 30503/Biosoft MAP** will function from 45°C – 60°C.

The closer the operating parameters are kept to the above recommendations, the better the utilization of Siltex 30503/Biosoft MAP.

#### RECOMMENDATIONS FOR USAGE:

##### Biofinishing:

##### **Processing:**

1. Follow your normal "desize" and rinse procedures that are currently being utilized. Insure that the bath and garments are pH 7.0 or less before starting the biofinishing cycle

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2. As a separate processing step. The loading and machine rotation should be the same as used for dyeing. The L:R is 1:8. The pH should be adjusted to pH 4.5 – 5.0 with acetic (acetate) based buffer. Enzyme concentration will depend on fabric type, but should start in the 0.25% to 1.5% owg (5g per kg of fabric to 15g per kg of fabric) range. The cycle should last from 20 to 45 minutes at a temperature range of 45°C – 60°C. The treatment should be terminated by raising the temperature to 71°C - 75°C for 5 – 10 minutes or raising the pH to 9 – 10 with soda ash (sodium carbonate). The balance of the processing can now be carried out.

3. Combined with dyeing (bifunctional reactive dye for example.) The liquid to goods ratio should be 1:8. The initial bath conditions should be 30°C. Add the dye, salt and Siltex 30503/Biosoft MAP. Adjust pH to 4.5 – 5.0 with an acetic buffer. Raise the temperature 1°C /minute to 60°C. Alkali should be added in the usual manner. Maintain this temperature as would be done for a normal dyeing.

Note: The very next step after the Siltex 30503/Biosoft MAP process should be the inactivation step accomplished by raising the pH above 8.0 or raising the temperature above 71°C for 10 minutes.

#### Special Processing Notes:

1. Pre trials should be carried out to establish effect.
2. The liquor ratio should allow free movement of the goods, but should be low enough to create the mechanical action required to achieve the weight loss or biofinishing. The high impact of mechanical action is necessary in order to achieve the desired biofinishing effect.
3. Any anionic surfactants, or those containing sulfate or sulphonate groups, should not be used with Siltex 30503/Biosoft MAP. We recommend linear alcohol ethoxylates.

#### 100% Cotton Softening:

To soften we recommend the following parameters.

Liquor to goods ratio: 8:1

pH: 4.8 (with acetic acid )

Temperature: 45°C – 60°C (113°F – 140°F)

Siltex 30503/Biosoft MAP concentration: 0.5 – 2.0% owg

Time: 20 – 60 minutes depending on desired softness.

To achieve an even softer hand, we suggest the addition of 1% - 3% of an amino functional silicone, like **Siltex 30168**, after running 2/3 of the total cycle time and completing the cycle. Follow this with several neutral rinses, extract and dry.

NOTE: The information contained in this data sheet is the results of careful tests carried out objectively. Their purpose is to help our customers but do not imply any engagement on our part.