Product application guideline

Bioblasting is the controlled hydrolysis of cellulosic fibers to modify the fabric in a way that reduces the pilling tendency and increases the smoothness and softness of the finished fabric. Cellusoft Combi 9800 L, is an easy-to-use cellulase specially developed to improve Bioblasting in the textile industry during the dyeing process.

Benefits

The use of Cellusoft Combi 9800 L allows the processor to carry out bioblasting, Bleach Clean Up and dyeing in one step. This allows for savings in time, water, and energy, while ensuring high-quality fabrics. Benefits include:

- Increased production throughput
- Saving on processing time and costs
- Improved reproducibility
- Ease of use
Performance

The performance of Cellusoft Combi depends on temperature and pH as shown in figure 1 and figure 2.

Figure 1. Temperature profile of Cellusoft Combi.

Figure 2. pH profile of Cellusoft Combi.
**Usage**

Cellusoft Combi 9800 L can be used on all jet dyeing equipment, or other wet processing equipment that allows for some mechanical action. It is added to the dyebath after the pH has been adjusted for dyeing, and prior to any auxiliaries being added. Bioblasting ends when the alkali is added for the fixation of reactive dyes.

<table>
<thead>
<tr>
<th>Fabric</th>
<th>100% cotton and cotton blends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>Jet dyer or similar high mechanical action machine</td>
</tr>
<tr>
<td>pH</td>
<td>5-8</td>
</tr>
<tr>
<td>Temperature</td>
<td>40-60°C</td>
</tr>
<tr>
<td>Liquor ratio</td>
<td>1:4 - 1:20</td>
</tr>
<tr>
<td>Dosage</td>
<td>0.25–1.0%</td>
</tr>
<tr>
<td>Duration</td>
<td>30-60 minutes</td>
</tr>
<tr>
<td>Inactivation</td>
<td>During dyeing: during alkali dosing in dyeing</td>
</tr>
</tbody>
</table>

**Application/process type**

A typical method of application is shown in the flow chart Figure 3a below.

*Figure 3a. Processing profile when using Cellusoft Combi together with dyeing – total time: 110 minutes.*

*Figure 3b. Processing profile when using a traditional 2-step process with catalase and cellulase – total time: 210 minutes.*
Storage in application

Enzymes gradually lose activity over time depending on storage temperature. Cool conditions are recommended. When stored in closed containers at 25°C (77°F), the product will maintain its declared activity for at least 3 months. Extended storage and/or adverse conditions, including higher temperatures, may lead to a higher dosage requirement.

Safety, handling, and storage

Safety, handling, and storage guidelines are provided with all products.