Fluorescent brightener for polyester fibres and their blends
Ultraphor SFN Liquid

Nature
Styrylbenzene derivative, nonionic

Storage
When stored in the original, sealed containers, at temperatures between 0 and 30 °C, Ultraphor SFN Liquid has a shelf life of at least 24 months. Once containers have been opened, the contents should be used up as soon as possible. Containers should always be closed tightly again after use.

Properties
Slightly bluish dispersion. Depending on the amounts applied, it gives white effects that are bluish to bluish-violet in shade.

Miscible with water in all proportions.

Solutions of the product, and fabric that has been padded and dried but not fixed, must be protected from exposure to light.

Light fastness on PES material: 5 – 6.

Good affinity at the boil, without a carrier, up to an application rate of 0.8 % brightener.

Ultraphor SFN Liquid has very good fixation properties, even at low temperatures.

The degree of whiteness is not affected by the pH over the range 2 – 12.

Stable in hydrogen peroxide and sodium hypochlorite bleaching liquors, and also in reductive bleaching liquors. Shade variations are possible.

Ultraphor SFN Liquid is less suitable for brightening CA, CTA and PA.

Application

Guideline recipes

HT process

0.1 – 0.8 % Ultraphor SFN Liquid
1 g/l Setamol® WS

pH: 4.5 – 5.5 with acetic acid
Liquor ratio: 5:1 – 20:1
Starting temperature: 50 – 60 °C
Heat to 130 °C in 30 min, then treat 15 – 30 min at 130 °C.

The use of Setamol WS is particularly important in the fluorescent brightening of wound packages.

Carrier process

0.1 – 0.8 % Ultraphor SFN Liquid
... % carrier as recommended by the manufacturer
0.5 – 1 g/l Setamol WS

pH: 4.5 – 5.5 with acetic acid
Liquor ratio: 5:1 – 20:1
Temperature: 98 – 105 °C
Time: 60 – 45 min
Palegal® process

Brightening of PES or PES blends at the boil without the addition of conventional carriers.

0.1 – 0.8 % Ultraphor SFN Liquid
0.5 g/l Palegal SFD or Palegal SF

pH: 4.5 – 5.5 with acetic acid
Liquor ratio: 10:1 – 20:1
60 min at 95 – 100 °C
Dry

Single-stage bleaching and brightening of PES/CO blends

0.1 – 0.8 % Ultraphor SFN Liquid
6 ml/l hydrogen peroxide 35 %
1 g/l sodium hydroxide
0.5 g/l Kieralon® OLB Conc.
1 g/l Prestogen® PL
0.5 g/l Palegal SFD or Palegal SF

Liquor ratio: 10:1 – 20:1
60 min at 95 – 98 °C
Single-stage drying and thermosol treatment: 30 s at 180 °C

Single-stage washing and brightening of PES and PES/CO blends

0.1 – 0.8 % Ultraphor SFN Liquid
0.5 g/l Palegal SFD or Palegal SF
2 g/l Lufibrol® E
0.5 g/l Kieralon OLB Conc.

Liquor ratio: 10:1 – 20:1
60 min at 95 – 98 °C
Single-stage drying and thermosol treatment: 30 s at 180 °C

Thermosol process

1 – 8 g/l Ultraphor SFN Liquid

Liquor pick-up: approx. 65 %
Dry
Thermosol fixation at 170 – 190 °C
Time: 30 – 15 s

Single-stage finishing and brightening of PES/CO

Shirting fabric PES/CO (67/33)

20 – 30 g/l Fixapret® CNR Conc.
8 – 10 g/l magnesium chloride cryst.
0.5 g/l Nekanil® LN or Laventin® LNB
20 g/l Siligen® E
10 g/l Perapret® PE 40
1 – 8 g/l Ultraphor SFN Liquid

pH: 4.5 – 5.5 with acetic acid
Liquor pick-up: 60 – 70 %
Dry
Fixation and curing: approx. 4 min at 150 °C

Flash-cure process using
Condensol® FB

10 – 15 g/l Condensol FB in place of MgCl₂ · 6H₂O
Single-stage drying curing and fixation: approx. 30 – 40 s at 170 °C

Note

1) Under the curing conditions given above, the use of Condensol FB in place of magnesium chloride results in a much lower content of free formaldehyde on the finished fabric.

2) We recommend that fabric with an alkaline reaction be acidified to a weakly acid pH before it is subjected to the single-stage finishing and brightening process.

3) As with all dispersions, the contents of the drum should be well stirred to ensure good homogeneity before product is removed.
Fastness properties

The following fastness data apply for PES at the optimum standard of whiteness and refer to the change in the white effect.

Ultraphor SFN Liquid

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light fastness (Xenotest® Heraeus GmbH)</td>
<td>5 – 6</td>
</tr>
<tr>
<td>DIN 54004</td>
<td></td>
</tr>
<tr>
<td>Wash fastness, 40 °C</td>
<td>5</td>
</tr>
<tr>
<td>DIN 54014</td>
<td></td>
</tr>
<tr>
<td>Wash fastness, 60 °C</td>
<td>5</td>
</tr>
<tr>
<td>DIN 54010</td>
<td></td>
</tr>
<tr>
<td>Fastness to sea water</td>
<td>5</td>
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<tr>
<td>DIN 54007</td>
<td></td>
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<tr>
<td>Fastness to perspiration</td>
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<tr>
<td>DIN 54020</td>
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</tr>
<tr>
<td>Alkaline</td>
<td>5</td>
</tr>
<tr>
<td>Acid</td>
<td>5</td>
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<tr>
<td>Fastness to dry cleaning</td>
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<tr>
<td>DIN 54024</td>
<td></td>
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<tr>
<td>Fastness to dry heat pleating and dry heat setting</td>
<td></td>
</tr>
<tr>
<td>180 °C</td>
<td>5</td>
</tr>
<tr>
<td>210 °C</td>
<td>4 – 5</td>
</tr>
<tr>
<td>Fastness to oxides of nitrogen</td>
<td>5</td>
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<tr>
<td>DIN 54025</td>
<td></td>
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</tbody>
</table>

Safety

When using this product, the information and advice given in our Safety Data Sheet should be observed. Due attention should also be given to the precautions necessary for handling chemicals.

Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.