Textile Effects

LANASET® PA

Dyeing concept for polyamide and polyamide/elastane
LANASET® & LANASET® PA

LANASET®

- Developed 30 years ago
- Tailor-made for wool dyeing
- Dyeing at pH 4.5 (iso-electric) to preserve wool quality
- No tippy dyeing on wool fiber
- Wider shade range compared to classic metal-complex dyes
- Most successful dye range in the history of wool dyeing
- Also used for polyamide dyeing
- Complicated expensive mixes

LANASET PA®

- Trichromy and 3 additional dyes introduced 10 years ago, limited shade coverage
- Tailor-made for polyamide, more economic than classic LANASET
- LANASET PA trichromy covers barriness better than classic LANASET trichromy
- Excellent build up on microfiber
- Now range extension with brilliant elements and global launch of LANASET PA
LANASET® PA

- Cutting-edge **Economic** tailor-made dyes for polyamide.
- **Excellent build up**: very deep shades are easy to achieve and polyamide microfiber dyeing is simple and efficient.
- **Outstanding wet fastness** properties: fastness requirements are met on numerous end products.
- **High light fastness** properties: suitable for outdoor and sportswear.
- Compact range incl. an excellent trichromy with perfect **tone-on-tone build up** on polyamide.
- Very high flexibility for shade matching since **LANASET PA** dyes are fully compatible with the original **LANASET** dyes.
Examples of Key benefits

LANASET® PA
Key Benefits

1. Operational and economic excellence
2. Outstanding fastness under any condition
3. Superior light fastness performance
4. Compact range with broad shade coverage
Step dyeing with LANASET® PA

<table>
<thead>
<tr>
<th>Temperature</th>
<th>40°C</th>
<th>55°C</th>
<th>70°C</th>
<th>85°C</th>
<th>98°C</th>
<th>98°C</th>
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<tbody>
<tr>
<td>Time</td>
<td>10 min</td>
<td></td>
<td></td>
<td></td>
<td>30 min</td>
<td>60 min</td>
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</tbody>
</table>

Exhaustion %

- LANASET® Yellow PA
- LANASET® Red PA
- LANASET® Blue PA
Compatibility of the trichromy

Exhaust dyeing on PA / PUE

0.55% LANASET® Yellow PA
0.25% LANASET® Red PA
0.50% LANASET® Blue PA
 Outstanding fastness under any condition

Washing fastness (without fix)
AATCC 61 2A 49°C
**Additional benefit: Outdoor garments wetfastness**

- It’s common practice to laminate fabrics for outdoor garments to achieve environmental resistance (wind / rain / waterproof).
- A good bond of the lamination is important to prevent delamination and is critical in developing proper seam strengths.
- Syntan fixing agents make the fiber surface hydrophobic and interfere proper lamination.

LANASET PA offer good washing fastness without additional syntan. The fabrics fulfill the requirements for lamination.
Outstanding fastness under any condition

LANASET® PA

Fastness to chlorinated water
without additional fastness improver

Others
### Outstanding fastness under any condition

**Additional benefit:** Fastness to chlorinated water

- Many of the LANASET PA dyes show already excellent fastness to chlorinated water *without additional chlorine fastness improver*
- The benefits:
  - No additional costs for fixing
  - No risk of shade change due to self shade of fixing agents
  - No risk of tannin migration (causing brown stripes and spots)
  - No reduction of chlorine fastness in washing (tannins are washed out)
### LANASET® PA

<table>
<thead>
<tr>
<th>Color</th>
<th>1/3 SD</th>
<th>1/1SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6% Red PA-3G</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>0.6% Red PA</td>
<td>6-7</td>
<td></td>
</tr>
<tr>
<td>0.9% Red PA-4B</td>
<td>4-5</td>
<td>5</td>
</tr>
<tr>
<td>1.1% Blue PA</td>
<td>6</td>
<td>6-7</td>
</tr>
<tr>
<td>2.5% Blue PA-2R</td>
<td>5-6</td>
<td>6</td>
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</table>

### Others

<table>
<thead>
<tr>
<th>Color</th>
<th>1/3 SD</th>
<th>1/1SD</th>
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<tbody>
<tr>
<td>0.60% Red S-GS</td>
<td>3</td>
<td>3-4</td>
</tr>
<tr>
<td>0.75% Red S-3B</td>
<td>3</td>
<td>3-4</td>
</tr>
<tr>
<td>1.23% Blue S-R</td>
<td>4</td>
<td>4-5</td>
</tr>
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</table>

Essential for outdoor garments
ISO 105-B02 96/216 h (rated by blue scale)
LANASET Yellow PA-4G new
Brilliant lemon yellow with excellent fastness properties. Shading elements LANASET Orange PA-2R or Red PA-4B. For bright green shades with LANASET Blue 5G and ERIONYL Turquoise A-G.

LANASET Yellow PA-2G
For intensive deep shades where yellow dominates, with highest wet fastness properties. Ideal shading element for black shades with LANASET Black PA-R.

LANASET Yellow PA
Trichromatic economic yellow for combinations with LANASET Red PA and LANASET Blue PA. High lightfastness, very good build up and excellent compatibility.
LANASET Orange PA-2R **new**
Highly lightfast bright Orange for self shades or in combination with LANASET Yellow PA-4G.
For intensive scarlet and red shades in combination with LANASET Red PA-4B.

LANASET Red PA-3G **new**
Bright red with very high lightfastness. Mainly used for self shades or shaded with LANASET Yellow PA and LANASET Blue PA.

LANASET Red PA
Trichromatic economic red for combinations with LANASET Yellow PA and LANASET Blue PA, excellent compatibility.
The basis for deep dull red shades with very high yield and color strength. Perfect lightfastness.

LANASET Red PA-4B **new**
Lightfast brilliant bluish Red for self shades and in combination with LANASET Yellow PA-4G and LANASET Orange PA-2R for bright Red and scarlet shades.
LANASET Blue PA
Trichromatic economic blue for combinations with LANASET Yellow PA and LANASET Red PA with excellent compatibility. Very good coverage of barriness, particularly in trichromatic combination shades. Also as basis for deep blue shades.

LANASET Blue PA-2R
Highfast dye for brilliant royal-blue shades
Perfect build-up to deepest shades, even on PA microfiber.
Can be shaded with LANASET Red PA-4B.

LANASET Navy PA
Basis for economic navy shades with very high light and excellent wetfastness properties.
Very useful for shading LANASET Black PA-R for bluish black shades with highest wetfastness properties.
LANASET Black PA-R **new**
Most economic basis for deep black shades with excellent lightfastness and good wetfastness properties. Recommended shading elements are LANASET Yellow PA-2G and LANASET Navy PA.
LANASET PA

typical combination shades

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Shade 1</th>
<th>Shade 2</th>
<th>Shade 3</th>
<th>Shade 4</th>
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<tbody>
<tr>
<td>1.2% Yellow PA-4G</td>
<td>1.0 % Yellow PA-4G</td>
<td>0.8 % Yellow PA-4G</td>
<td>2.5 % Orange PA-2R</td>
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<tr>
<td>0.1% Orange PA-2R</td>
<td>0.2% Red PA-4B</td>
<td>1.5 % Orange PA-2R</td>
<td>0.2 % Red PA-4B</td>
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<td>2.3% Orange PA-2R</td>
<td>0.1% Yellow PA</td>
<td>0.5 % Orange PA-2R</td>
<td>1.5 % Red PA-4B</td>
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<tr>
<td>0.5% Red PA-4B</td>
<td>0.9% Red PA</td>
<td>1.0 % Red PA-4B</td>
<td>0.2% Blue PA-2R</td>
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<tr>
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<td>0.2% Red PA-4B</td>
<td>1.5% Yellow PA-4G</td>
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<td>0.8% Blue PA-2R</td>
<td>0.9% Blue PA</td>
<td>3.0% Blue PA-2R</td>
<td>0.5% Blue 5G*</td>
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<td>0.7% Yellow PA</td>
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<td>1.0% Navy PA</td>
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<tr>
<td>0.3% Red PA</td>
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<td>0.2% Black PA-R</td>
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<td>0.4% Blue PA</td>
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<td>0.8% Blue PA</td>
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## Recommendations for combination shades*

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<tr>
<th>Shade area</th>
<th>Tri-chromy</th>
<th>bright Yellow</th>
<th>Yellow</th>
<th>Orange</th>
<th>Scarlet</th>
<th>Red</th>
<th>Bordeaux</th>
<th>Violet</th>
<th>Blue</th>
<th>Green/olive</th>
<th>Brown/beige/gray</th>
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<th>Black</th>
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</table>

- ✔ main dyes
- □ shading elements

*other combinations bear a risk of catalytic fading and should be tested for lightfastness*
LANASET PA

dyeing method on jet and beam machines

A:  
0.5 g/l ALBAFLOW UNI-01
1.0 g/l ALBAFLUID CD
0.5 – 2% UNIVADINE MC*
x g/l ALBATEX PS-35*
pH 4.5 – 7

B:  
x % LANASET PA dyes

*recommended quantities see next page
## Recommended auxiliaries

<table>
<thead>
<tr>
<th>% of dye</th>
<th>&lt; 0.1 %</th>
<th>0.1–0.5 %</th>
<th>0.5–1.5%</th>
<th>1.5–4%</th>
<th>&gt; 4.0%</th>
<th>black navy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBAFLOW® UNI-01</td>
<td>0.5 g/l</td>
<td>0.5 g/l</td>
<td>0.5 g/l</td>
<td>0.5 g/l</td>
<td>0.5 g/l</td>
<td></td>
</tr>
<tr>
<td>UNIVADINE® MC</td>
<td>2.0 %</td>
<td>1.5 %</td>
<td>1.0 %</td>
<td>0.5 %</td>
<td>——</td>
<td></td>
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<tr>
<td>ALBATEX® PS-35</td>
<td>0.1 g/l</td>
<td>0.25 g/l</td>
<td>0.5 g/l</td>
<td>1.0 g/l</td>
<td>1.5 g/l</td>
<td></td>
</tr>
</tbody>
</table>

These are general recommendations, based on experience. Depending from material and production conditions adjustments might be necessary.
UNIVADINE® MC leveling agent

- Tailor-made leveling agent for dyeing polyamide with LANASET and acid dyes.
- Outstanding covering of barriness and support of migration
- Improves surface levelness on all polyamide qualities
- Low retarding effect, therefore perfect reproducibility
- Prevents precipitation of metal-complex dyes

![Image of dyeing results with and without UNIVADINE MC](image-url)
UNIVADINE® MC leveling agent

Covering of barriness / leveling with LANASET® PA dyes

1% without leveler

2% UNIVADINE® MC
ALBATEX® PS-35
pH slider

- Gradually reduces pH as temperature rises.
- Uniform build up and leveling of dyes hence excellent surface levelness.
- Promotes full and controlled exhaustion which gives reproducibility from batch to batch.
- pH can be reduced from pH 7 to desired acid pH.
- ALBATEX PS-35 helps to solve in/out difference in beam dyeing.
- The danger of unlevelness of pale shades is minimized.
High strength and smooth pH change
**pH stability after product storage**

After 8 month storage a solution of 1 g/l product is measured!!

<table>
<thead>
<tr>
<th>Product</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALBATEX PS-35</td>
<td>6.83</td>
</tr>
<tr>
<td>Sandacid VS liq</td>
<td>4.23</td>
</tr>
<tr>
<td>Sandacid FEA2C</td>
<td>3.76</td>
</tr>
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<td>Sandacid VAN liq</td>
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<tr>
<td>Meropan EF</td>
<td>4.07</td>
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<tr>
<td>Setavin PAS</td>
<td>6.30</td>
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<tr>
<td>Peristal GAE</td>
<td>4.42</td>
</tr>
<tr>
<td>Verolan GBK</td>
<td>4.10</td>
</tr>
</tbody>
</table>
LANASET® PA
mill, brand & Consumer benefits

Benefits for the dyer

- Compact range including an excellent trichromy with perfect tone-on-tone build-up on polyamide.
- Very good wetfastness properties
- High lightfastness properties
- Simple dyeing procedures and high exhaustion
- As no hydrophobic fixation process required a distinct hydrophilic character is achieved without the need for further moisture management treatments

Benefits for the End-user

- Vibrant fashion shades that stay bright after repeated washes
- Garments retain their newness for longer
- High perceived quality
- Environmentally acceptable, less color goes into waste water during washing
- Colors do not blend or stain other garments during washing
- Handle and comfort
The sustainable choice

LANASET® PA

Cutting-edge economic tailor-made dyes for polyamide
Available promotional material

Range folder with Pattern Card Inserts
PROMT 413002e/c

Pocket Card + Pasting (knits/wovens)
PoC 412001e/c

Customer Presentation
PROMT419003e
LANASET® PA

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