Auxiliary to improve the wetfastness of PA and reserving agent for PA/CEL blends

Properties and fields of application
- Improves the wetfastness of PA dyed with all common dye classes
- Improves the wetfastness of cationic dyeable PA dyed with cationic dyes
- Aftertreatment to improve the wetfastness of prints on PA
- Reserving of PA fibers from direct dyes (e.g. Sirius dyes) in one-bath dyeing with CEL fibers
- Use in resist printing, especially on PA carpets
- Does not impair lightfastness
- Low-foaming
- Can be applied at pH 4,5

General properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical basis</td>
<td>Preparation of a methylene-linked condensation product of arylsulphonic acids and hydroxyaryl sulphone</td>
</tr>
<tr>
<td>Ionicity</td>
<td>Anionic</td>
</tr>
<tr>
<td>Form supplied</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS</td>
<td>Brownish powder</td>
</tr>
<tr>
<td>Mesityl® NBS liquid 01</td>
<td>Brownish liquid</td>
</tr>
<tr>
<td>Density (23°C)</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS liquid 01</td>
<td>1,05 - 1,15 g/cm³</td>
</tr>
<tr>
<td>Bulk density</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS</td>
<td>400 - 500 kg/m³</td>
</tr>
<tr>
<td>Dissolving</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS</td>
<td>Pour hot water onto the product and boil briefly with an immersion heater or stir into hot water.</td>
</tr>
<tr>
<td>Viscosity (23 °C)</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS liquid 01</td>
<td>approx. 50 mPa.s</td>
</tr>
<tr>
<td>pH of a 10% solution in water (23°C)</td>
<td></td>
</tr>
<tr>
<td>Mesityl® NBS</td>
<td>7,5 - 8,5</td>
</tr>
<tr>
<td>Mesityl® NBS liquid 01</td>
<td>7,0 - 9,0</td>
</tr>
<tr>
<td>Stability</td>
<td>Stable to dilute acids (pH 4 - 5) and alkalis. Not stable to concentrated acids and copper salts Nonionic auxiliaries can result in precipitation, especially in hard water</td>
</tr>
</tbody>
</table>
Technical notes on application

General
MESITOL® NBS and MESITOL® NBS liquid 01 improves the wetfastness of polyamide dyed with acid and 1:2 metal-complex dyes.

The wetfastness properties of polyamide dyed with acid and 1:2 metal-complex dyes can be improved by aftertreatment with MESITOL® NBS or MESITOL® NBS liquid 01.
In particular, this optimizes the fastness of dyeings to water, sea water, washing and perspiration. The improvement in fastness depends on the dye and fiber.

Amounts required

Amounts required to improve the wetfastness properties of dyeings:
0,5 - 1,0% MESITOL® NBS or
2,0 - 4,0% MESITOL® NBS liquid 01

Method
Dyeings with acid or 1:2 metalcomplex dyes should be rinsed in soft water and then treated with
MESITOL® NBS or MESITOL® NBS liquid 01
x ml acetic acid (pH 4,5)
70 - 80°C
20 - 30 min

Notes
1. The improvement in wetfastness properties obtained with MESITOL® NBS or
MESITOL® NBS liquid 01 is largely maintained even after fixation in hot air, providing the
amount of MESITOL® NBS/MESITOL® NBS liquid 01 is increased by about 1/3 and the fixation
temperature does not exceed 180-185°C. Higher fixation temperatures and treatment with
saturated steam influence the effect of MESITOL® NBS and MESITOL® NBS liquid 01.
2. When formulating the aftertreatment bath, make sure that dissolved or diluted
MESITOL® NBS/MESITOL® NBS liquid 01 does not come into contact with concentrated acetic
acid as this can cause precipitation. However, this can be reversed easily by adding ammonia.
3. Precipitation may occur if nonionic products are used in the aftertreatment bath; this impairs the
results obtained.
4. MESITOL® NBS and MESITOL® NBS liquid 01 can impair the handle in the event of subsequent
fixation.
5. Aftertreatment with MESITOL® NBS impairs the subsequent spinning properties of loose stock.
For this application, it is advisable to use dyes which give better wetfastness properties without
aftertreatment.
Improvement in fastness properties with MESITOL® AS

<table>
<thead>
<tr>
<th>Dyeing with 1,2 % Acid Blue 40</th>
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</thead>
<tbody>
<tr>
<td>No aftertreatment</td>
</tr>
<tr>
<td>Water 4 4 3,5 2,5</td>
</tr>
<tr>
<td>Washing 50 °C 4 4 3,5 2,5</td>
</tr>
<tr>
<td>Perspiration pH 5,5 3,5 2,5</td>
</tr>
<tr>
<td>Perspiration pH 8,0 3,5 2,5</td>
</tr>
<tr>
<td>Aftertreated with 5 % MEISITOL® NBS liq 01</td>
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<td>5 5 5 5</td>
</tr>
</tbody>
</table>

Stripping the MESITOL® NBS aftertreatment
If necessary, aftertreatment with MESITOL® NBS can be stripped from polyamide using the following recipe, e.g. before redyeing:
1,0 - 3,0 g/l ammonia
1,0 g/l LEVAPON® TH liquid
15 - 20 min at 70 - 80°C

Important note
Substrates which are to be laminated or coated with foam should not be aftertreated with condensation products of the MESITOL® type as this impairs adhesion.

Improvement in fastness properties with MESITOL® NBS
Improving the wetfastness properties of basic dyeable polyamide dyed with cationic dyes

Application
The wetfastness properties of anionic modified polyamide dyed with cationic dyes can be improved by aftertreatment with
0,5 - 1,0% MESITOL® NBS or
2,0 - 4,0% MESITOL® NBS liquid 01
x ml/l acetic acid (pH 5 - 6)
50 - 60°C
20 - 30 min
Reserving of polyamide fibers from direct dyes in one-bath dyeing of polyamide/cellulosic blends.

**General**
When dyeing polyamide/cellulosic blends in the one-bath or one-bath two-step process, MESITOL® NBS or MESITOL® NBS liquid 01 can be used as a reserving agent to prevent direct dyes staining the polyamide component.

**Amount required**
Dye with an addition of
0.5 - 0.75% MESITOL® NBS or
2.0 - 3.0% MESITOL® NBS liquid 01

**Method**
Because of the excellent reserving effect of MESITOL® NBS and MESITOL® NBS liquid 01 no special dye selection is necessary. However, its reserving action may be reduced if nonionic levelling agents are used.

**Reserving effect of MESITOL® NBS on cotton/polyamide.**
Dyeings with 0.6 % Sirus® Red F4BL

<table>
<thead>
<tr>
<th>MESITOL® NBS liq 01 (%)</th>
<th>without</th>
<th>0.5</th>
<th>1.0</th>
<th>1.5</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyamide</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Resist printing of PA carpets

On-step method Wet-in-wet
Print: white or colored resist
4 - 12 g/l MESITOL® NBS or
16 - 48 g/l MESITOL® NBS liquid 01
Intermediate steaming
Apply colorants by pouring
Steam, wash - off, dry

Two - stage process
Print: white or colored resist
4 - 12 g/l MESITOL® NBS or
16 - 48 g/l MESITOL® NBS liquid 01
Steam, wash - off, dry
Overdyeing:
Vat at 50 - 60°C, or
continuous or cold pad-batch process

Aftertreatment to improve the wetfastness of PA prints
Apply MESITOL® NBS or MESITOL® NBS liquid 01 after alkaline afterscouring of prints a cationic scouring agent like TANATERGE® SW-LF. Before aftertreatment, set a cold bath with:
0,2 g/l MESITOL® NBS or
0,8 g/l MESITOL® NBS liquid 01
1 ml/l acetic acid or formic acid
to remove any residue of the cationic scouring agent and any loose anionic dye from the substrate.
Then aftertreat with:
0,6% MESITOL® NBS or
2,4% MESITOL® NBS liquid 01
x ml/l acetic acid or formic acid (pH 5 - 6)
20 min at 50°C.

In continuous aftertreatment, e.g. padding (dry-on-wet or wet-on-wet) this should be regulated through liquor pick-up.
Storage stability

MESITOL® NBS: 60 months from delivery ex plant TANATEX Chemicals.
MESITOL® NBS liquid 01: 24 months from delivery ex plant TANATEX Chemicals.

Do not expose to temperatures below 0°C. If the product should become cloudy, thicken or freeze as a result of exposure to cold, it should be thawed slowly at room temperature and stirred briefly. It can then be used as normal.

Note on safety

Information on handling, storage and ecological and toxicological behaviour is contained in the safety data sheet for MESITOL® NBS and MESITOL® NBS liquid 01.

Specifications

For further details, please refer to the product specification for MESITOL® NBS and MESITOL® NBS liquid 01.

General note on product designations

Under statutory regulation on occupational safety, environmental protection and transportation, all changes to the composition of products must be indicated.
Changes are indicated by adding numbers to the product designation, e.g. 01, 02, etc. They do not alter the technical properties of the product.

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