FIBRE

CHEMICAL AUXILIARIES FOR THE MAN-MADE FIBRE INDUSTRY
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Remark: General restrictions or in dependence on the application certain restrictions may apply.
PICTOGRAM LEGEND

- **PA**: Polyamide
- **PAN**: Polyacrylonitrile
- **PE**: Polyethylene
- **PET**: Polyester
- **PP**: Polypropylene
- **PTT**: Polytrimethylene terephthalate
- **PVAL**: Polyvinyl alcohol
- **CA**: Celullose-Acetate
- **CV**: Viscose

- **E**: Spin finish applied as Emulsion
- **N**: Spin finish applied as Neat Oil
- **F**: Spin finish applied as Neat Oil with Flash component
- **Bico**: Bicomponent Fibre (PE/PP or PE/PET or PP/PET)
- **LH**: Long-Heater for DTY production
- **SH**: Short-Heater for DTY production
- **FDA**: All components mentioned in FDA CFR 21 §§ 175-178
- **EU**: All components mentioned in EU 10/2011
- **Spunlace solidification**: Suitable for Kiss-Roll application
- **Air-through bonding**: Suitable for Spray application
- **Needle-punch**: Suitable for Needle-punch
INNOVATIVE CHEMICAL PROCESSING AUXILIARIES FOR PERFECT PRODUCTION AND DOWNSTREAM PROCESSING OF SYNTHETIC YARNS, FIBRES AND NONWOVENS
SYNTHETIC FIBRES – LASTING VALUE AND A VARIETY OF APPLICATIONS

NO TEXTILE RAW MATERIAL IS PROCESSED MORE OFTEN THAN MAN-MADE FIBRES. THE REASONS LIE IN THEIR CHARACTERISTICS, THEIR VERSATILITY AND DURABILITY. INDIVIDUALLY AND PURPOSE-ORIENTED DESIGNED MAN-MADE FIBRES ARE USED IN A VARIETY OF INDUSTRIES AND APPLICATIONS.

Schill+Seilacher develops and manufactures spin finishes for polyamide, polyester, polypropylene, polyethylene, viscose, acetate and elastomer fibres and yarns. Many years of experience on spin finishes and innovative technology ensure the production and downstream processing at maximum speed and highest quality standards with Schill+Seilacher spin finishes. A variety of other products for the production and processing of high-quality fibres completes our range.

As an approved technology partner we support our customers around the world to meet their specific requirements. We are a valued partner of the automotive and construction industry, as well as for the medical industry.
Following the Second World War, Schill+Seilacher moved its Heilbronn operation to Böblingen, a suburb of Stuttgart. Although both locations Hamburg and Böblingen are sharing the same name, they are serving different industries and working independently of each other. Schill+Seilacher ventured into the North American market in 1979 with the establishment of Struktol® Company of America. SCA is located at the heart of the American tire industry, just outside Akron, Ohio, and majorly supplies the plastic, rubber and tire industries. Schill+Seilacher Chemie GmbH, situated on the banks of the Elbe just south of Dresden was acquired in the early 1990s and serves as both a production and research facility for silicone based chemistry.

SNS Nanotech in Hudson, Ohio, specializes in developing complex nanofiber matrices and is the youngest member of the Schill+Seilacher Group. Their proprietary technology enables the fabrication of self-supporting mats that can entrap particles within a nanofiber matrix or encapsulate them within individual nanofibers.
... TO A GLOBAL PLAYER IN THE PRODUCTION OF INDUSTRIAL PROCESS ADDITIVES.

IN HAMBURG TO CATER TO THE EXPANDING NEEDS OF ITS GROWING CUSTOMER BASE AND SECURE BETTER ACCESS TO INTERNATIONAL MARKETS THROUGH THE CITY’S BUSTLING PORT.

**DIN EN ISO 9001: Our quality guarantee**

The high quality standard of our products is guaranteed by our certified quality management system (ISO 9001), which integrates our highly qualified application experts, state of the art laboratories and testing equipment, and modern production methods into an effective and continually improving team.

**DIN EN ISO 14001, DIN EN ISO 50001:**

Our commitment to the environment

Our commitment to reducing waste and managing energy consumption efficiently has been at the core of our business for many years. By helping us work more efficiently and cost effective, our ISO 14001 and ISO 50001 certification promise better products through environmental responsibility.

Specific information of site certifications can be found on page 26.
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<th>LIMANOL</th>
<th>Features</th>
<th>Applications</th>
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<tr>
<td><strong>LIMANOL LY 2 M</strong>&lt;br&gt;PET</td>
<td>very uniform distribution on the yarn&lt;br&gt;low smoke formation&lt;br&gt;excellent for the split-yarn process</td>
<td>Spin finish for PET-FDY yarn used in warp knitting and weaving</td>
</tr>
<tr>
<td><strong>LIMANOL B 50 H</strong>&lt;br&gt;PET</td>
<td>very uniform distribution on the yarn&lt;br&gt;excellent for high speed warp knitting</td>
<td>Spin Finish for PET-FDY yarn, applied before or after the hot godets</td>
</tr>
<tr>
<td><strong>LIMANOL B 50 SW</strong>&lt;br&gt;PET</td>
<td>excellent for FD and SB PET-FDY&lt;br&gt;excellent distribution on the yarn</td>
<td>Spin Finish for PET-FDY yarn</td>
</tr>
<tr>
<td><strong>LIMANOL HC 301</strong>&lt;br&gt;PET</td>
<td>can be used for emulsion up to 35%&lt;br&gt;very good antistatic properties&lt;br&gt;low smoke formation</td>
<td>Spin Finish for PET-FDY yarn applied from high concentration emulsions</td>
</tr>
<tr>
<td><strong>LIMANOL GA 661 M 3</strong>&lt;br&gt;PET</td>
<td>enhances the dying performance of the yarn&lt;br&gt;very low gel formation&lt;br&gt;very fast wetting</td>
<td>Spin Finish for PET-FDY yarn, applied after the hot godets before the winder</td>
</tr>
</tbody>
</table>
### LIMANOL

<table>
<thead>
<tr>
<th>Product</th>
<th>Properties</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMANOL JPH 91</td>
<td>can be used at high concentrations</td>
<td>Spin Finish for PET-FDY yarn, applied before or after the hot godets</td>
</tr>
<tr>
<td>PET</td>
<td>excellent for low shrinkage FDY-yarn</td>
<td></td>
</tr>
<tr>
<td>LIMANOL ZC 50</td>
<td>low smoke formation</td>
<td>Spin Finish for the production of PA6-FDY yarn</td>
</tr>
<tr>
<td>PA</td>
<td>low migration behaviour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>very good surface wetting</td>
<td></td>
</tr>
<tr>
<td>LIMANOL ST 8</td>
<td>low smoke formation</td>
<td>Spin Finish for the production of speciality fibres, like PTT</td>
</tr>
<tr>
<td>PTT</td>
<td>low migration behaviour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>very good surface wetting</td>
<td></td>
</tr>
<tr>
<td>LIMANOL ATY 3</td>
<td>stable against hard water</td>
<td>Spin Finish for FDY yarn which is processed in a subsequent air texturizing process</td>
</tr>
<tr>
<td>PET</td>
<td>no gel formation</td>
<td></td>
</tr>
</tbody>
</table>
LIMANOL

LIMANOL T 36
PET
- low smoke formation
- prolonged cleaning cycles
- no gel formation at the tangling unit

Spin Finish for the production of PET-HMLS yarn for tyre-cord application

LIMANOL F 100
PET F
- excellent heat resistance
- prolonged cleaning cycles
- excellent PVC compatibility

Spin Finish for the production of PET-LS and -SLS yarn

LIMANOL T 12 E-NX
PA
- very low rate of broken filaments
- excellent compatibility with the airbag coating

Spin Finish for the production of PA 6,6 Airbag yarn

LIMANOL 35 F/1
PA N
- neat oil without any flash component
- very high yarn efficiency

Spin Finish for the production of PA6-HMLS yarn for tyre-cord application

LIMANOL PA 201
PA F
- very high yarn efficiency
- prolonged cleaning cycles

Spin Finish for the production of PA6-HMLS yarn for tyre-cord application

LIMANOL C 167 AS
PP N
- very good yarn processibility
- for white and solution dyed yarn

Spin Finish for PP high tenacity yarn

LIMANOL C 167 GF
PE N E
- very good yarn processibility
- no yellowing of the yarn

Spin Finish for UHMW-PE high tenacity yarn
<table>
<thead>
<tr>
<th>LIMANOL BF 607</th>
<th>PET</th>
<th>PA</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>suitable for PA and PET</td>
<td>excellent heat resistance and no migration during the heat setting</td>
<td>excellent yarn efficiency</td>
<td>...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMANOL BF 55</th>
<th>PET</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>very good heat resistance and no migration during heat setting</td>
<td>very good yarn protection</td>
<td>very high yarn efficiency</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMANOL BF 44</th>
<th>PP</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>very good yarn protection</td>
<td>very high yarn efficiency</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMANOL BF 29 EU</th>
<th>PP</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>suitable for BCF- as well as for CF-yarn</td>
<td>all components listed according to EU 10/2011 and FDA 21 CFR</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMANOL BF 44 S</th>
<th>PP</th>
<th>N</th>
</tr>
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<tbody>
<tr>
<td>gives a very soft handle</td>
<td></td>
<td></td>
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Spin Finish for the production of high quality PET- and PA-BCF

Spin Finish for the production of PET-BCF yarn

Spin Finish for the production of PP-BCF yarn

Spin Finish for the production of PP-BCF and -CF yarn

Spin Finish for the production of soft touch PP-BCF yarn
**POLYESTER**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Spin finish</th>
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| DRYFI L 165 M | long cleaning cycle in DTY process  
easy-to-clean-effect  
low filament breaks | Spin finish for Polyester-POY for textured yarn for microfilaments |
| DRYFI P 3: | low filament breaks  
high texturing speeds  
versatile - suitable also for specialties | Spin finish for Polyester-POY for textured yarn for semi dull and special yarn (bright, full dull) |
| DRYFI L 113 M | high production speed  
long cleaning cycles in DTY process  
suitable for microfilaments | Spin finish for Polyester-POY for textured yarn for short heater |
| DRYFI EL 1: | clean air due to low aerosol formation  
easy-to-clean-effect  
economic product | Spin finish für Polyester-POY for textured yarn for conventional heater and standard semi-dull filament |
CHEMICAL AUXILIARIES FOR THE MAN-MADE FIBRE INDUSTRY

POLYAMIDE

SYNTEX 242
- versatile - suitable for a wide range of dpf
- clean air - thermally stable
- low migration in POY during storage

DRYFI PA 22
- especially for low dpf yarn
- protection from Yellowing
- very low filament breaks

DRYFI PA 33
- high texturing speed
- protection from Yellowing
- very low filament breaks

DRYFI PA-F 66
- low migration in POY during storage
- clean air due to low aerosol formation
- versatile - suitable for all DTY processes

Spin finish for Polyamide (PA 6)-POY for textured yarn
Spin finish for Polyamide (PA 6)-POY and FDY for textured yarn with low dpf for knitting/warp-knitting
Spin finish for Polyamide (PA 6)-POY and FDY for textured yarn with medium dpf for knitting/warp-knitting
Spin finish for Polyamide (PA6, PA66)-POY for textured yarn

POLYPROPYLENE

DRYFI PP 29
- versatile - suitable for all DTY processes
- low filament breaks
- suitable for PP with colour masterbatch

Spin finish for Polypropylene-POY for textured yarn
MONOFILAMENT

LIMANOL B 53 M
- PET
- all components are listed in CFR Title 21 FDA (indirect food contact)

SILASTOL PMM-2
- PA
- all components are listed in CFR Title 21 FDA (indirect food contact)
- excellent for PA 6.12 monofilaments
- very low friction on the yarn

SILASTOL TC 2
- PVAL N
- prevents sticking of the filaments
- very low friction on the yarn
- very uniform distribution on the yarn

Spin finish for the production of PET monofilament yarn
Spin finish for the production of PA monofilament yarn
Spin finish for the production of polyvinyl alcohol filament yarn
SILASTOL

SILASTOL A SERIES
- PET
- effective can loading
- excellent processing in fibre line

SILASTOL H SERIES
- PET
- universal use for fibres with Ring, OE- and Airjet downstream
- adjusted for different climate conditions

SILASTOL TD SERIES
- PET
- universal use for fibres with Ring, OE- and Airjet downstream
- efficient control of F/M friction and F/F cohesion

SILASTOL 80 G SERIES
- PET, PP
- excellent processing in fibre line and downstream
- low odour

SILASTOL EM 20
- PET, PA
- excellent spreading on the fibre surface
- low F/M friction together with high F/F cohesion

Separate Spindraw finishes

Antistatic agents for PET cotton type fibres

Lubricants for PET cotton type fibres

Spinfinishes for needle felt fibres

Spin finish for PET wool type fibre and converter tows
SILASTOL

SILASTOL CUT 8
- allows reduced amount of viscose fibres for wipes
- suitable for absorption of high amounts of liquid
- excellent wicking for acquisition-distribution layer

Durable hydrophilic finish for short cut Polyester fibres for spunlacing, thermal and chemical bonding. To be used in combination with SILASTOL CUT 12

SILASTOL CUT 12
- improves antistatic behaviour
- enables efficient cutting of fibres
- uniform web formation

Hydrophilic finish for short cut Polyolefine and Polyester fibres for airlaid and spunlacing. For spunlacing to be used in combination with SILASTOL CUT 8

SILASTOL CUT 60
- high processing speed due to low foaming
- uniform dispersing of fibres
- enables efficient cutting of fibres

Durable hydrophilic finish for short cut Polyolefine and viscose fibres for wetlaid and spunlaced nonwoven as well as for paper reinforcement

SILASTOL CUT 80
- long life effect for cutting device
- quick homogenization of fibres in liquids
- quick carding due to good cohesion of fibres

Hydrophilic finish for short cut Polyolefine fibres for technical and hygiene applications

CHEMICAL AUXILIARIES FOR THE MAN-MADE FIBRE INDUSTRY
**SILASTOL CUT 90 T**
- very fine and quick dispersion of fibres
- easy opening of fibres due to low F/F friction
- excellent for various fibre blends

**SILASTOL DL 2 M**
- low rewet due to low moisture retention
- excellent wicking for acquisition-distribution layer
- suitable for absorption of high amounts of liquid

**SILASTOL**

**Durable hydrophilic finish for short cut Polyolefine, Polyester and viscose fibres for wetlaid nonwoven, paper reinforcement and concrete fibres**

**Durable hydrophilic finish for Polyester fibres for chemically bonded nonwovens**
SILASTOL

**SILASTOL GF 18**
- FDA
- PE
- PP
- Bico
- Good web strength due to excellent cohesion
- Quick acquisition of hydrophilic liquids
- Versatile - also suitable for needlepunched nonwoven

**SILASTOL GF 602 D**
- PE
- PP
- Bico
- Designed for high carding speed
- Good skin compatibility for hygiene applications
- Good compatibility with glue

**SILASTOL LMF 8**
- FDA
- Bico
- PET
- PP
- No coagulation during processing of low melt fibers
- Excellent fibre orientation in airlaid process
- Quick absorption of liquid

Hydrophilic spin finish for Polyolefine fibres for technical and hygiene applications

Hydrophilic spin finish for Polyolefine fibres for technical and hygiene applications, mainly for thermal bonding

Hydrophilic finish for Polyolefine and Polyester fibres for airlaid nonwoven and as antistat for all nonwoven applications
<table>
<thead>
<tr>
<th>Product</th>
<th>Key Features</th>
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| **SILASTOL PHP 10** | - quick and multiple acquisition of urine  
                       - excellent wicking for acquisition-distribution layer  
                       - less cleaning of air through oven required |
| **SILASTOL PHP 90** | - quick and multiple acquisition of blood and urine  
                       - fluffy soft touch for topsheets  
                       - suitable also for acquisition-distribution layer |
| **SILASTOL SL 15 + SL 85** | - good web strength due to good fibre cohesion  
                       - recommended for spunlaced nonwovens for PET/viscose based wipes  
                       - allows efficient recycling of water during spunlacing |

**Durable hydrophilic finish for Polyolefine fibres, including Bico fibres for thermal bonding including air-through bonding**

**Hydrophillic finish for Polyester and viscose fibres for spunlaced nonwoven**
SILASTOL

SILASTOL GF 16
- very quick absorption of aqueous liquids
- uniform hydrophilicity on meltblown and thick SMS
- suitable for high production speed

SILASTOL PHP 8
- quick and durable acquisition of urine
- no leakage due to very low migration
- suitable for zone coating

SILASTOL PHP 26
- very quick and durable acquisition of urine
- fluffy soft touch
- low wash-off

Hydrophilic finish for Polyolefine spunlaid nonwoven

Durable hydrophilic finish for topsheet in diapers

Durable hydrophilic finish for core wrap in diapers and for topsheets in pads
SILASTOL PHP 207
- quick and durable acquisition of blood and urine
- silky soft touch
- reduced leakage

SILASTOL PST-N
- suitable for high speed process
- quick absorption of blood and urine
- medium soft touch

SILASTOL 163
- suitable for high speed process
- low wetback
- versatile - good compatibility with botanical extracts

Durable hydrophilic finish for topsheet in diapers and fem care products

Hydrophilic finish for Polyolefine topsheets, also for Bico nonwoven

Durable hydrophilic finish for topsheet for diapers
<table>
<thead>
<tr>
<th>SPECIALITY PRODUCTS</th>
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</table>
| **UKANOL ES** PET | very high viscosity index PET can be produced  
|                     | stable against thermal or moisture degradation during the processing  
|                     | Halogen-free |
| **RELEASE AGENT 96** | enables long cleaning cycles  
|                     | highly efficient |
| **POLYFIX 6000** | very effective cleaning of surfaces  
|                     | forms a highly stable foam |
| **DESPUMOL PM** | highly effective  
|                     | silicone based |
| **DESPUMOL FDA** | compliant with FDA § 21 CFR  
|                     | contains a small amount of silicones |
| **DESPUMOL EC** | compliant with FDA § 21 CFR  
|                     | compliant with EU 10/2011  
|                     | silicone free |
| **AFROTIN TBN** | |

- **Monomer for the production of flame retardant PET**
- **Spinneret spray for the protection of spinneret surfaces**
- **Rapid cleaning agent for heated surfaces in the production of synthetic fibres**
- **Defoamer for spin finish emulsions**
- **Defoamer for spin finish emulsions**
- **Defoamer for spin finish emulsions**
- **Bactericide for spin finishes and spin finish emulsions**
SCHILL + SEILACHER AT A GLANCE

→ BOEBLINGEN
SPECIALITY CHEMICALS FOR:
- FIBRES
- TEXTILES
- LEATHER
- PAPER
- COSMETICS
- FINE CHEMICALS

DIN EN ISO 9001:2015
DIN EN ISO 14001:2015
DIN EN ISO 50001:2011
RSPO CERTIFICATION MASS BALANCE

→ HAMBURG
SPECIALITY CHEMICALS FOR:
- RUBBER ADDITIVES
- ANTIFOAMS
- EPOXY PREPOLYMERS
- AND FLAME RETARDANTS
- LATEX ADDITIVES
- SILICONES
- RELEASE AGENTS

DIN EN ISO 9001:2015
DIN EN ISO 14001:2015
DIN EN ISO 50001:2011

→ PIRNA
SPECIALITY CHEMICALS FOR:
- SILICONES
- PU INDUSTRY
- PAPER
- TEXTILES
- COSMETICS
- FIBRES
- LEATHER

DIN EN ISO 9001:2015
(ONLY FOR BOEBLINGEN PRODUCTS)

→ HUDSON / OHIO / USA
PRODUCER OF:
- NANOFIBRE MATRICES

DIN EN ISO 9001:2015
DIN EN ISO 13485:2003

→ STOW / OHIO / USA
VILLA RICA / GEORGIA / USA
SPECIALITY CHEMICALS FOR:
- PLASTICS
- WOOD COMPOSITES
- RUBBER
- LEATHER

DIN EN ISO 9001:2008
We at Schill+Seilacher “Struktol” GmbH have met all our REACH registration obligations for 2010 and 2013. We are still active in our consortia and have finished the registration process for the 2018 deadline. We also work closely with our suppliers to make sure that all our new raw materials are also REACH compliant.

For further information, please contact our Regulatory Affairs Department at REACH@struktol.de

Disclaimer:
Above mentioned technical specifications rely on an analysis as of: 06.2018.

The mentioned attributes and application proposals are only non-binding application possibilities and application proposals for our products. Our advice and recommendations whether verbal, in writing or by way of tests do not excuse the customer from his or her own examination regarding the applicability for the intended procedures and purposes. The mentioned attributes and application proposals are no assurance for a certain further processing. Any assurances must be agreed upon explicitly and in writing between the customer and us.

We also advise you, that any further processing and the distribution of the further processed products is part of the customers sole scope of responsibilities as the producer of the new product.
Any Questions?
Our service team will be pleased to answer any questions and assist you with advice and information. We can also provide you with contact data of our local offices, distributors and agencies. Data sheets and samples of our products are available upon request.

For more information please contact:

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