

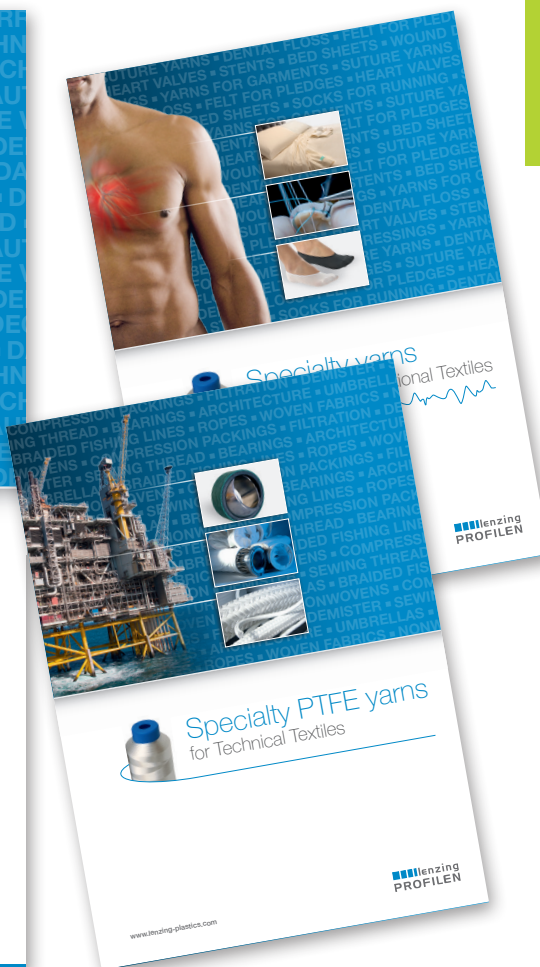


## Technische Laminate Thermoplaste in Bestform



www.lenzing-plastics.com

Lenzing  
Plastics



### Sewing threads

The weakest part of umbrellas, caravans and awnings is always the fabric. UV light attacks the conventional sewing thread and reduces its tenacity over time remarkably. With a rather low investment compared to the total value of a fabric, the correct thread and installation, you can reduce the risk of a leaking awning.

Thread close to zero. With our 100% inherently UV resistant Lenzing PROFILEN® threads you are always on the safe side. A range of different threads for different sewing applications is available. Please see for more details!



## Yarns for textile architecture fabrics

Textiles for architectural applications have the tremendous limitation, that the exposure to UV light limits their lifetime. With our Lenzing PROFILEN® and Lenzing LENZOL® yarns we provide unique solutions, especially for retractable uses.

### Fabric

Lenzing Plastics is a yarn manufacturer – however we work constantly to establish a production chain till the end-user by bringing together external partners along the value chain. So we can offer contacts to possible fabric manufacturers working with our yarns.



### Yarns

Also in this application we offer a broad range of yarn types: High strength Lenzing PROFILEN® yarns with low density for very big constructions in different sizes. Lenzing LENZOL® multifilaments for smaller installations, available in bright colors and different sizes.



#### Lenzing PROFILEN® benefits

- Permanent 100% UV and weather resistance without additives
- High light transmission (up to 80%)
- Dirt and water repellent (Teflon-effect)
- Extreme resistance flexibility, even at low temperatures
- Cooling effect

#### Environmental aspects

- Resistance to UV without additional additives
- Long service life will preserve resources
- Cooling effect saves energy
- Free of heavy metals and other hazardous additives
- Fast and physiologically safe (FDA listed – used in medical applications)
- Dye – free (especially compared to glass fiber)

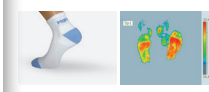
#### Safety aspects

- Non flammable (LOI 95%)
- BT classification
- Does not drip
- Does not spliter
- Resistance to chemicals and pollution

## Yarns and textiles for the outer body

Friction and heat are a main issue for runners, hikers, football players, etc. Lenzing PROFILEN® offers the lowest friction coefficient, Lenzing PROFILEN® offers the lowest friction coefficient, Lenzing PROFILEN® offers the lowest friction coefficient. Due to its smooth surface.

### Applications –



### clothing



### Lenzing PROFILEN® in medical textile applications

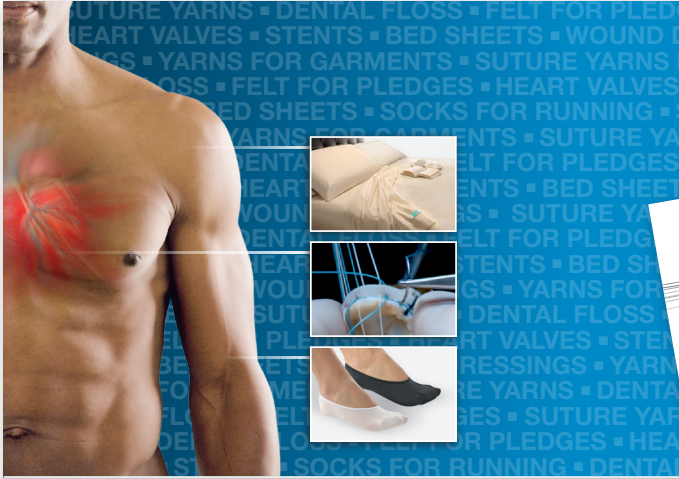
Lenzing PROFILEN® non-colored yarn consists of 100% PTFE and is a high-density and smooth yarn leading to a soft and cool touch of the final garment. It provides immediate relief to the skin and an increased sense of wellbeing for people suffering from skin diseases. Based on its multiple unique and revolutionary characteristics, Lenzing PROFILEN® is ideally suited for skin therapies.

#### Advantages of Lenzing PROFILEN® in medical textile applications

- Lenzing PROFILEN® is highly biocompatible
- Has lowest level of friction (dry and wet) and helps to ease skin irritation
- Stay soft and provides an increased sense of wellbeing
- Free against any other material to avoid irritating reactions
- Free against bacteria as it does not promote inflammation
- Is biodegradable and does not absorb odors or chemicals
- Has a very silky surface, reduces the itching of skin and provides pleasant sensation of clothes
- Maintains full characteristics - even after frequent washing



Microscopic picture of bare foot



Specialty yarns  
for Medical & Functional Textiles



Fluoropolymer division  
Lenzing Profilen® PTFE

Product portfolio – Medical and Functional textiles

Besides many technical applications and the cable industry we continue to grow in the field of medical and functional textiles with our Lenzing Profilen® PTFE yarns. The variety of applications within this business unit is still very broad, starting from yarns for surgical sutures and heart valve construction to yarns for skin protection textiles in sport, medical and protective areas. We distinguish in the brochure between usage inside and outside the body. A general overview of markets, applications and products is shown below.

Lenzing Profilen®	HY-WEAVE Multifilament	MEMO- FLANNELE	STABLE FIBRE	HEAVY TOUCH DRESS	STRENGTH TENCEL
SPORT	✓	✓	✓	✓	✓
Medical textiles	✓	✓	✓	✓	✓
Medical devices	✓	✓	✓	✓	✓
Protective textiles	✓	✓	✓	✓	✓



Surgical Textiles

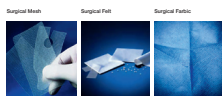
The anti-adhesive property of a Lenzing Profilen® product prevents sticking of medical textiles with wounds and can be used in the inner body as well as for the use on the skin surface. Fluids can be drawn away from the body to absorbent layers through the hydrophobic properties of the fiber. The smooth surface of Lenzing Profilen® products does not support the growth of bacteria. For these reasons Lenzing Profilen® fibers are preferred for manufacturing of surgical fabric structures, surgical meshes as well as for surgical bed linens.

Unique benefits of Lenzing Profilen® used in surgical textiles

- Extremely low friction coefficient
- Excellent biocompatibility
- Retain a high tensile strength for product lifetime
- Completely non-absorbable - 100% pure PTFE
- Chemical inert which supports the sterilization process
- Surface structure prevents merging of skin and tissues
- Hydrophobic and oleophobic characteristics

Possible applications for Lenzing Profilen® used in surgical textiles

- Surgical fabric constructions: plastic sheets, heart valves, etc
- Surgical meshes constructions (inguinal hernia surgery, Laparoscopic repair of incisional hernia, etc)
- Surgical kits (Suture Packages, Anatomistom Buttress, Septal Plug, etc)
- Your ideas!



Lenzing Profilen® in medical textile applications

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Advantages of Lenzing Profilen® in medical textile applications

- Lenzing Profilen® is highly biocompatible
- Has lowest level of friction (dry and wet) and helps to ease skin irritation
- Stay soft and provide an increased sense of wellbeing
- Most against any other materials to avoid surprising reactions
- Heat resistant and does not promote infections
- Is oil-repellent and does not absorb creams or ointments
- Has a very silky surface, reduces the itching of skin and provide pleasant sensation of coolness.
- Maintains full characteristics - even after frequent washing



# Filtration applications



High Performance  
Fibers & Yarns



www.lenzing.com/plastics

## LENZING PLASTICS HIGH PERFORMANCE FIBERS



### A powerful alliance

Lenzing Plastics is one of the world's leading producers of polyolefin and fluoropolymer products. Our main competences lie in the most advanced technology which allows the production of films and tapes with extremely high tensile strength. A further, still young field of activity is the company's production of precursor, the primary product for the manufacturing of carbon fibers.



### Quality Made in Austria / Germany

Germany's and Austria's industry is worldwide known for their high quality products. We are working hard to push this image even further! We obtained certification in accordance with ISO 9001 in 1994 and have constantly upheld these standards as a result of monitoring and research audits.



### Ecology and Economy in Harmony

The balance between the environment and society must not be upset through entrepreneurial actions - neither today, nor tomorrow. Adding long-term and competitive value in production, distributing resources fairly and providing social justice, as well as safe and sound working conditions, these are the issues that require foremost attention.

For the Lenzing Group the principle of sustainability means to secure high-quality production in an ecologically sound environment. Only economically successful companies are in a position to make investments and to ensure their performance potential, on a long-term basis, through ongoing economic, social and ecological further development. Lenzing PROFILEN® and Dolant® products used for the production of filter media have, over the past years, been contributing towards environmental protection. The filter media have excellent physical and chemical properties, especially for applications in which other materials reach their limits.

High operational safety, long service life and excellent filtration values during the total operating life cycle, also from an economic point of view, filter media especially made from Lenzing PROFILEN® but also Dolant®.

### Competence and Performance



The Döran GmbH, producer of Dolant® is a 100% subsidiary of Lenzing Plastics GmbH and is based in Kollern, Germany. Besides the head office and main production site of Lenzing Plastics in Lenzing, Austria, there are further sites in Germany, Czech Republic and the United States. Lenzing Plastics itself is a 100% subsidiary of Lenzing AG, the world's leading cellulose fiber manufacturer.

Working performances within our markets. The benefit for our customers is the concentrated know-how, coupled with the years gathered knowledge of filtration applications and

## LENZING PROFILEN® YARNS AND FIBERS



### The specialists for exceptional conditions

Under the trademark Lenzing PROFILEN® we produce olefin fiber, weaving yarn and tapping thread out of 100% PTFE, Polyethyleneoxymethylene.

Due to their outstanding properties, filter media made out of Lenzing PROFILEN® is particularly suitable in filtration applications where critical and aggressive conditions prevail, such as waste incineration, hazardous & toxic waste incineration as well as biomass and pulp/paper plants.



### Lenzing PROFILEN® staple fiber

- Pure, white PTFE
- Temperature resistant from -212 °C to 288 °C (350 °F to 550 °F)
- Chemically inert to acids, caustics, solvents and hydrocarbons (pH 1-14)
- Regular cross section for highest filtration efficiency
- Patented special crimp technology
- Low elongation
- Non-adhesive / low coefficient of friction
- Non-inflammable (UL 94 V0)
- Hydrophobic (no moisture regain, no hydrolysis)
- Fibers from 10 to 30 µm

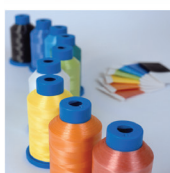
Advantages in filtration applications  
High filtration efficiency • also after long term usage • Easy cleaning • Low filter bag expansion • Excellent abrasion and low resistance  
Higher operational safety and reliability • More economical due to longer operating life • Excellent processability compared to other PTFE fibers due to durable crimp



### Lenzing PROFILEN® weaving yarn

- Key features
- Pure, white PTFE
- Temperature resistant from -212 °C to 288 °C (350 °F to 550 °F)
- Chemically inert
- Highest tenacity in the PTFE market - initially and after felting
- Low shrinkage (below 2% at 200 °C) & low elongation also under high temperatures
- Unaffected by mold environments

Lenzing PROFILEN® - highest tenacity for a lighter & stronger scrim  
Our MFG weaving yarn set the standard in the industry in the past and we are continuing to do so with further development work. With the excellent tenacity of our MFG yarns we can provide the best performance to cost ratio within the PTFE market today. Therefore light weight supporting scrims made of Lenzing PROFILEN® MFG weaving yarns offer not only the advantage of classic PTFE properties but also the highest level of dimensional stability of available high quality PTFE yarns!



### Lenzing PROFILEN® sewing thread

- Key features
- Pure, white PTFE
- Temperature resistant from -212 °C to 288 °C (350 °F to 550 °F)
- Chemically inert
- Best and constant sewability proven for more than 20 years
- Great tenacity in aggressive filtration applications
- Unaffected by mold environments
- Best cost - performance ratio - not reached by low-cost PTFE yarns

Lenzing PROFILEN® - a thread that last longer than life  
In order to provide durable seams for the exceptional conditions of filter media, we supply several Lenzing PROFILEN® sewing threads. The security using a proven and reliable material as well as best sewability is a benefit for every manufacturer. If required we can supply our yarns in different colors, following our requirements! The exceptional performance of Lenzing PROFILEN® sewing thread is not only an advantage for PTFE filter media but also for other high temperature filter materials in order to reduce inventory with having just one multi-use thread.

# Lenzing Plastics Report

Ausgabe 03/2008



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- Am Himalaya** | Seite 10-13  
Hubert Gardler läuft als 18. Himalaya-Mann mit einer Stunde Vorsprung ins Ziel



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**EDITORIAL**



**Bioabbaubare Kunststoffe Werkstoffe der Zukunft?**  
Sehr geehrte Kunden, Mitarbeiter und Geschäftspartner

Aufgrund ihrer positiven Eigenschaften stellen Biokunststoffe zumindest in einigen Bereichen eine echte Alternative zu herkömmlichen, fossilen Kunststoffen dar.

Meistgrößen und -entwicklungen für den Kunststoffmarkt sind jedoch auch für den Markt der Biokunststoffe relevant, als dass sich anhand ihrer Aussagen darüber treffen lassen, inwieweit sich Kunststoffe durch Biokunststoffe substituieren werden.

**INNOVATIV**

Von 14 Mio. Tonnen Verpackungen, die jährlich allein in Deutschland hergestellt werden, besitzen fast 40 Prozent aus Kunststoff.

Rund 1,8 Mio. Tonnen hiervon entfallen auf kurzzeitige oder nur einmal zu gebrauchende Kunststoffverpackungen, wie Folien, Beutel, Tragetaschen, Säcke oder Einwegbesteck und -geschirr. Diese Produkte können problemlos auch aus Biokunststoffen und Polymeren gefertigt werden, sind allerdings auf Grund der (noch) verhältnismäßig hohen Rohstoffpreise nicht wettbewerbsfähig.

Voraussetzt ist die Verwendung von Biokunststoffen auch im Bereich des Gartenbaus, z. B. für Mulchfolien. Die COIRA (Committee of Agricultural Organisation in the European Union) und die COGESA (General Committee for the Agricultural Cooperation in the European Union) haben sich mit dem Einsatz von Biokunststoffen in der Landwirtschaft auseinandergesetzt. Die Potentiale von Biokunststoffen für Europa sind demnach wie folgt:

450.000 t/a Bioballdas	100.000 t/a bioballdas	130.000 t/a bioballdas	80.000 t/a Bioballdas	240.000 t/a Bioballdas	400.000 t/a Bioballdas	2.000.000 t/a Bioballdas
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Somit wünschen sich allein Geschäftspartnern und Investoren der Lenzing Plastics ein Gesamtmarkt von ca. 200.000 t/a Kunststoffen bis hin zu 2.000.000 t/a Kunststoffen.

Einzelne Hersteller sind in diesem Feld zwei unterschiedliche Zugänge. Einerseits bedienen sich die für uns seit langer Zeit wichtigsten Markt der Multilayer-Verschleißschichten

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**Neuer Werkstoff in die Zukunft mit Biokunststoffen**

Europa sogar 145 kg. Nicht zuletzt der Umweltschaden, sondern auch das Know-how der Hersteller machen ein Umdenken notwendig. Dabei wurden Mitte der achtziger Jahre die ersten biologischen Kunststoffe entwickelt.

Während man am Anfang dieser Entwicklung, bei der Verwendung der ersten biologischen Kunststoffe, noch oft das Gefühl hatte, man betrie eine Backstube und nicht eine Produktionshalle, sind diese Werkstoffe heute bereit für den Markt.

Trotz all der Euphorie ist es wichtig, sich Anwendungen zu finden, wo es Sinn macht. Als Anbieter von Nischenprodukten mit höchstem Anspruch auf Qualität und Innovation haben wir unsere Kompetenz in der monovalenten Veresterung von Polyolefinen und PTFE um die Biokunststoffe erweitert. So produzieren wir bereits jetzt monovalent veresterte Multilayerverschleißschichten aus Kohlenstoff für den französischen Markt. Die Geschwindigkeit der Entwicklung ist ein Maßstab für die Qualität der Produktion.

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**LENZING PLASTICS**

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