

AntiStat



Perlon[®] – The Filament Company

Perlon[®] – The Filament Company – is an innovative, global group of companies specialized in the manufacture of synthetic filaments. Perlon[®] generates annual sales of more than 140 million euros, employs about 840 people and has a production capacity of 23,000 tons. We operate from locations in Germany, in the USA and in China.

Through our technical expertise and strength in innovation we develop premium quality products for our customers. The comprehensive product portfolio is based on a variety of raw materials. In line with the intended application, these are modified and processed into high quality, application-specific filaments. The consistent high quality of our products sets worldwide benchmarks.

AntiStat works before it sparks

AntiStat is a polyester-based bi-component monofilament with antistatic properties. It can be used to manufacture both woven and spiral sieves for processing and conveying belts in various industries. Example applications encompass nonwoven forming fabrics and particleboard- or pellet-dryers.

AntiStat dissipates electric charges, thereby improving the process stability and reducing explosion hazards in line with the ATEX Directive (explosive atmospheres). Furthermore, AntiStat can be used as a semi-conductive material, e.g. for dielectric shielding of high voltage cables.

Technical data

- Core/Sheath structure including an electrostatic dissipative polyester in the sheath and excellent core/sheath adhesion
- Available in diameters from 0.30 – 2.50 mm
- 4 different shrinkage levels
- Volume resistivity $\leq 250 \Omega \times \text{cm}$
- HPS (high pressure shower) / hydrolysis resistant
- Fulfils the requirements of ATEX Directive

Areas of application

- Dissipation of electrostatic charge
- Screening function in high voltage lines
- Manufacturing of process and conveying belts
- Use in woven or spiral fabrics
- With an electrical resistance in the final product ranging from 4×10^4 to 6×10^{10} Ohms, AntiStat meets the ATEX directive.

Characteristics of AntiStat

AntiStat is a bi-component monofilament with a core-sheath structure. The core consists of polyester and the sheath is made of a polyester-based polymer filled with carbon black (see Fig. 1). The two polymers are co-extruded which ensures an excellent core-sheath adhesion (see Fig. 2) and prevents the release of carbon black particles during fabric manufacturing and – most importantly – in the end application. The electrostatic conductivity of AntiStat outperforms other polyester-based monofilaments available on the market. AntiStat can be woven or coiled (see Fig. 3).

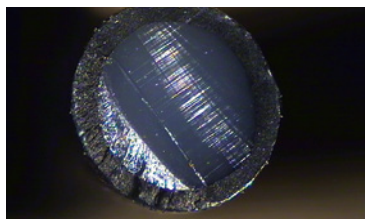


Fig. 1:
Cross section of AntiStat

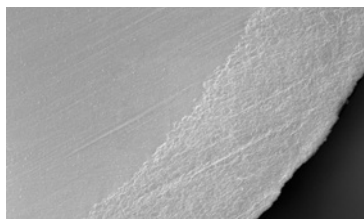


Fig. 2:
Core-sheath transition zone



Fig. 3:
Spiral made from AntiStat

Characteristics of process belts containing AntiStat

Process belts usually combine conductive and standard polyester monofilaments in warp and weft directions. The relative amount of AntiStat versus standard polyester monofilament is determined in order to achieve the desired electrostatic dissipation. As the thermomechanical characteristics of AntiStat are very consistent with those of QualiFil polyester monofilaments, the belts (see Fig. 4) or spiral sieves (see Fig. 5) are very uniform and exhibit a smooth surface in comparison to fabrics made with polyamide-based conductive monofilaments. This reduces the risk of marking and improves the abrasion resistance against static machine parts.

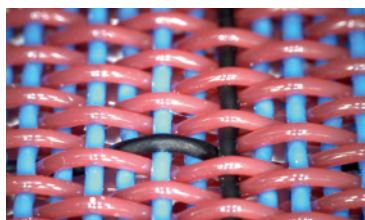


Fig. 4: Sieve fabric from PET
with AntiStat in warp and
weft directions

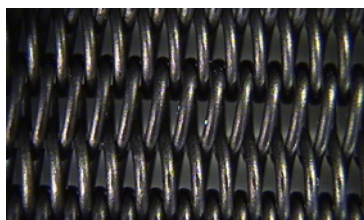


Fig. 5: Spiral sieve from
100% AntiStat

High mechanical resistance LH type and hydrolysis resistant LC type for demanding areas of application

AntiStat LH has been specifically developed for mechanically demanding applications. AntiStat LH withstands high pressure showers operating at 200 bar while standard types show significant damages. AntiStat LH is therefore recommended for spunbond forming fabrics which usually undergo a periodic cleaning process at high pressure. The hydrolysis resistant AntiStat LC has been developed for dryer fabrics operating at high temperatures in damp environments. It has a residual strength under extreme hydrolytic conditions (145 °C / 32 h / 4.2 bar) of over 60 %.

Brand related products: 7** LC, LH, LS

This product information has been compiled to the best of our knowledge and with the greatest of care. We cannot, however, assume any liability for the accuracy, integrity or timeliness of its content. The technical parameters and the behaviour of the monofilament can vary depending on diameter and production technique.