

# SUPERTEX

## Sustainable flame retardant technical textiles from recycled polyester

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### INFORMATION ON THE ECO-INNOVATIVE SOLUTION PROVIDER

This eco-innovative solution is the output from the project titled “Eco-friendly high performance fiber composite material” co-funded by the European Commission within the framework of the Competitive and Innovation Program. This solution has been developed by a team coordinated by Next Technology Tecnotessile, in partnership with Centexbel, Leitat, SpinPET srl, Romei srl, ANTEX SA, ECIMA SAU DEVAN and APOLLO srl.

### SHORT DESCRIPTION OF THE ECO-INNOVATIVE SOLUTION

The innovation consists of the know-how in using post-industrial recycled polyester scraps and post-consumer recycled polyester for the production of multifilament yarns for technical applications, e.g. Automotive and Contract textile sectors. The recycled polyester yarns can be processed in the same way as virgin material. In addition, new functionalities, e.g. fire resistance, can be added to the recycled PET-based multifilament yarns.

### INDUSTRIAL SECTOR – MARKET SEGMENT AND ACTUAL APPLICATION IN INDUSTRY

22 Textile Mill Products

### INDUSTRIAL CLASSIFICATION - NACE CODE;

13 Manufacture of textiles

## 1. DESCRIPTION OF ECO-INNOVATIVE SOLUTION

### Technical aspects of the eco-innovative solution

The core element of the new technology consists of a process to produce yarns using post-industry and post-consumer PET granules. Post-consumer and post-industrial recycled PET fabrics can be weaved, knitted, dyed and finished with the same products and under the same conditions as conventional fabrics. The finishing of recycled polyester fabrics with flame-retardant compounds assures the same performance of the virgin polyester material. The recycled PET scraps need to have pre-defined characteristics. The final products have been tested according to international standards and specific customer requirements.

### Economic and environmental benefits of the eco-innovative solution

The new process does not need any new equipment for a spinning company as the innovation consists of an optimised formula and a more stringent humidity control in particular regarding the rheological properties.

Vacuum drying is recommended even if thermal drying can be used. The selling price for the final product is in the same range as products from fossil virgin materials (4.5€/kg for final product).

The main benefits include:

- 1) Up to 30% reduction in the carbon footprint
- 2) Promotion of the re-use of valuable waste materials from food industry packaging
- 3) Reduction in fossil fuel depletion up to 80%
- 4) Reduced dependency on the purchase of virgin polymer
- 5) The final price is in the same range as virgin yarns
- 6) Only a better control of process conditions is required
- 7) No investment is required in the post-treatment of waste.

## 2. AVAILABILITY OF THE ECO-INNOVATIVE SOLUTION AND BUSINESS PARTNERSHIP

### Market readiness, Trade mark, existing market coverage, commercialization strategy

The process has only been implemented in Italy and Spain, using post-industry PET from the food industry, the food packaging industry and post-consumer PET, manufactured and supplied to spinning companies. Trade mark available: Supertex

### Requirements to adapt the solution to the local market and potential applications/market size

Stringent quality requirements for post-industry and post-consumer PET granules, e.g. where Polyolefin contamination is below 7.5%.

### On-site after-sales services support and the technical assistance requirements

From Italy

### Targeted local business partners

Spinning companies

### Type of local business partnership sought

Licensing