



Plastics Circularity
Multiplier



RECYCLED ACRYLIC FABRICS, THE PROBLEM OF IMPURITIES

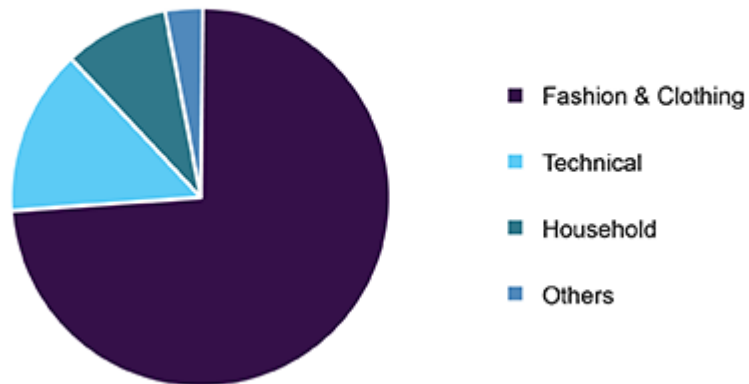
Daniele Piga

29/10/2020, REACT webinar

TEXTILE SECTOR



Global textile market share, by application, 2019 (%)



Source: www.grandviewresearch.com

Market value USD 961,5 billion in 2019
+ 4,3% to 2027

Only 1% of market is recycled

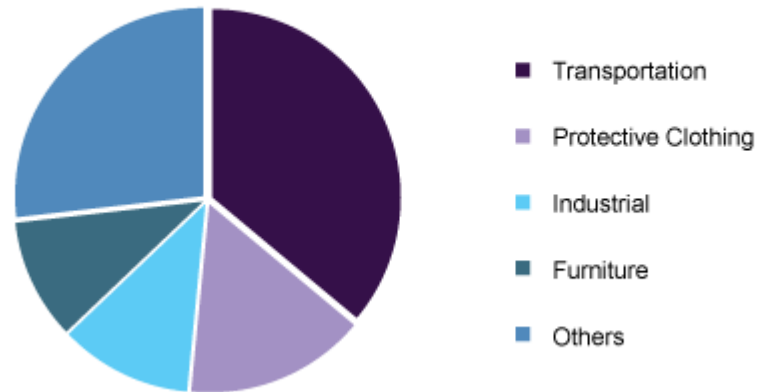
Textile Market Size, Share & Trends Analysis Report By Raw Material (Wool, Chemical, Silk, Cotton), By Product (Natural Fibers, Polyester, Nylon), By Application, By Region, And Segment Forecasts, 2020 – 2027, Grand View Research

Recycled Textile Market to Reach \$8.0 Billion by 2026 at 5.2% CAGR, Allied Market Research

TECHNICAL FABRICS



North America coated fabrics market size, by product, 2012 - 2020 (USD Million)



REACT focused on:

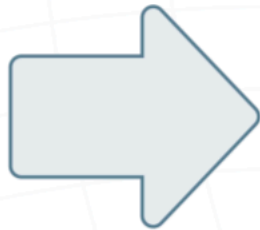
- Awnings
- Furniture

THE CHALLENGE



Acrylic fibre is used for clothing, outdoor furniture, boat covers and awnings, with almost 2 million tonnes produced every year.

In the 'awning and outdoor furnishing' textile market, acrylic is still the main material used (more than 90% of production) **thanks to its unmatched performance** (combination of weatherability, UV resistance and mechanical strength).



- 11'000 tonnes/year of outdoor acrylic textiles
- 2.5 million awnings installed in Europe

IT IS ESTIMATED THAT EVERY YEAR, IN EUROPE, ABOUT 7'700 TONNES OF ACRYLIC TEXTILE WASTE ARE DISPOSED OF BY LANDFILL OR INCINERATION

Our goal is to identify processes to treat and recycle acrylic textile waste in an ecological and economical way. We aim to enable European fabric producers to improve sustainability and reduce environmental and health risks, by disposing of less waste, recovering hazardous chemicals and using smaller amounts of traditional chemicals.

- **Recycling of acrylic textile waste**
- To develop a method to **remove undesirable substances** from waste of acrylic fabrics
 - with an environment friendly process (if possible)
 - to enhance their recycling
 - to improve sustainability
 - to reduce environmental and health risks
- Main application sectors are **awnings and outdoor furniture**



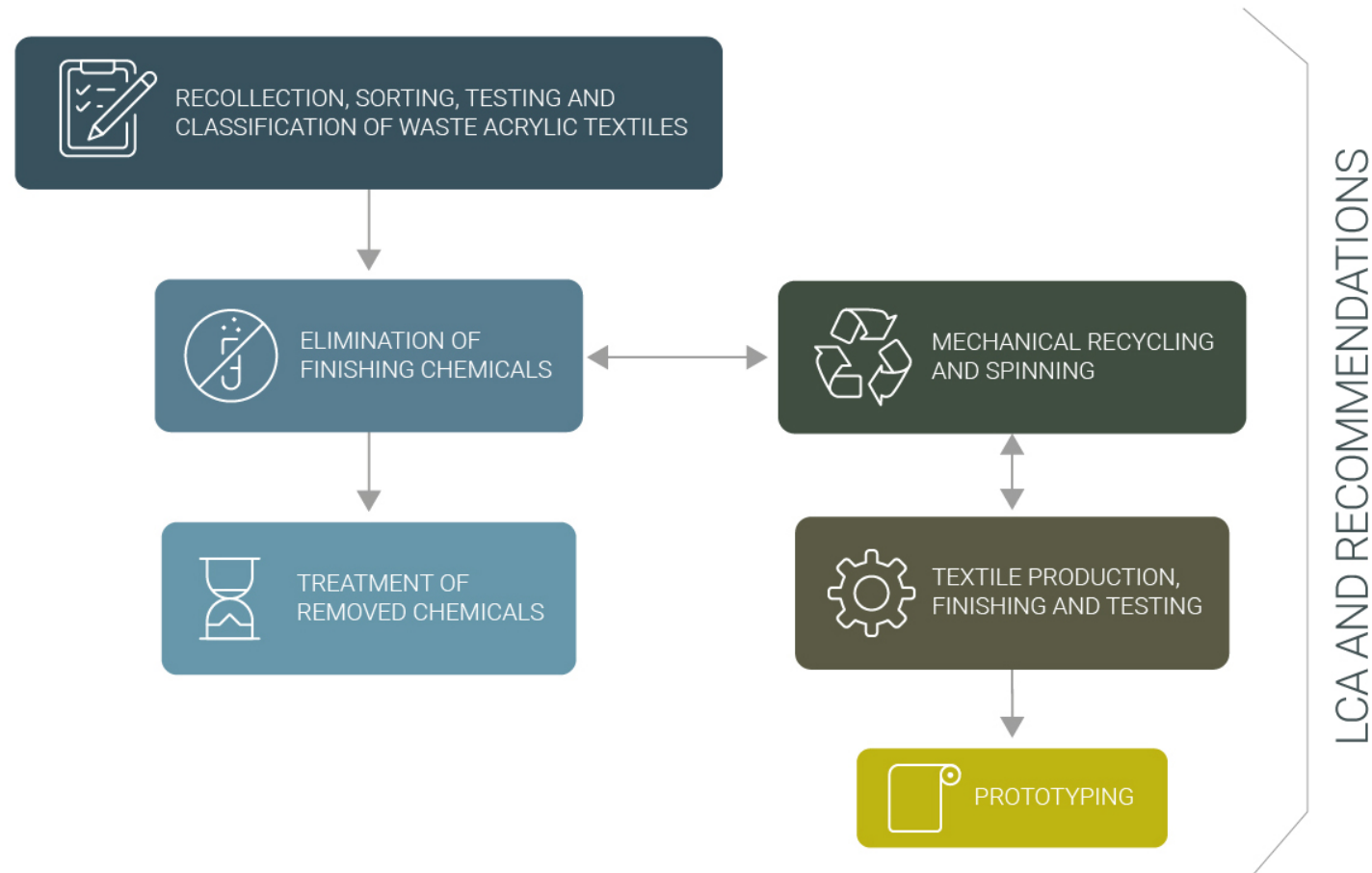
- to reach a removal rate of **90-95%** of chemicals/substances that prevent their recycling
- to treat up to **99% of all** sewage **impurities** obtained from removal steps
- to obtain a final textile product with yarn coming from **100% recycled fibre**, mixing regenerated fibres from card, winding opened thread and waste material collected fibre, each up to 33%
- to re-use the acrylic textiles as raw material for other production cycles, to reach 30 % of **waste prevented** from disposal (**3.600 tonnes total**) for the outdoor sector (awnings and furnishing)



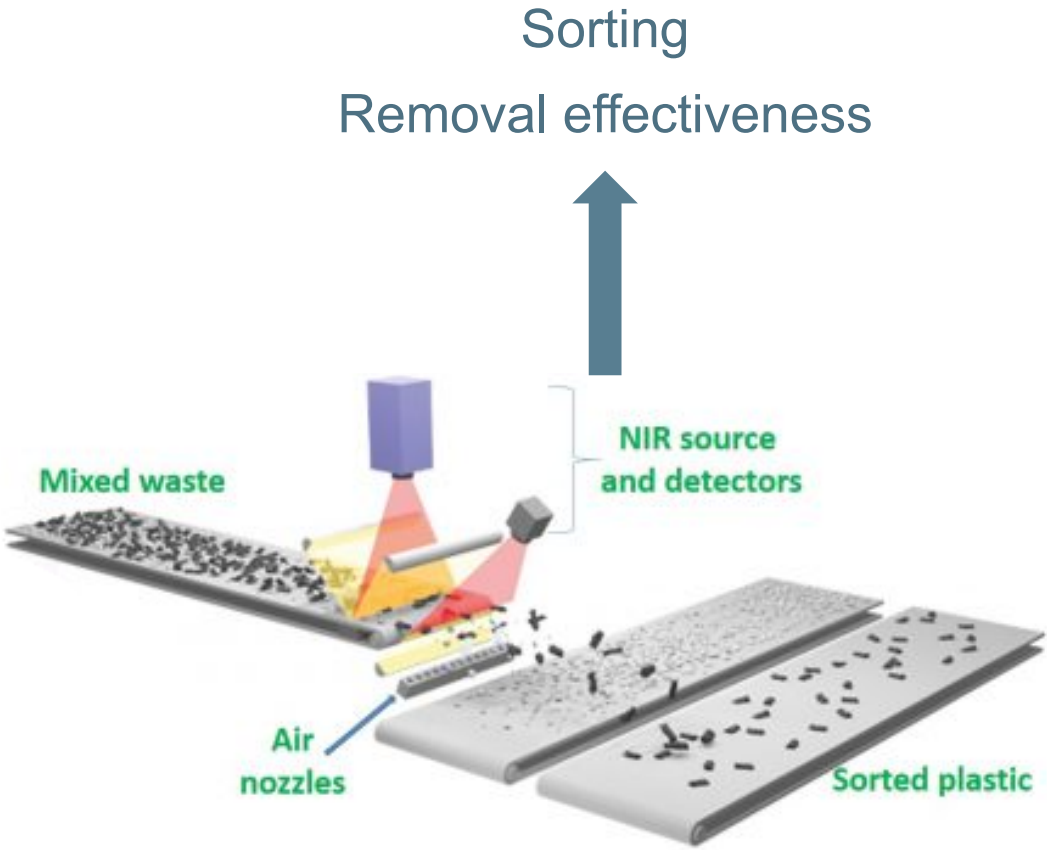
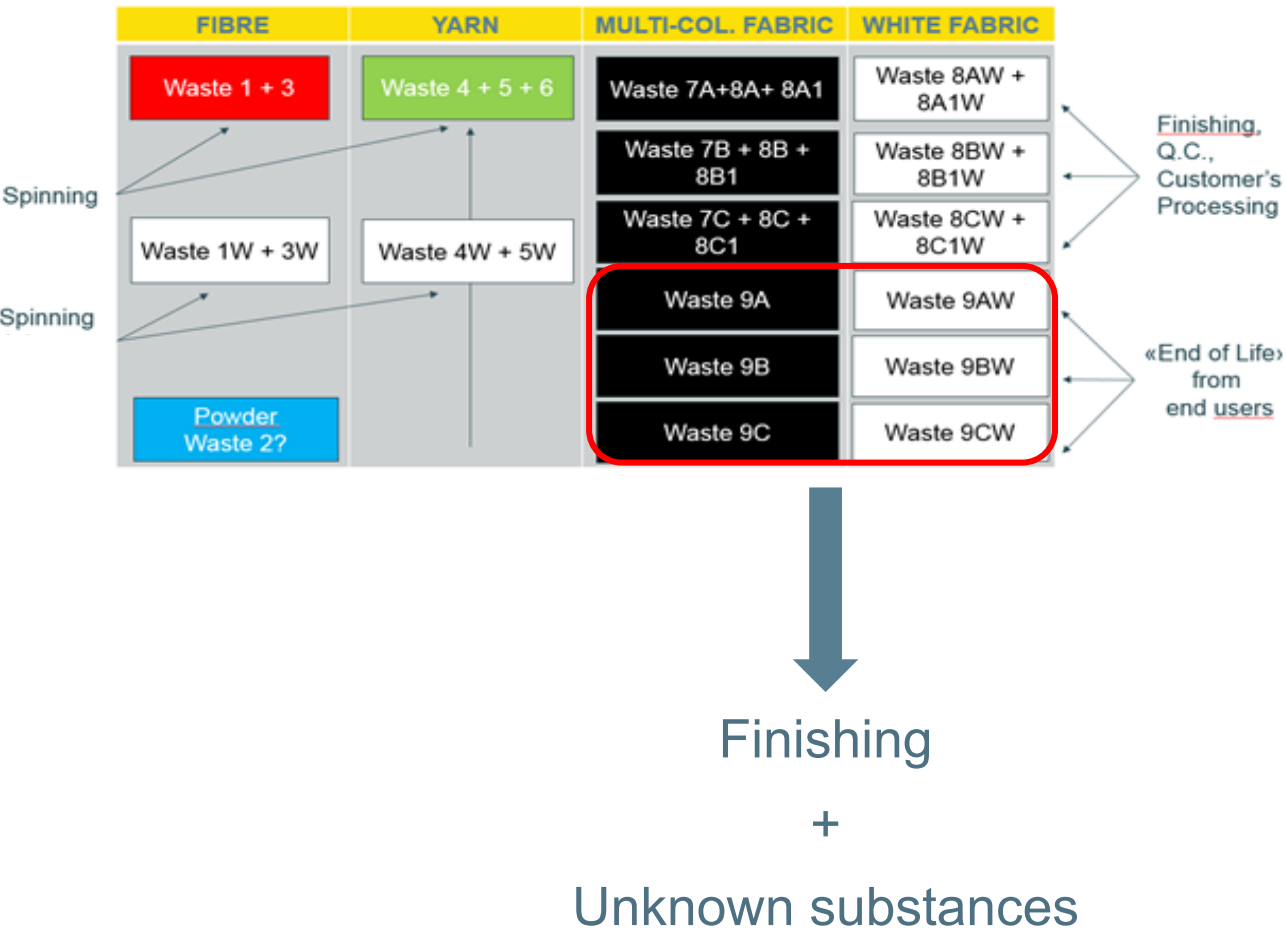
- Different finishing applied



REACT METHODOLOGY



REACT SORTING



- Increased purity and quality of secondary raw materials
 - Our project aims to a **90% removal of chemicals of the finishing process**
 - The mixing with the virgin regenerated fibre (up to 33%), the final purity of the recycled fibre will reach 90-95%
- Reduced risk of retaining hazardous substances in recycled materials
 - A reduction of hazardous substances in recycled materials
 - Reduction of hazardous substances in landfill



WOULD YOU LIKE TO KNOW MORE?



Visit our website
<https://www.react-project.net>



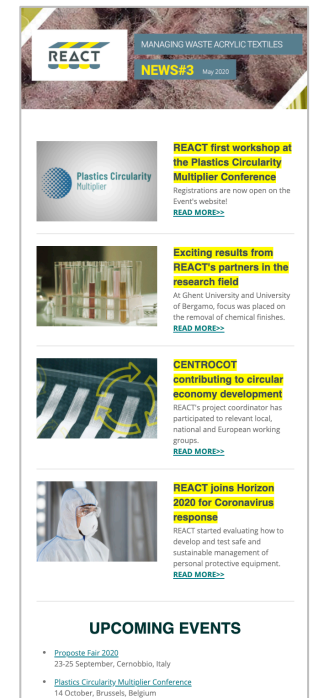
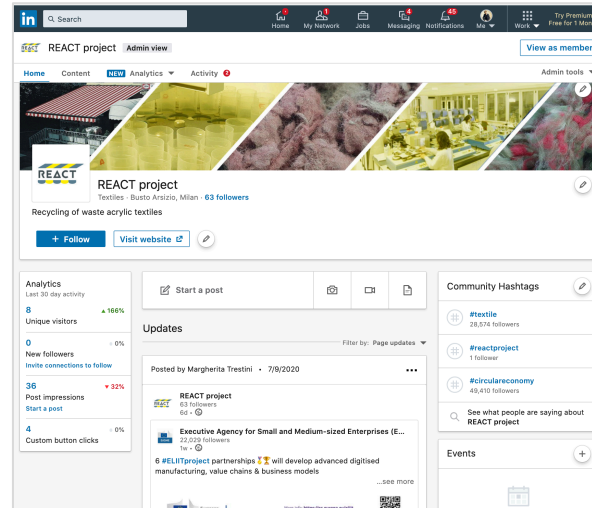
Follow us on LinkedIn
linkedin.com/company/react-project



Follow us on Twitter
[@project_react](https://twitter.com/project_react)



Subscribe to our
Newsletter





THANK YOU
FOR YOUR
ATTENTION

This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 820869

