

Strategies for removing chemical finishes from post-consumer outdoor fabrics

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The management of post-consumer awnings and outdoor textiles has become relevant during the last years due to their extensive use, suggesting an ever-growing interest in the sustainable disposal of this "waste". The attention to their recovery and reuse is due to both the synthetic nature of these textiles and the chemical finishes applied on their surface to make them long-lasting resistant to water and atmospheric agents. In this perspective, strategies for removing hazardous finishing chemicals from the waste of acrylic fabrics were performed in the framework of the REACT project, an EU research focused on innovative investigations and processing techniques for obtaining fully recycled textiles compatible for reuse. The proposed strategies were successful in the total removal of chemical finishes from post-consumer textiles. Moreover, during their use over the years, the long-lasting sunlight exposure slightly acts on the partial finishing leaching from outdoor fabrics, thus representing an environmental concern. Therefore, looking to increasingly sustainable processes, the proper management of post-consumer outdoor textiles and the chemical substances removed is essential for obtaining recycled fabrics to be reused in second life by involving the most recent environmentally friendly and safe for human health finishing for high performance.