Potential for recycling Spandex

Arianna Gutierrez[1] & Izabela Ciesielska-Wrobel[1]

[1]Department of Textiles, Fashion Merchandising and Design (TMD) College of Business, University of Rhode Island, Kingston, RI 02881

Spandex is increasingly being added to textiles due to the elasticity that it adds. Since Spandex often only represents up to 5% of the textile, in textile recycling spandex is often sacrificed in the effort to recycle the other fabric such as cotton, polyester, or nylon in these blended textiles. However, that 5% adds up and can pose environmental hazards when it is disposed of.

On labels of many apparels we buy, we can see for example spandex 4%, cotton 80%, and polyester 16% or similar compositions. This variety of textile raw materials causes difficulties in recycling, thus impeding this much-needed process. If separated, these raw materials can be recycled mechanically (cotton, wool) and mechanically and chemically (polyester, nylon); however, when blended on the fibers level (an intimate blend), mechanical recycling poses problems and is not viable. There are ways to perform chemical separation of selected raw materials before mechanical or chemical recycling, e.g., dissolving one of the components in the blends and retrieving (regeneration) the other or all the remaining components, including the one that was dissolved. If chemical separation is not performed on textiles containing elastomeric fibers, they will not be recycled at all, as there is no methodology allowing the separation of different textile components of apparel due to fibers' entanglement.

References

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Arianna Gutierrez is a graduate student at TMD; ariagut@uri.edu
Izabela Ciesielska – Wrobel is an assistant professor at TMD; iciewrobel@uri.edu