Carbon Footprint Assessment Information Sheet

r-MicronQuick

Carbon Footprint Assessment of r-MicronQuick

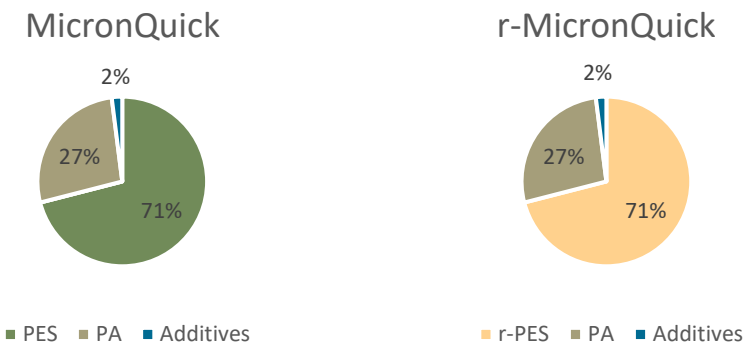
The production of textiles is often perceived as environmentally damaging and demanding a high amount of resources.

Vileda Professional (VP) has strived over the years to develop products that use recycled material for the production of their products to reduce their environmental impact and contribute to a circular economy. VP introduced an innovative product with their r-MicronQuick cloth, which contains 71% recycled polyester.

To accurately quantify the full environmental impacts due to material and energy consumption, VP commissioned a Carbon Footprint (CF) study according to ISO 14067. The study was conducted by e-hoch-3, Darmstadt, and was reviewed and verified by Greendelta, Berlin. This CF study was a cradle to gate analysis, including disposal. This document provides an excerpt of the material findings of the study.

Goal and Scope

The goal of the study was to compare the use of recycled polyester fibre versus the use of virgin polyester fibre in the MicronQuick cloth. The main difference between the two products is that the r-MicronQuick consists of 71% recycled polyester (comprising post-consumer[1] PET-bottle waste, certified), 27% virgin polyamide and 2% additives, while the virgin material option consists of 71% virgin polyester, 27% polyamide and 2% additives:



[1] According to ISO 14021: 2016-07 Environmental labels and declarations, the expression “post-consumer material” defines “Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. ”Pre consumer materials” are by definition e.g. the usage of waste streams directly from manufacturing processes.

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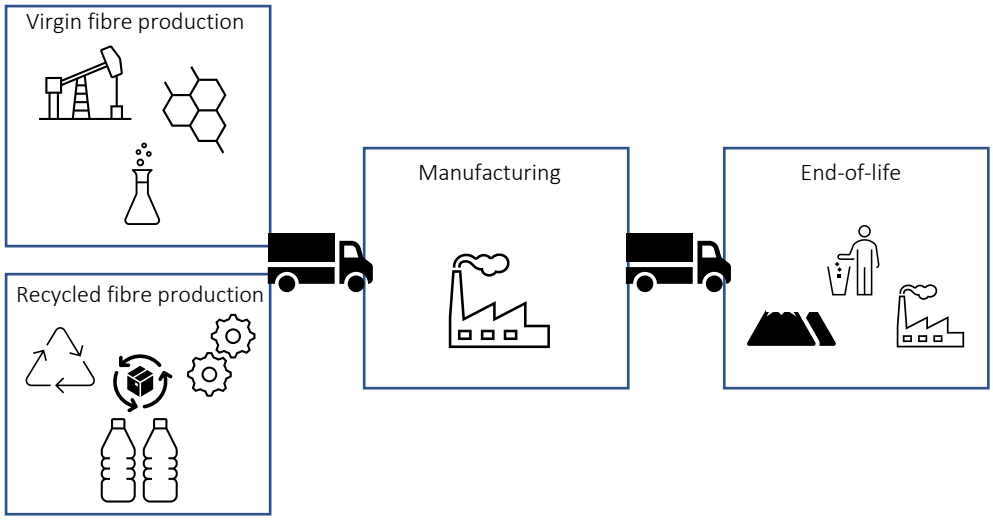
The partial carbon footprint refers to the declared unit including the production and disposal of one cleaning textile produced in France and Italy in 2021.

The reference year for the study was 2021. The PET recycling takes place in France. The other basic materials required are produced in Europe, while the manufacturing of the cloths takes place in France and Italy. The production process takes into consideration the extraction of raw materials, fabric production, dyeing, converting and transport processes. The product is packed and distributed to central Europe for final usage. The cloths are assumed to be disposed as household waste.

The diagram below presents the system boundaries for the study. It includes raw material production, manufacturing, transport to a central warehouse in Europe, and end-of-life treatment. The carbon footprint includes the whole life cycle except for retail activities and usage, which would be similar for the benchmark product and the new product.



The LCA modelling was conducted using the openLCA software based on collected primary data and the ecoinvent 3.7.1 datasets. The impact assessment framework selected was the internationally acknowledged EF 3.0 framework.

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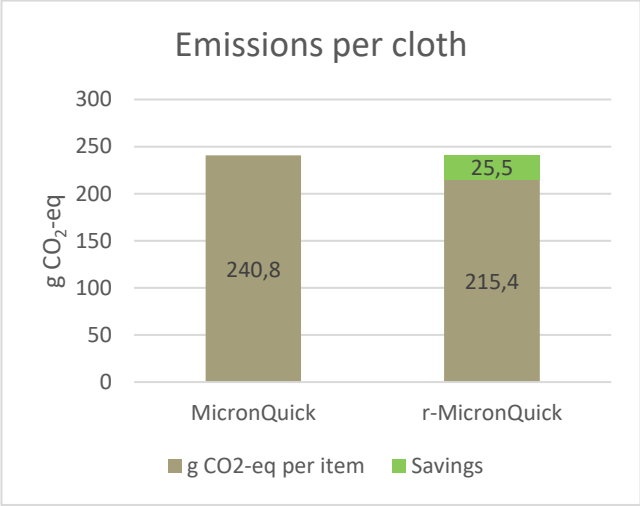
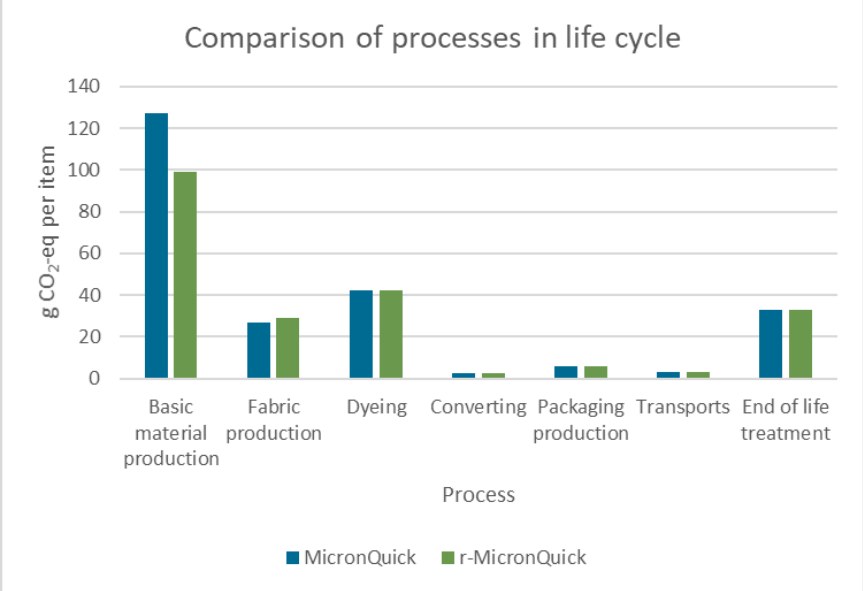
Key Findings

By switching from virgin polyester to recycled polyester, savings of 25,5 g CO_2-eq per cloth have been determined. Compared to emissions from production and end-of-life of MicronQuick, this equals a reduction of 11%.



The results show that the production of the basic material has by far the largest share of emissions. This is followed by the dyeing process, end of life treatment, and fabric production. Emissions from converting, packaging production and transportation activities are negligible low.



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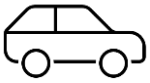
Normalization

To scale the results to a common sales volume, the global warming impacts of the production of 1000 items of the product is put into perspective in the following table.

Product	Savings of CO_2 compared to virgin product MicronQuick [kg CO_2-eq][2]	Content of recycled 0,5l PET bottles in products[3] 	Distance travelled by car [km][2] corresponding to the CO_2 saving 
1000 items of r-MicronQuick	25,5 kg CO_2eq	1007 bottles	193 km

Date: March 2022 Weinheim, Germany

For further information, please contact:

[2] Savings compared to virgin material option in the Production stage, which includes materials, production, packaging and transport to central warehouse in EU
[3] Weight of empty 0,5l PET bottle without lid: 10g–20g; Content of recycled bottles in one item of r-MicronQuick: 1 bottle
[2] Average CO2-emissions of petrol fueled car at 5,6 l/100km: 0,132 kg CO2-eq per km (Source: https://rechneronline.de/co2-ausstoss/)

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