



Polyester Recycling

Although it is a common assumption that textiles made from natural materials such as cotton and silk are more environmentally friendly than textiles made from man-made materials, the case for polyester fibre proves this to be incorrect.

Polyester is made from petroleum, a non-renewable resource that creates damaging environmental impacts during the extraction process. However, when considering the whole lifecycle of the fibre, from the raw materials, through the use phase to the end of the lifecycle, polyester is not as environmentally damaging as believed. It has lower energy impacts during the washing and cleaning phase and is also completely recyclable at the end of its life.

Polyester textile recycling has been developed using the clear plastic water bottles, or PET as the raw material, a source of plastic that would otherwise go into landfill.

The most common form of textiles made using recycled polyester is fleece, a knitted pile fabric often used by outdoor clothing companies to make jackets. Patagonia are the most well-known promoters of polyester recycling and have partnered up with Teijin, a Japanese company who have developed their own closed-loop polyester recycling system.

Large clothing retailers in the UK, like Marks & Spencer have also started to use recycled polyester in some of their clothing ranges, although there are currently no successful consumer recycling schemes available in the UK.

Facts

- Polyester is now the largest single fibre group within global textiles production, estimates being as high as 52%, taking over from cotton. (Black, S Eco Chic 2008)
- By using PCR fleece, Patagonia has saved in excess of 86 million plastic bottles from landfill (www.patagonia.com)

Reading Materials

Fletcher, K. (2008) *Sustainable Fashion & Textiles: Design Journeys* Earthscan UK

Well Dressed: the present and future sustainability of clothing and textiles in the UK (2006) University of Cambridge Institute for Manufacturing
<http://www.ifm.eng.cam.ac.uk/sustainability/>

Projects of Interest

Top 100 - <http://www.upcyclingtextiles.net>

Rebecca Earley developed Top 100 as a long-term personal project that explores an original approach to recycling textiles, endeavoring to extend the lives of one hundred second-hand polyester shirts by addressing ideas about emotionally durable design, low-laundry, mono-materiality, zero-waste and low impact print techniques and technologies.

The process involves an exhaust printing technique on second-hand polyester clothing that produces no water pollution or chemical or fabric waste.

Kate Goldsworthy –

<http://www.kategoldsworthy.co.uk/>

Kate Goldsworthy is a textile designer and researcher exploring 'design for disassembly' and 'mono-materiality' as a way to produce 'interim' textile products utilising manufacturing technologies and the recycling of PET polymer waste.

Twice Upcycled

Earley and Goldsworthy have collaborated to create a small collection of 'twice upcycled' garments. The first upcycling occurs when Earley overprints and reshapes a second-hand polyester shirt. Following a period of wear by the consumer, the shirt can be returned for the second upcycling stage where it is re-cut and lined in recycled polyester fleece, and then laser welded by Goldsworthy, to become a luxury quilted jacket.

Companies and Designers

Teijin Eco Circle – <http://www.teijinfiber.com/>

A Japanese company who have developed a closed-loop recycling system for used polyester products that employs the world's first chemical recycling technology. With this technology, polyester is chemically decomposed and converted back into new polyester raw materials.

Patagonia Common Threads -

<http://www.patagonia.com/web/us/patagonia.go?asetid=1956>

Patagonia have developed a garment recycling scheme where customers who have purchased one of Patagonia's polyester garments can bring them back to be recycled once they are worn out.

Closed Loop Recycling -

<http://www.closedlooprecycling.co.uk>

A UK based company who can recycle plastic bottles to be reused as plastic bottles.