



Ethanol is being used to create the feedstock for polyester. | Photo source [LanzaTech/Lululemon](#)

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## FABRIC MADE FROM RECYCLED CARBON EMISSIONS

  SUSTAINABILITY

### Lululemon is aiming to replace the polyester with a fabric made from ethanol that was produced by pollution-eating bacteria

**Spotted:** The international apparel brand Lululemon has partnered with biotech startup LanzaTech to make fabric from recycled carbon emissions for their high-end yoga pants.

LanzaTech compares their process to a brewery in that microbe-filled vats convert pollution into ethanol, just like yeast makes beer. Jennifer Holmgren, CEO of LanzaTech, [told Fast Company](#) that the ethanol used comes from a steel mill in China, where they have a commercial plant in operation which ferments the carbon monoxide gas and converts it into ethanol. The company turns pollution into ethanol normally to make fuel or chemicals; however, this time the ethanol is being used to create the feedstock for polyester.

To turn the ethanol into monoethylene glycol (MEG), Lululemon also worked with chemical partners India Glycols. The MEG was then transformed into polyester with help from textile manufacturer Far Eastern New Century. When made into Lululemon's fabric, [the brand reported](#) that it was just like the version made from fossil fuels.

At the moment, however, the cost of making the fabric is more than that of making polyester from crude oil or natural gas. The company said to [Fast Company](#) that unless there's a tipping fee or a carbon tax, it will take a long time for the process to become cost-competitive. However, Lululemon is working on a new synthetic biology process that will simplify the process, allowing it to go directly from gas to MEG. When that works, the company believes that producing material out of recycled carbon emissions will become cost-competitive.

Lululemon has yet to announce which products the fabric may be used in.

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Website: [lululemon.co.uk](https://lululemon.co.uk)

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## **Takeaway:**

Research carried out by McKinsey showed that the fashion industry was responsible for some 2.1 billion metric tons of greenhouse-gas (GHG) emissions in 2018, almost 4 per cent of the global total. Alongside other companies in the market that are using recycled emissions as part of their processes, the new fabric is a way for Lululemon to shrink their carbon footprint. For such an influential company to do so, will help advance carbon recycling technologies and create a new standard both for industry and customers.