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CO DATA

What Are Our Clothes Made From?

Clothes today are made from a wide range of different materials. Traditional materials such as cotton, linen and leather are sourced from plants and animals. But most clothes are more likely to be made of materials and chemicals derived from fossil fuel-based crude oil (see Figure 1).

There are nine major types of raw materials commonly used in clothing today.

FIGURE 1
Market share of main fibres, 2016

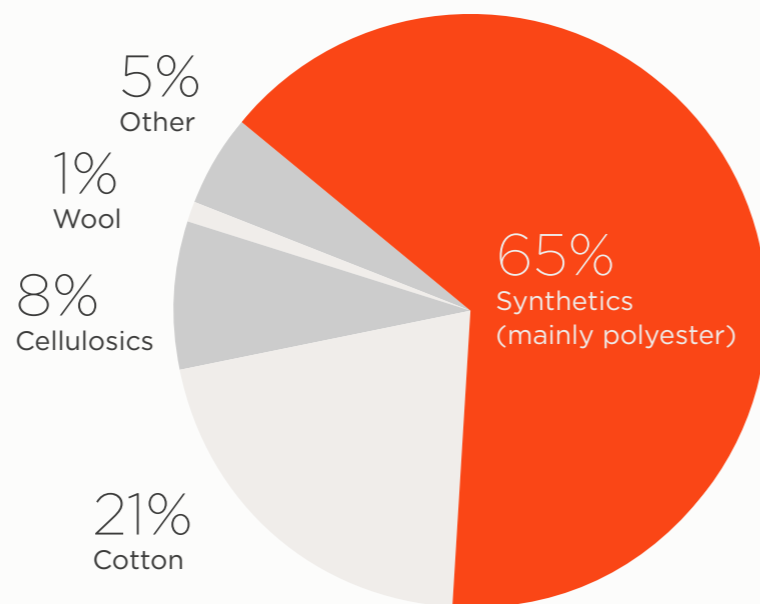
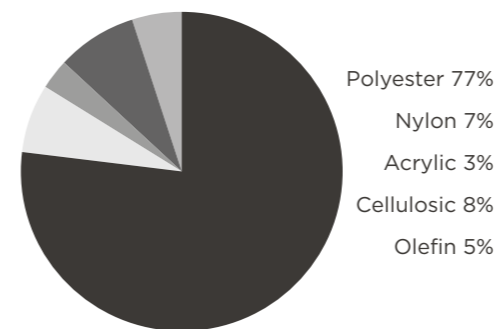


FIGURE 2
Breakdown of commonly used synthetic fibres, 2016



Synthetic materials

The source of synthetic fibres and fabrics is the fossil fuel crude oil. It is estimated that 65% of all fibres used in the fashion industry are made from a synthetic material - mainly polyester, but also nylon, acrylic, polypropylene and elastane (see Figure 2).¹

Around 98% of all future fibre growth is expected to be in synthetic fibres, 95% of which is expected to be polyester.²

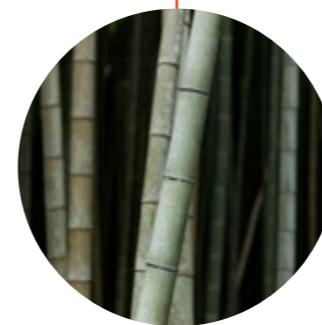


Cotton

One of the oldest used fibres and the most important non-food crop in the world is cotton. Currently, cotton makes up around 21% of all fibre use globally - about 21 million tonnes³ - but its share of the market is declining due to competition from synthetic alternatives.

Cotton production is particularly important for farmers in lower-income countries, where approximately

350 million people are involved in its cultivation and processing.⁴



Cellulosic fibres/viscose

These materials begin as cellulose extracted from a natural resource (such as bamboo or trees) that is then crushed, pulped and transformed into fibres using a similar process to the one for making polyester. The most common cellulosic fabric is viscose, prized for its silk-like qualities (rayon, the first type of viscose fabric invented, was created to mimic silk).

About 6 million tonnes of cellulosic fibre is produced each year for the textile market and is worth around \$9.1 billion. This share is expected to grow by around 8% per year to 2025.

Major processing centres for cellulose are China, Japan, South Korea, Pakistan, Taiwan and Indonesia.⁵



Wool

A traditional fibre, particularly in colder climates, wool has a tiny, and decreasing, share of the world market (around 1%). About 2 billion kilograms of raw wool per year are produced from a global herd of around 1.16 billion sheep.

This roughly equates to one wool sweater per person per year for everyone on the planet.⁶

These figures include wool textiles used for items other than garments – such as furniture or carpets.

Silk

An ancient, highly prized fabric, silk is derived from the thread produced by the silkworm species *Bombyx Mori*. About 202,000 MT of silk are produced each year (about 0.24% of total fibre)⁷ in more than 60 countries, but the bulk of production is concentrated in a handful: China, India, Uzbekistan, Brazil, Japan, Korea, Thailand and Vietnam.⁸

Compared to other natural fibres, silk is incredibly valuable.

Silk commands a price of around \$15 per kilo, making the value of production around \$3.03 billion per year.

Leather

This is one of the oldest forms of materials used by humans as clothing and it remains an important fabric particularly for footwear and accessories. Around 3.8 billion cows and other bovine animals, sheep and goats are used in the leather production industry each year⁹ – around one animal for every two people on the planet. More than half the world's supply of leather raw material comes from developing countries, with China the dominant buyer and processor of this.¹⁰

The global trade in raw leather is around \$30 billion per year.



Bast fibres

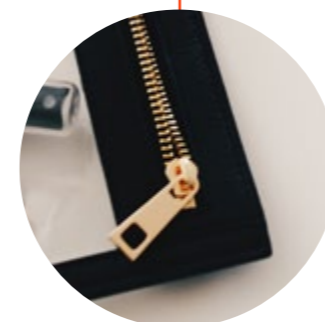
Bast fibres like flax (for linen), hemp and nettle are a traditional source that has been used by humans for thousands of years, although they presently make up only a small proportion of total fabric use.

These fibres are found in the inner bark layer (phloem), of the plant that sit between the woody core (xylem), and the outer-most layer (epidermis). The long phloem cells must be separated from the xylem and epidermis before being further treated to make them ready to weave or knit into fabrics,¹¹ either as a pure fibre or in a mix with other fibres such as cotton. Most bast fibres are used for other products such as paper, ropes and carpets.



Experimental fabrics

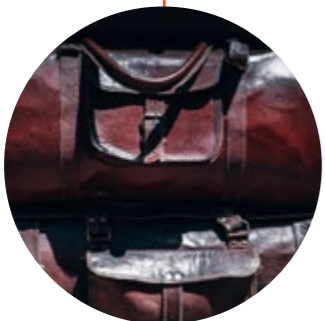
This is a broad category of fibres and materials that are diverse but make up only a tiny fraction of the entire amount of fabrics used. Many of these are experimental in nature – for example, they may be made from materials originally derived from mushrooms,¹² pineapple¹³ or milk.¹⁴



Notions and hardware

Metals, plastics, wood and other assorted materials go into making the 'hardware' that is intrinsic to many clothes (zip fastenings, buttons, buckles, clasps and so on). These items may be small but their production is far from small-scale.

The zip market alone is worth \$13 billion in sales per year.¹⁵



References

- 1 Textile Exchange (2017) [Preferred Fiber Material Market Report](#)
- 2 Yang Q.M. (2014) Global Fibres Overview, Synthetic Fibres Raw Materials Committee Meeting at APIC, Pattaya, 16 May
- 3 Textile Exchange (2017) op. cit.
- 4 Fairtrade (2015) [Cotton Commodity Briefing](#)
- 5 Market Research Report (2016) [Cellulose Fiber Market Analysis By Product Type \(Natural, Synthetic\), By Application \(Textile, Hygiene, Industrial\), By Regions \(North America, Asia Pacific, Europe, Central and South America, Middle East and Africa\), and Segment Forecasts, 2014-2025](#) (accessed 24 August 2017)
- 6 If each sheep produces enough wool for six sweaters per year, and there are 1.16 billion sheep in the world, then, on average, the global sheep wool herd produces enough fibre for 6.9 billion sweaters – just under one sweater per person per year for the entire global population.
- 7 There are approximately 85 million metric tonnes of fibres produced each year (Technon Orbichon). Silk production is approximately 0.235% of this total.
- 8 [International Sericultural Commission \(undated\) Statistics](#) (accessed 2 August 2017)
- 9 FAO (2016) ['World statistical compendium for raw hides and skins, leather and leather footwear 1999-2015'](#)
- 10 Pieper, A. and Xu, F. (2016) Tricky Footwork: The Struggle for Labour Rights in the Chinese Footwear Industry, Report for the Clean Clothes Campaign
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- 13 Ananas Anam (2017) ['Ananas Anam Presents PINATEX'](#)
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- 15 Business of Fashion (2016) ['The \\$13 billion Zipper War'](#)