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Background information

Manmade fibers: a rapidly growing mass market

More than 50 million tons of manmade fibers are produced every year worldwide. With a market share of 81 %, the undisputed leader is polyester, which is generally used in clothing. Given the continuing population growth and improving standards of living seen particularly in emerging countries, manmade fibers will remain an especially fast-growing mass market for many years to come.

Worldwide demand for textile products has been growing for years: In 1980, just eight kilograms of textile fibers were annually used on a per capita basis worldwide. By 2012, this had risen to 12.2 kilograms, a 53 % increase in per capita use. Last year, a total of 85.8 million tons of textile fibers were produced worldwide. The fastest growth is generated by manmade fibers: The percentage of manmade fibers among total fiber production rose from 30 % in 1980, to 59 % in 2012. No matter whether they are used in functional athletic wear, curtains, carpets, tire cords, airbags or technical textiles for road construction and industry, manmade fibers have been a part of all areas of our lives for a long time now.

Virtually unlimited availability and more cost effective

There are many reasons for this success. The fields used for producing cotton or wool have to compete against areas used for growing food. In addition, the production of natural fibers is largely tied to the weather. By contrast, the organic raw materials used in manmade fibers will be available on a virtually unlimited basis for decades to come and cost significantly less. One other important consideration is that products containing manmade fibers can be recycled. Furthermore, they exhibit a high level of design freedom in research and production: Manmade fibers can be adapted to meet a variety of different applications and can be given specific characteristics. We therefore now have fibers with low soiling characteristics and those distinguished by an exceptional thermal insulation.

This feature makes manmade fibers particularly attractive to makers of clothing like functional athletic wear. The clothing industry has been the biggest user of these fibers with a share of 54 % in 2011. The second-largest user group was home textiles with 25 % of fiber production, followed by technical textiles (12 %) and nonwovens (9 %).

Polyester is the mostly frequently produced fiber by far

The manmade fiber industry has an undisputed leader: 81 % of all manmade fibers are made of polyester. Fibers made of polyamide have the second-largest share with just 8 %. Other materials make up the rest with 11 %. Compared with polyester, their share is negligibly small. Measured in terms of the total fiber market in 2012, including natural fibers, polyester had a share of approximately one third.

Clothing is the largest application area of this material. Thanks to its excellent price-performance ratio, polyester has continuously enterered new markets. Today, it can be found in nearly all areas of final applications. For instance, this material is now increasingly being used for producing airbags, taking the place of the other fibers that were almost exclusively used for this purpose in the past. In 2012, 41 million tons of polyester were produced. This amounts to 112 329 tons a day. It would take 2 808 trucks with a capacity of 40 tons to transport a single day's production.

High-precision processes and systems perfected over the years

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Even though the applications of manmade fibers are so multifaceted, the production principle is largely the same: An extruder melts a plastic granulate. Afterwards, spinning pumps press the plastic melt through fine spinnerets under extremely high pressure. The continuous fibers produced in this process – or filaments – are then bundled as threads, drawn over godets and rolled by a winder. To make manmade fibers feel natural, they can be textured in a subsequent finishing step. In this process, the surface is embellished with the help of a special machine.

Systems used for the filament spinning of polyester and polyamide are the core business of Oerlikon's Manmade Fibers Segment. The necessary very reliable, precise technology needed to perform this job has been continuously perfected by Oerlikon Barmag and Oerlikon Neumag over the years. 22 of the 25 largest producers of polyester who, altogether, produce about 60 % of polyester filaments, use the processes and systems offered by Oerlikon.

China is the leading pacesetter in the manmade fiber industry

China is the largest producer of manmade fibers. The amount of fibers produced by the People's Republic grew by 60 % between 2008 and 2012, and now totals 36.1 million tons. This represents a world-market share of 65 %. Oerlikon has been represented in China since 1965 and has directly profited from this growth as a supplier to the country's manmade fiber industry. In 2008, only 25 % of sales made by the Manmade Fibers Segment went to China. By 2012, this had risen to 56 %. Overall, the Segment's sales rose by 67 % during this period. In response to China's important role in the manmade fiber industry, Oerlikon has gradually expanded its production capacities in the country over the years. Today, production hours are divided almost evenly between Europe and Asia.

Population growth and rising standards of living fuel demand

The textile market will continue to grow in the foreseeable future. By 2015, worldwide production is expected to rise to 92.6 million tons, and the share of manmade fibers could climb to 66 %. The driving forces behind the growing demand for manmade fibers like polyester, are continuing population growth and rising standards of living, particularly in emerging countries. In the process, there is an increasing demand not only for clothing, but also for home textiles like tablecloths, napkins, curtains and carpets. Further growth momentum comes from the desire among the world's growing middle class, to own a car: Every modern vehicle now contains about 20 kilograms of textile products, the majority of which consist of manmade fibers – from seat belts, airbags and door interiors to roof linings, tire cords and insulating matting in the engine compartment.

Last but not least, the demand for manmade fibers is continuously fueled by new applications. One area with exceptional innovation and growth potential, is the construction industry. Nonwovens used for roof insulation, geotextilies for the stability of roads, dams and walls as well as fiber-reinforced concrete are just a few of the promising applications in this area.

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About Oerlikon:

Oerlikon (SIX: OERL) is a leading high-tech industrial group specializing in machine and plant engineering. The Company is a provider of innovative industrial solutions and cutting-edge technologies for manmade fibers manufacturing, drive systems, vacuum, coating, and advanced nanotechnology. A Swiss company with a tradition going back over 100 years, Oerlikon is a global player with around 13 000 employees at around 160 locations in 34 countries and sales of CHF 2.9 billion in 2012. The Company invested in 2012 CHF 106 million in R&D, with over 1 000 specialists working on future products and services. In most areas, the operative businesses rank either first or second in their respective global markets.

About Oerlikon Segment Manmade Fibers

Oerlikon Manmade Fibers with the product brands Oerlikon Barmag and Oerlikon Neumag is the world market leader for filament spinning systems used for manufacturing manmade fibers, texturing machines, BCF systems, staple fiber spinning systems and artificial turf systems and – as an engineering services provider – offers solutions along the entire textile value added chain.

As a future oriented company, the Oerlikon Group segment's research and development is driven by energy-efficiency and sustainable technologies. With the expansion of the product range to include polycondensation systems and their key components, the company now caters to the entire process – from the monomer all the way through to the textured yarn.

The primary Oerlikon Barmag markets are in Asia, with Oerlikon Neumag's main markets in the US, Turkey and China. Correspondingly, the companies – with almost 2500 employees – have a worldwide presence in 120 countries as part of the Oerlikon Manmade Fibers network of production, sales and distribution and service organizations. At the R&D centers in Remscheid, Neumünster and Chemnitz, highly-qualified engineers and technicians develop innovative and technologically-leading products for tomorrow's world.