



# Global Textiles, Apparel, and Sporting Goods Team Technical Textiles Resource Guide



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## **Introduction**

***By Desi Jordanoff, Global Textiles, Apparel, and Sporting Goods Team Leader***

The U.S. Commercial Service's Technical Textiles Resource Guide - 2020 Edition is an important tool to assist U.S. companies with identifying new international market opportunities. The Guide provides a detailed analysis of the technical textiles sector in 10 countries, covering trends, demand, local industry associations, and events. It also includes a chart at the end of each market analysis that shows which technical textiles subsectors are best prospects for that particular market. These market reports are based on the expert observations of our U.S. Commercial Service Textiles Specialists worldwide. For additional information or technical textiles market research, please visit <https://www.trade.gov/get-industry-updates-textiles-apparel-and-sporting-goods>.

Please note in the Guide that we have tried to include as much information as possible pertaining to U.S. exports of technical textiles to the featured countries. Some country reports may include more information regarding U.S. exports than others, but all focus on best-prospects for U.S. exporters of technical textiles. These and additional best-prospects are included in section 8 of each report, "Market Opportunities". However, if you see an opportunity listed elsewhere in the report that is not listed in the "Market Opportunities" section, please reach out to our Team for more information on the possible opportunity. Finally, in some cases, there are no technical textile events or trade shows in-country, and our Specialists have listed shows and events in nearby countries that are well attended by buyers from the featured country.

The Global Textiles, Apparel, and Sporting Goods Team would like to acknowledge the contributions of our Commercial Specialists in Brazil, Czech Republic, France, Germany, India, Japan, Portugal, Slovakia, Turkey, and the UK. This Technical Textiles Resource Guide would not be possible without their efforts. Thank you to all our colleagues who contributed to this guide.

A special thank you to our Sub-Team Lead for Technical Textiles, Stephanie Bethel, for gathering the reports, editing, and formatting the Guide.

Thank you all for your hard work.

### **Introduction to Technical Textiles**

Technical textiles are defined as textile materials and products manufactured primarily for their technical performance and functional properties, rather than aesthetic and decorative characteristics. Technical textiles are high-performance textiles with special functionalities used in various industries, including automotive, personal care, hygiene, agriculture, home care, construction, aerospace, protective gear, healthcare, and others. The wide applicability of technical textiles is a major factor fueling the market growth.

According to a report from Data Bridge Market Research, the global technical textiles market is projected to reach USD \$220.37 Billion by 2022, an estimated 5.89% growth from 2017. Growing awareness of the superior functionality and application of technical textiles leads to higher consumption of these and related products.

Growth in the automobile, construction, healthcare, packaging, and other sectors has generated new opportunities for the technical textiles sector. Increased penetration of technical textiles in these industries is the key driving factor boosting the sector's market growth. Also driving growth is the fact that technical textiles have wide applicability across multiple industry segments. Technical textiles have various applications in crop protection, automotive applications, safety components, healthcare, protective clothing, and more, and the technical textiles market is currently expanding in various industries such as packaging, sports, and protective wear.

Mergers and acquisitions, expansions and investments, agreements and partnerships, and new product launches are some of the major strategies adopted by the key players operating in the global technical textiles market.

### Market Segmentation

The global technical textiles market is divided into four segments by process, material, application, and technology.

#### 1. By Process

The sub-segments or technical textiles in this category are: Knitted, Nonwoven, Woven, and Other.

- Nonwovens are used for various purposes such as covers, carry bags, thermal insulation, ballistic protection, fireproof layers, etc. These materials are usually manufactured with polypropylene, which provides properties such as strength, elasticity, and thermal insulation. The increase in technology and incorporation of polypropylene is fueling the demand for nonwoven fabrics in industries such as automotive, construction, chemicals, and garments. Growing demand for polypropylene in nonwovens is anticipated to propel the overall growth of the technical textiles market.
- Based on process, the woven segment is expected to be the fastest growing in coming years, mainly due to factors such as ease of production and low cost.
- Woven textiles have wide applications in various sectors such as construction, clothing, automobiles, and others. It is expected that with the growing demand for technical textiles in these industries, the demand for the woven segment will also increase.

#### 2. By Material the market is segmented by:

- Regenerated fiber - rayon and acetate;
- Mineral - asbestos, glass, and ceramic fiber;
- Synthetic polymer, natural fiber, metal, high performance fiber and others - polyethersulfone, polyacrylonitrile, polypropylene, polyester, and others.
- Natural - cotton, wool, silk, sisal, flax, and others.
- High performance fiber - aramid, carbon, UHMW polyethylene, and others

#### 3. By Application the market is divided into twelve segments:

- **Geotech** - agro-based geotextiles and geosynthetics.
- **Oekotech (echotech)** - use of technical textiles in environmental engineering and landfill waste management (geosynthetic products to secure landfills against leakage of municipal or hazardous waste); secondary protection in chemical/oil industries (ground covers and around process tanks as secondary containment for tank leaks).
- **Mobiltech** - technical textiles used in automobiles, aircraft, railways, and shipbuilding, such as nylon tire cord fabrics, seat cover fabric/upholstery, seat belts, cabin filters, tufted carpet, helmets, insulation felts, automotive interior carpets, sunvisors / sunblinds, headliners, airbags, seat belt webbing, car body covers, airline disposables, aircraft webbings, and others. The automotive sector has been improving its existing market share and creating innovative products through new developments, consequently increasing the demand for technical textiles. The applications of technical textiles in the automotive sector are expected to grow the most and to drive the market for technical textiles in the future.
- **Indutech** - industrial brushes, paper making fabrics, filtration products, computer printer ribbon, printed circuit boards, composites, ropes & cordages, coated abrasives, AGM glass battery separators, bolting cloth, cigarette filter nods, drive belts, and conveyor belts.
- **Packtech** - leno bags, wrapping fabric, jute hessian and sacks, soft luggage products, tea bag filter paper, woven sacks, and others.
- **Sportech** - tents, swimwear, footwear components, sports nets, sleeping bags, hot air balloons, parachute fabrics, artificial turf, sports composites, and others.
- **Protech** - high altitude clothing, ballistic protective clothing, fire retardant apparel, high visibility clothing, industrial gloves, and others.
- **Buildtech** - architectural membranes, floor & wall coverings, scaffolding nets, awnings & canopies, HDPE tarpaulins, signages, and others.

- **Agrotech** - anti-hail/bird protection nets, finishing nets, crop covers, mulch mats, shade nets, and others. Given the increasing awareness of the environment and the specific knowledge of the various interdisciplinary technologies, special attention has been paid to unconventional technical applications, such as the use of textile structures in the agriculture and horticulture sectors to increase the quality and efficiency of agriculture and food products in terms of ensuring a healthy environment, social economic equity, and a profitable economy.
  - **Homotech** - furniture fabrics, fiberfill, stuffed toys, blinds, mattress and pillow components, carpet backing cloth, mosquito nets, vacuum cleaner filters, and others.
  - **Clothtech** - zip fasteners, umbrella cloth, sewing threads, interlinings, labels, elastic narrow fabrics, shoe laces, and others.
  - **Meditech** - surgical dressings, contact lenses, artificial implants, baby diapers, incontinence diapers, sanitary napkins, surgical sutures, surgical disposables, and others.
4. **By Technology** the market is segmented into six segments; spinning, weaving, knitting, finishing, nanotechnology, and others.

### **Technical Textiles Trends and Innovation**

Futuristic technical textiles used in planes, cars, and firefighters' uniforms may seem a world away from everyday apparel, but there's plenty of opportunity for crossover. More science than art, technical textiles can be anything from innovative components for sneakers to the carbon fiber reinforced plastics that make up about a fifth of an average airliner.

Over the past decade, wearable technology has become increasingly commercially viable. Garments used by medical specialists can check body temperature, humidity (and therefore liquid spillage), heart rate, and respiratory activity. This kind of communication is being enabled by a new generation of materials, tags, and transmitters, such as steel filaments that can be sewn or woven directly into a fabric like any other thread. They can be used to conduct heat and to transmit data.

Technical textile manufacturers are manufacturing garments that incorporate heating, lighting, and communications properties, and taking them mainstream. Heated outfits, such as ski jackets, come with more features, for example, a smartphone app that allows the wearer to set a desired temperature.

Manufacturers of technical textiles are also making advances in environmental sustainability. There are cotton color dyes that use far less water and textile blends optimized for biodegradability. More attention is being paid to end-of-product-lifecycle treatments, waste-water recovery, and reconstitution of textiles, including polyesters. Innovative ingredients are being introduced, such as cork for making yarns and fungi/mushrooms and other plants used to dye yarn at the cellular level.

### **What Can the U.S. Commercial Service Do for You?**

The U.S. Commercial Service (USCS) is the export promotion arm of the U.S. Department of Commerce's International Trade Administration. Our global network of more than 1,330 trade professionals is located throughout the United States and in U.S. Embassies and Consulates in more than 75 countries.

Whether you are looking to make your first international sale or expand your export markets to additional countries, we offer the expertise you need to assist with your international outreach to potential buyers, partners, and agents.

### **How We Can Help Your Company?**

The International Trade Administration's Textiles, Apparel, and Sporting Goods Global Team works to help connect you to foreign buyers, agents, and potential partners worldwide.

Our team can also assist with information about foreign government procurement (tender leads) and help you connect with foreign government representatives from procurement agencies abroad.

This Resource Guide is just one of the ways we can provide the information you need to set priorities and plan for promoting your products and services in foreign markets. We also offer our Virtual Trade Fair, which aims to promote your company and to connect you with foreign buyers.

For more information on how the USCS can help your company reach your export objectives, including textile and apparel-specific industry research and additional information, please visit <https://www.trade.gov/get-industry-updates-textiles-apparel-and-sporting-goods> and contact your local U.S. Commercial Service office.



## **Brazil**

Capital: Brasilia

Population: 209.3 million

GDP: \$3.456 trillion

Currency: Real (R\$) (BRL)

Languages: Portuguese

### **1. Summary<sup>1</sup>**

Nonwoven fabrics are broadly defined as a sheet or web structure bonded together by entangling fiber or filaments mechanically, thermally, or chemically. They are engineered to be absorbent, liquid repellent, resilient, stretchable, soft, strong, flame retardant, washable, cushioning, filtering, bacterial resistant, and sterile. Familiar products made with nonwovens include: disposable diapers, synthetic leathers, wipes, fabric dryer-sheets, clothing interlining, carpet backing, furniture upholstery, filtration media, roofing products, tea bags, sanitary napkins, medical wraps and drapes, automotive headliners and upholstery, insulation and geotextiles.

Technical textiles are textile products that require specific or special functionality. For example, textile products used in industries such as aerospace, military, marine, medical, construction, geotextile, transportation, and high-technology applications.

#### **Nonwoven and Technical Textiles in Brazil**

The market has been growing considerably due to a variety of factors, including the modernization of local industries and technical development in the textiles sector. These factors have improved Brazilian access to export markets.

There are currently about 822 companies in Brazil manufacturing nonwoven and technical textiles. Over the next few years, most of these will have to make significant adjustments in order to face new competitive pressures and a changing marketplace. In particular, there is a trend for Brazilian local manufacturers to become more specialized in order to face inexpensive, good quality Asian imports. This factor may present U.S. exporters of equipment with interesting opportunities. In particular, many of these Brazilian firms are increasingly seeking to form joint ventures or enter into technical agreements with foreign companies. Most of this investment will be in new technologies.

The exportation of state-of-the-art technologies and new nonwoven and technical textile products represents an excellent opportunity for U.S. firms. According to the Brazilian Industry Association of Nonwoven and Technical Textiles (ABINT), the Brazilian market for this sector generated more than US\$ 3 billion in revenue last year. Sales volumes have increased an average of 4% per year since 2013, and the expectation is a 6.6% increase per year until 2020. ABINT estimates that 71% of all nonwovens and technical textile sales in South America are consumed in Brazil.

## 2. Market Entry and Barriers

According to end-users, the most important competitive factors in supplying equipment to this sector are:

- Price.
- Sales terms / financing.
- Quality.
- After sale technical assistance

## 3. Current Market Trends and Demand

Brazilian companies import both raw materials and equipment related to nonwovens and technical textile manufacturing.

The raw materials most frequently exported to Brazil are:

- Synthetic fibers
- Polyester
- Nylon
- Acrylic

Brazilian firms also import the following types of equipment:

- Carding machines
- Nonwoven layering apparatus
- Needle felting machines
- Winders
- Parts and accessories

## 4. Local Resources/Contacts and U.S. Commercial Service Contact Information

Brazilian Association of Nonwovens and Technical Textiles Industries (ABINT)

The Brazilian Association of Nonwovens and Technical Textiles Industries (ABINT) plays an important role in the sector. ABINT was established in 1991, and represents companies which manufacture, supply products and equipment, and trade nonwovens. It also promotes the sector's development through R&D, technical missions, and seminars and classes for professionals. The Association participates very effectively on determining technical rules for the sector. There are six committees within ABINT, and one commission that works with the Brazilian Association of Technical Standards (ABNT).

The six committees are as follows:

- CTA – Agribusiness Technical Committee
- CTDH – Disposable Hygienic Technical Committee
- CTG – Geosynthetic Technical Committee
- CTCC – Footwear and Components Committee
- CTW – Wipes Technical Committee
- CTH – Medical-Hospital Committee

For more information about export opportunities in the textile and apparel sector, contact U.S. Commercial Service Commercial Specialist [denise.barbosa@trade.gov](mailto:denise.barbosa@trade.gov), or the Standards Attaché [Sarah.cook@trade.gov](mailto:Sarah.cook@trade.gov).

With its team of industry sector experts, the U.S. Commercial Service can assist U.S. exporters in gaining entry into the Brazilian market through market research reports, matchmaking services, and advocacy programs. The Commercial Service has offices in Brasília, São Paulo, Rio de Janeiro, Belo Horizonte, and Recife. You can visit us at [www.buyusa.gov/brazil](http://www.buyusa.gov/brazil) or contact us at [sao.paulo.office.box@mail.doc.gov](mailto:sao.paulo.office.box@mail.doc.gov). The best way to contact the U.S. Commercial Service is through your

local Trade Specialist ([http://www.export.gov/comm\\_svc/eac.html](http://www.export.gov/comm_svc/eac.html)).

## 5. Market Snapshot

The total market for nonwovens and technical textile products is divided among disposables and durable products. Disposables represent 41% of the market as follows:

- Hygienic – 39%
- Hospital / Medical Products – 2%

Durable Products represent the other 59% of the market as follows:

- Footwear - 9%
- Civil construction - 8%
- Filtration - 3%
- Cleaning rags – 5%
- All other disposables, including products for agriculture, packaging, and carpets - 34%

### Uses and Applications of Nonwovens and Technical Textiles

- Agribusiness
- Automobiles and other vehicles
- Footwear
- Garments and clothes
- Disposables
- Packaging/cargo protection
- Sports
- Filtration
- Construction
- Inflatables
- Hospital and medical practitioner products
- Furnishings
- Household and consumer products
- Environmental protection
- Safety clothing
- Transport
- Wipes

The main end-user sectors for nonwoven and technical textiles are the household, packaging, hygienic, automotive, and building sectors, among others.



## **CZECH REPUBLIC**

Capital: Prague

Population: 10.61 million (2018)

GDP: 246.16 Billion USD (2019)

Currency: CZK (Czech Koruna)

Languages: Czech

### **1. Summary**

The Czech Republic has a strong history in the textiles industry, as the former Czechoslovakia had been a textiles and clothing industry powerhouse. In the 1990s, most of the textile companies went bankrupt as they had difficulties adjusting to the new free market economy and faced an influx of cheap imports from Asia. Needing to adapt to new market conditions, the industry went through restructuring and invested in modernization and technology. Currently, the textiles industry is experiencing an upswing, particularly in some of the niche segments like technical textiles or outdoor clothing and apparel. In 2018, Czech textiles companies sold products worth USD \$2.46 billion (CZK 56.5 bln), which represented an increase of 3 percent compared to the previous year. The growth in the industry is attributed to a focus on technical textiles used in the automotive, agriculture, healthcare, and aviation industries. Eight of the country's top ten textile producers manufacture technical textiles.

### **2. Market Entry and Barriers**

There are no major barriers to trade for technical textiles. Products from non-EU countries are subject to import duties. Customs duty rates are updated annually and are harmonized within EU countries. The import duties depend on the specific product and matching HS code. More than half of Czech company representatives can communicate in English or in German.

The best way for U.S. manufacturers and suppliers to penetrate the Czech market is to combine the benefits of the network and programs of their U.S. Commercial Service domestic office ([http://www.export.gov/comm\\_svc/eac.html](http://www.export.gov/comm_svc/eac.html).) with the extensive knowledge, industry contacts, and services of the U.S. Commercial Service at the U.S. Embassy in Prague, Czech Republic. (<https://www.buyusa.gov/czechrepublic/>). Seeking the assistance of your local U.S. Commercial Service office before exploring an opportunity in this market is highly encouraged.

### **3. Current Market Trends and Demand**

The Czech Republic has experienced solid economic growth in the last three years. The automotive industry in particular is expanding, creating opportunities for companies supplying the sector. However, the country is also facing a labor shortage. This has hindered companies from expanding production, while also creating opportunities for automation solutions for textile manufacturers.

#### 4. Main Competitors

Major competitors come mainly from European countries, but there is also competition from Asian companies manufacturing certain types of fabric. Imports from the U.S. are limited. The Czech Republic has some strong local manufacturers. Borgers from Bocholt, a producer of textile moldings, paneling, insulation, and curtains for vehicles, is a major supplier to the automotive industry with a vast presence in four locations near Plzen. Top textiles manufacturers also include Juta, which produces nonwovens for the building products and agriculture industries and diaper producer Pegas Nonwovens/PFNonwovens.

#### 5. Opportunities

Czech textile companies are challenged with a low unemployment rate and growing wages in the country. As companies face a shortage of workers, more are planning investments in automation than in the past, which creates additional opportunities for manufacturers of automation products for the textile industry.

##### A) Nonwovens

The Czech Republic has a strong base in the automotive industry. There are three major automobile manufacturers present in the Czech Republic - Skoda Auto (Volkswagen group), which is based in Mlada Boleslav; Hyundai Motor Company (Korean automobile manufacturer); and the joint venture of Toyota, Peugeot, and Citroen (TPCA), which is based in Kolin. The presence of major car manufacturers in the country has attracted a number of automotive products suppliers and has created opportunities in this segment.

##### B) Specialty and Industrial Fabrics

The Czech Republic is one of the most developed industrialized economies in Central and Eastern Europe. In addition to opportunities in the automotive sector, the Czech Republic also has a strong foothold in machinery, iron and steel production, metallurgy, chemical production, electronics, transport equipment, textiles, glass, ceramics, defense, and pharmaceuticals. This strong industrial base creates additional opportunities for specialty and industrial fabrics manufacturers.

##### C) Medical Textiles

While the healthcare sector in general offers very good opportunities for innovative U.S. products, strong competition exists for consumables such as hospital linens or bandages. The best opportunities exist for innovative medical products and biotextiles.

##### D) Protective Apparel

The Czech Republic offers good opportunities in the protective apparel segment, although suppliers to firefighters and other special units sometimes go through rather challenging tenders. The protective apparel segment with the most potential is apparel for outdoor activities and cycling.

##### E) Smart Fabrics

The Czech Republic is very active in the development of smart fabrics as well as nanomaterials. In the future, strong demand and opportunities are potentially expected to increase in this segment.

#### 6. Trade Events

The key trade fair for the textiles industry is Brno fairs KABO & STYL taking place biannually in February and August (<https://www.bvv.cz/styl-kabo>). Some technical textiles are also featured at the fall Brno International Engineering Fair (<https://www.bvv.cz/msv>). Czech companies often visit international fairs – mainly in Germany – for example Techtextil Frankfurt (<https://techtextil.messefrankfurt.com>).

## 7. Local Resources/Contacts and U.S. Commercial Service Contact Information

- Association of Textiles-Clothing-Leather Industry (ATOK) - <http://www.atok.cz>
- Clutex – Technical Textiles Cluster - <http://www.clutex.cz>

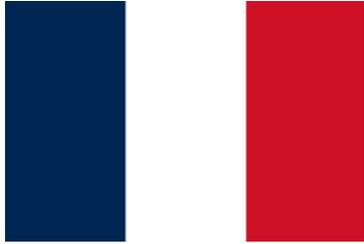
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Website: [www.export.gov/czechrepublic\(en\);www.buyusa.gov/czechrepublic\(cz\)](http://www.export.gov/czechrepublic(en);www.buyusa.gov/czechrepublic(cz))

## 8. Market Snapshot

### Rating Definitions

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Category	Score
Nonwovens	3
Geotechnical Textiles	3
Specialty and Industrial Fabrics	3
Upholstery	3
Padding for Cushions and Upholstery	2
Carpet Backing	3
Automotive Textiles	4
Disposable Clothing (coveralls; foot covers)	3
Parachutes and tenting	3
Medical Textiles	3
Biotechnical Textiles	3
Protective Apparel	3



## France

Capital: Paris

Population: 67 Million (2019)

GDP: 2.583 trillion USD (2017)

Currency: Euro

Language: French

### 1. Summary

Since 1960, the technical textiles market in France has grown five times faster than the traditional textiles market. In 2000, the French technical textiles market consumed nearly a quarter of global fiber production and today it consumes one third, with a global tonnage of fiber estimated at 78 million tons. In 2014, the technical textiles industry employed 27,000 people. Technical textiles exported by the United States to France represent 2% of the total imports to France.

Since synthetic fibers have replaced natural fibers in the composition of technical articles such as ropes, nets, and hygiene products, new markets have been created for textiles or technical textiles. Exceeding the performance of natural fibers, the synthetic fibers are better suited for certain uses and new applications, especially in the field of sports (parachute fabric, waterproof clothing) and can even replace leather in many items.

France is the second largest producer of technical textiles in Europe after Germany, but ahead of countries with a strong traditional textile sector, such as Italy and the United Kingdom. With a turnover of around 4 billion euros (source Euratex), these textiles, whose annual growth is estimated at 3% by the firm David Rigby, already account, in France, for more than 30% of total textile production.

Objective features and performance are the essential characteristics of technical textiles, unlike in traditional textiles, where aesthetics and fashion are the essential characteristics. They have won their place and are increasing their presence in almost all industrial sectors, from automotive to medical, civil engineering to construction, and electronics to aeronautics, etc. They are in automobile seat coverings, nets, pavilions... or not visible such as in filters for gasoline and air in vehicles, airbags, tire reinforcements, or composite materials. However, fashion and technical textiles are not mutually exclusive. In professional and protective clothing for firefighters, personnel handling toxic chemicals, and the military and police, performance is essential, but comfort and aesthetics cannot be overlooked. Performance textiles, such as those intended for the clothing of professional athletes, and functional fabrics and clothing (bacteriostatic, temperature regulators, on-board electronics vectors...) also must meet aesthetic and fashion criteria.

## 2. Market Entry and Barriers

There are no major barriers to trade for technical textiles. Products from non-EU countries are subject to import duties. Customs duty rates are updated annually and are harmonized with EU countries. Import duties depend on the specific product and matching HS code. However, the best way for U.S. manufacturers and suppliers to penetrate the French market is to partner with a local licensing or joint venture partner.

Using an agent or a distributor might also be a possibility. Companies wishing to use distribution need to ensure that the agreements they put into place are in accordance with EU laws and member state national laws. Council Directive 86/653/EEC establishes certain minimum standards of protection for self-employed commercial agents who sell or purchase goods on behalf of their principals. The Directive establishes the rights and obligations of the principal and its agents, the agent's remuneration, and the conclusion and termination of an agency contract. It also establishes the notice to be given and indemnity or compensation to be paid to the agent. U.S. companies should be aware that, according to the Directive, parties may not derogate from certain requirements. Accordingly, the inclusion of a clause specifying an alternate body of law to be applied in the event of a dispute will likely be ruled invalid by European courts.

Establishing an office in Europe, whether a subsidiary or a new business, requires knowledge of the relevant national legislation in the country of interest.

## 3. Current Market Trends and Demand

According to the most recent Polaris Market Research report, the global market for technical textiles is expected to grow at an average annual rate of 3.5% between 2018 and 2026.

The market has evolved continually in terms of technologies, applications, innovation, and product performance. Much of the demand for these products comes from several end-use industries, including sports equipment and sportswear, automobiles, construction, environmental protection, health care, clothing, packaging, and agriculture.

	Asia	America	Europe	France
Consumption in 2012	€ 39 billion	€ 24 billion	€ 20.5 billion	€ 5 billion
Growth rate per year since 2005	4.1%	2.8%	2.8%	3%

## 4. Main Competitors

France is known for its technological innovation, including innovation in the field of technical textiles. French manufacturers of technical textiles are well-established and include such small- to medium-sized enterprises (SMEs) as Laroche (nonwovens), Superba (tissue treatment), Calemar / Decoup + (cutting, making), and ECC / Platt (card fittings). The most prominent large companies on the stock market include NSC (spinning and nonwovens), Lectra (cutting, confection), and subsidiaries of international companies such as Rieter (nonwovens and yarn treatments) and Stäubli (weaving).

According to the Union of Textile Materials Manufacturers from France, the top 30 French manufacturers have an annual turnover of approximately € 1 billion, employ 4000 people, and export more than 90% of their fabrications.

Major competitors are mostly German and have an excellent reputation for their technical textiles. Demand and competition are concentrated in developed countries such as the United States, China, and Germany. Furthermore, the increasing industrialization and development of emerging countries, particularly in the Asia-Pacific region, is driving growth. The market has evolved constantly in terms of technologies, applications, innovation, and product performance.

## 5. Opportunities

The technical textiles industry is complex and operates across many industries. This is due to the fact that textile materials contribute to the manufacture of many products, thanks to their intrinsic properties.

New textile materials are often created in collaborations between industry sectors. These materials will help develop the new applications of tomorrow.

Most of the demand for these products comes from end-use industries, such as sports equipment and sportswear, automobiles, construction, environmental protection, healthcare, protective clothing, packaging, and agriculture.

### A) Sports Equipment and Sportswear

Sports are a favorite pastime of the French. More than one in four people rank sports at the top of their hobbies, in front of reading, television, or music.

Cumulative sales turnover shows increased demand in this subsector, particularly with regards to apparel and footwear. Growth driven by the boom in running has increased shoe sales, which account for more than 60% of sporting goods sales volumes worldwide. Shoes, clothing, and sports equipment are becoming more and more innovative and are a major component of the technical textiles market.

### B) Automotive/Transportation

In the transportation sector, technical textiles play a major role, thanks to their high mechanical performance combined with low density. Reinforcing composite materials with textiles makes them competitive or even superior to traditional materials.

### C) Construction

In engineering structures and buildings, technical textiles now compete with traditional materials (wood, concrete, steel). Used alone or in the form of composites, they provide weight savings, improved durability, and increased performance.

### D) Healthcare

This sector is constantly evolving at all levels: dressings that can kill bacteria by contact, development of antimicrobial-treated clothing (a new market, but growing 15% per year according to Textile Intelligence), woven or nonwoven barriers, etc. However, the most important expected developments are the creation of bio-communicating tissues and hybrid tissue.

### E) Protective Clothing

Although protective clothing is primarily used by specific occupations such as firefighters, the military, or police, it is also important for many people working in the chemical, metal, and construction industries. Functional garments and under garments made for these professions need to meet current safety standards. The development of clothing must meet the protection requirements and even users' appearance and fashion preferences (postal workers, rail transport companies, aviation companies). The French products available in this area are varied and encompass the entire sector: fibers, threads, fabrics, and breathable membranes.

### F) Agriculture

As an important agricultural country, in terms of the quantity, quality, and prestige of its products,

France offers a varied domestic market to producers of technical textiles. Beyond current and wide-spread applications, such as strings and ropes, a large range of agrotexiles with high technology are being used to protect and activate crops (vegetable, horticulture, fruit and wine - growing industries).

**G) Industrial**

Technical textiles are used in many industrial processes. They offer a true textile solution to filter, convey and transport, transmit power, isolate, reinforce, seal, cut and grind.

**6. Trade Events**

**Avantex**

February 10-13, 2020

Paris, France

<https://avantex-paris.fr.messefrankfurt.com/paris/en.html>

**International Business Convention for Technical Textile Materials (CITEXT)**

May 2020

Troyes, France

<http://www.citext.fr/en/>

**7. Local Resources / Contacts and U.S Commercial Service Contact Information**

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Position: Trade Advisor

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Phone: +33(0) 1 43 12 71 98

**8. Market Snapshot**

**Rating Definitions**

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Agro-textiles	3
Construction textiles	3
Clothing textile	3
Geotextiles	2
Medical textiles	4
Industrial textiles	3
Textiles used in transport	3
Ecological protection textiles	2
Protective textiles	3

Sports textiles	4
Packaging textiles	3

Sources:

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<https://www.modeintextile.fr/croissance-marche-textiles-techniques-quelques-tendances-chiffrees-2/>

[https://www.eventseye.com/fairs/zst1\\_trade-shows\\_europe\\_technical-textiles.html](https://www.eventseye.com/fairs/zst1_trade-shows_europe_technical-textiles.html)

<https://www.technical-textiles.net/events/forthcoming-events-list>

[https://www.entreprises.gouv.fr/files/files/directions\\_services/secteurs-professionnels/etudes/textileF.pdf](https://www.entreprises.gouv.fr/files/files/directions_services/secteurs-professionnels/etudes/textileF.pdf)

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<https://www.diatex.com/market-sectors/protection-defense/>

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<https://www.int-team.com/en/the-renewal-of-the-french-textile-industry-technical-textiles/>



## Germany

Capital: Berlin

Population: ~83.0 Million

([https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/01/PD19\\_029\\_12411.html](https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/01/PD19_029_12411.html))

GDP: 3.996 trillion USD (<https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>)

Currency: Euro

Languages: German

### 1. Summary

The technical textiles industry continues to grow in Eastern and Western Europe, with Germany regarded as Europe's market leader. With this growth in the sector, Germany has become the fourth largest market for U.S.-produced technical textiles, following only Mexico, Canada, and China, consecutively. The global growth rate for the technical textiles market is about 4% per year and the market is the fastest-growing industry in Germany. Germany hosts about 600 textiles companies with 20 employees or more and 50% of all textiles companies are technical textiles producers, creating a turnover of around USD \$7 billion. Increasing growth in the technical textiles market can be attributed largely to the nonwovens segment, which continues to show exponential growth: from USD \$33 billion in 2015 to USD \$42 billion in 2017. Where there was previously a decrease in demand for textile-reinforced fiber composites in countries like France and Spain, in Germany and Great Britain there was a considerable increase in production. A strong demand for composites in buyer sectors such as vehicle construction, wind energy, and aviation will lead to further growth in technical textiles. According to Commerzbank, the annual figure should be a 2% increase in overall technical textiles in Germany alone.

The top sectors for technical textiles include automotive, environmental, machine, and healthcare, which are consistently looking for the best, most efficient materials. Examples of the use of technical textiles include reinforcement materials made of textiles in concrete construction, medical mesh linings and artificial arteries, and textile materials used in vehicle construction. The technical textiles sub-sector saw an increase from USD \$130 billion in 2015 to almost USD \$160 billion in 2018.

### 2. Market Entry and Barriers

The best way for U.S. manufacturers and suppliers to penetrate the German market is to form strong relationships with German suppliers and distributors. Germany's many regulations and governmental procedures can be a hurdle for companies looking to enter the German market and it is suggested that U.S. companies pay close attention to, and educate themselves on, the local requirements. Examples of local requirements include complex safety standards (<https://ec.europa.eu/docsroom/documents/32006>).

### 3. Current Market Trends and Demand

The global technical textiles market is projected to continue to grow at a rate of 4% annually. The most important areas for technical textiles in Germany remain the automotive and vehicle construction sectors. Given that Germany's number one export is cars, with a 2018 value of USD \$154.7 billion, the technical textiles sub-sector will continue to do well in Germany. Niche markets are starting to gain significance as

well, as research in these areas increases, with Germany hosting a network of 16 textiles research institutes. Niche markets include areas such as geotextiles, ecotextiles, and bionics.

<https://texpertisenetwork.messefrankfurt.com/frankfurt/en/list/technical-textiles/fabrics-with-lots-of-potential.html>.

#### 4. Main Competitors

The technical textiles market in Germany is highly competitive, given the myriad uses for technical textiles and the high quality of products provided.

#### 5. Opportunities

##### A) Nonwovens

The nonwovens sector is the driving force behind the growth of the technical textiles market and will continue to be a lucrative area for technical textiles. Nonwovens can be found in medical textiles, car interiors and carpeting, geotextiles, and reinforceable textiles.

The automotive and vehicle construction industry is a major market for textiles in Germany. Technical textiles will continue to play a major role in this industry as it is one of the most important buyer areas.

##### B) Specialty and Industrial Fabrics

Industrial materials and reinforcement textiles within the technical textiles sub-sector are growing in popularity as they begin to find more application areas and supersede conventional materials. As research continues, this area is expected to show exponential growth.

##### C) Medical Textiles

The medical textiles market in Germany was valued at USD \$1.85 billion in 2018 and is projected to show significant growth in the future. Medical technical textiles include diapers, wipes, adult sanitary products, medical mesh lining, implants, and artificial arteries.

#### 6. Trade Events

##### **Apparel Textile Sourcing Germany**

September 9-11, 2020

Estrel Berlin

This event showcases the German market and works to connect it to the global supply chain through networking, workshops, and seminars.

##### **Heimtextil**

January 12-15, 2021

Frankfurt am Main

This event showcases an array of home and contracting textiles focusing on interior textiles, designs, and trends.

##### **Techtextil Trade Fair**

May 4-7, 2021

Messe Frankfurt

This event showcases the entire spectrum of technical textiles and nonwovens, displaying a multitude of

products as well as their application areas.

## 7. Local Resources/Contacts and U.S. Commercial Service Contact Information

U.S. Commercial Service: <http://www.buyusa.gov/germany>

Germany Trade and Invest GTAI

Hessen Trade and Invest HTAI

## 8. Market Snapshot

### Rating Definitions

1 Little to no probability of success for U.S. exporters

2 More challenges than opportunities

3 More opportunities than challenges

4 Very high probability of success for U.S. exporters

Category	Score
Nonwovens	3
Geotechnical Textiles	3
Specialty and Industrial Fabrics	3
Upholstery	3
Padding for Cushions and Upholstery	3
Carpet Backing	3
Automotive Textiles	3
Disposable Clothing (coveralls; foot covers)	3
Parachutes and tenting	3
Medical Textiles	3
Biotechnical Textiles	3
Protective Apparel	3



## India

Capital: New Delhi

Population: 1.3 billion

GDP: \$2.9 trillion

Currency: Indian Rupees (INR)

Languages: Hindi, English, etc.

### 1. Summary

The Indian technical textile market is expected to experience substantial growth from the year 2016 to 2024. The demand for technical textiles is driven by rapid industrialization, robust growth in construction and infrastructure projects, an increase in automobile production, and rising demand from the healthcare sector. In addition, another key driver is the favorable government policies that have been implemented in recent years.

To boost Prime Minister Modi's "Make in India" initiative, the Government of India (GOI) has been implementing and adopting various financial incentives for manufacturers. The GOI is making substantial budgetary allocations and is establishing Centers of Excellence (COEs) to provide support infrastructure for testing, training, and other services for manufacturers of technical textiles.

Consumption of technical textiles in India only amounts to three percent of the total world consumption. However, the demand is increasing at a higher rate as compared to most developed countries. Currently, the technical textile industry's share of the total GDP of India is estimated at 0.75 percent. The sector contributes roughly 12 percent to the Indian textile industry, an insignificant share in comparison to other developing countries, such as China, where the technical textiles industry accounts for around 20% of the textiles sector.

The technical textiles sector in India has large, small, regional, and multinational players. The sector also is comprised of several unorganized units. Technology used by small- and medium-sized production units is mostly traditional.

Technical Textiles Manufacturing Across India:

- **Gujarat** is the hub of technical textiles and a market leader amongst Indian states in the manufacturing of manmade textiles, such as geotech, aggrotech, protech, packtech, and clothtech products and non-wovens.
- **Maharashtra** is the other important state, which excels in the manufacturing of various industrial textiles, aggrotech, sportech, buildtech, nonwovens, clothtech, and home tech products. The state has one of the finest technical textile institutes in India, with four centers of excellence located in Maharashtra.

- **Tamil Nadu** is a major textile hub of the country. Over the years, it has also made its mark in the technical textiles industry with many key protech, medtech, clothtech, and hometech manufacturers located within the state.
- **Karnataka** is another hub of technical textiles, with a substantial number of technical textile companies located around Bangalore. The state is a hub for medtech, sportech, and packtech manufacturing.
- **Delhi/NCR** is a major hub of technical textiles, with many key companies with operations across different segments of technical textiles located in the national capital region. The region has a concentration of mobiltech, sportech, medtech, and hometech companies.

Other than the above-mentioned key states, there are a few clusters of technical textile production:

- **Kolkata** is a major production site of jute-based technical textiles and protective technical textiles like industrial gloves and industrial specialty wear.
- **Kanpur** is the major hub for the production of tents, tarpaulins, and sleeping bags.
- **Meerut and Jalandhar** are both major clusters and production hubs of sport composites.

Comparison of technical textile imports for the years 2018 and 2019:

Sr. No.	Segments	April 2017-18 in US\$ (million)	April 2018-19 in US\$ (million)	% Change
1.	Agrotech	28.7	35	5%
2.	Buildtech	266.8	279.5	5%
3.	Clothtech	28.2	36.8	30%
4.	Geotech	227	225.4	-1%
5.	Hometech	63.5	66.8	10%
6.	Indutech	300.1	370.7	23%
7.	Medtech	77	113.7	57%
8.	Mobiltech	593.5	711.5	21%
9.	Packtech	55	51.7	-6%
10.	Protech	43.5	65.2	50%
11.	Sportech	13.7	15.4	13%
12.	Non-woven	226.2	249.2	10%
	<b>Grand Total</b>	<b>1906.8</b>	<b>2221.5</b>	<b>17%</b>

Data Source: Indian Technical Textile Association (ITTA) Analysis on Ministry of Commerce and Industry

Below is the Indian Technical Textile Association's (ITTA) analysis of the top three growth sectors:

- Clothtech (+30%) – Key Products: Umbrella cloth, taffeta, and elastic narrow fabrics
- Medtech (+57%) – Key Products: Surgical dressings, compression garments, sanitary napkins, tampons, baby diapers, incontinence diapers and adult diapers
- Protech (+50%) – Key Products: Industrial gloves, wind and rain jackets, fire retardant fabrics, NBC suits and chemical protective clothing, and bullet proof vests.

## 2. Market Entry and Barriers

Market Entry:

The Indian technical textiles market has significant potential; however, patience and persistence are essential for success. Because India is a price-sensitive market, U.S. suppliers should offer price

competitive rates to effectively sell equipment in the Indian marketplace. In addition, significant resources should be allocated for training and brand awareness, as several Chinese and European suppliers are strongly represented in the market.

U.S. companies interested in entering the Indian market are encouraged to work with their local U.S. Commercial Service office in the United States; the Office of Textiles and Apparel in Washington, D.C.; and the U.S. Commercial Service offices across India. The best place to start is your local U.S. Commercial Service office.

Creating a local presence in India is strongly advised. However, if a U.S. company isn't ready to establish a branch office or subsidiary, the better strategy is to identify and recruit/appoint a local agent, representative, or distributor to service the market. India is a large and diverse country with 22 officially-recognized languages. It is advisable to strategically consider the appointment of multiple distributors/agents to serve each geographic area of the country.

The U.S. and Foreign Commercial Service (USFCS) can help U.S. firms to identify agents and distributors through our signature Gold Key Service (GKS) program, which is offered by all seven USFCS offices in India. Due diligence is strongly recommended to ensure that partners are credible and reliable. The U.S. Commercial Service International Company Profile (ICP) service provides an unbiased background check on potential local agents and distributors. U.S. companies can also consider participating in trade fairs/shows in India. The shows attract visitors and provide a constructive platform for U.S. companies to meet with Indian buyers and technical textiles multipliers.

Market Barriers:

- High tariffs and customs duties
- Lack of basic textile knowledge by some Indian customs officials at the ports. As a result, products are misclassified, causing delays of product entry to the Indian market.
- Assessment of additional taxes and other duties to the general *ad valorem duty* rates greatly increases the cost of the product
- Lack of interest on the part of industry players to collaborate in institutional and product development
- Absence of government regulations for technical textile products, e.g. Use of harnesses for construction, mandatory installation of airbags in cars, etc.
- Not much awareness about technical textile products by both the buyer and consumers
- Shortage of skilled manpower
- Inadequate awareness about the benefits of technical textiles among end-users, primarily in sectors like medtech, agrotech and geotech, which is hindering the demand of technical textiles
- Absence of defined standards and regulations promoting usage of products made from technical textiles, which leads to insufficient demand for technical textiles
- Lack of technology/consultancy support to manufacturers of technical textiles

In addition to these challenges, there are structural issues such as a lack of infrastructure, lack of quality power, anomalies in taxation, labor policies, etc.

### **3. Current Market Trends and Demand**

The technical textiles segment is expected to become one of the fastest growing in the textile industry. The healthcare, defense, and infrastructure sectors are major drivers of the technical textile industry. Some technology-intensive products like technical textile components for baby diapers, incontinence diapers, and high-altitude clothing are mainly imported due to a lack of raw materials and manufacturing technology. Demand for specialized technical textile products is still in a very nascent stage and is expected to be the driver in the future.

The introduction of regulatory requirements, such as mandatory use of seatbelts and airbags in automobiles, flame retardant fabrics in commercial places, use of geotextiles for construction, and protective wear in the construction industry has increased demand for raw materials used for manufacturing end products. There is also a high demand for high performance fibers/filaments after the implementation of the government's "Make in India" initiative, which seeks to transform India into a global manufacturing hub.

Though conventional textile machinery is available in India, there is a significant market for imported technology and machinery. Most of the equipment is covered under the Amended Technology Upgradation Funds Scheme (A-TUFS). All machinery for the production of technical textile products has been covered under A-TUFS. Under A-TUFS, specified technical textile machinery is provided the benefit of a 10% capital subsidy in addition to a 5% interest reimbursement. Specified machinery used to produce technical textiles is covered in the concessional customs duty list of 5%. Second-hand imported nonwoven machinery and converting machinery for nonwoven products with ten years vintage and residual life of ten years is covered under A-TUFS.

According to experts, it is imperative that India attracts investment in infrastructure, technology, research and development (R&D), and standardization to meet Prime Minister Modi's "Make in India" vision. For this, India's focus will be more on R&D. The government is already promoting investment in the sector, developing attractive schemes for start-ups, and encouraging collaboration with foreign companies.

#### **4. Main Competitors**

Major competitors for technical textiles include China, Japan, South Korea, Australia, and European countries like Germany and the UK.

#### **5. Opportunities**

##### **A) MedTech**

India's medtech sector is at a nascent stage. Most of the local manufacturing is restricted to medical consumables. Imports still constitute more than 75% of the current medtech market. India is looking to improve self-sufficiency in medtech as part of the "Make in India" initiative. The rapidly expanding sector presents immense opportunities to U.S. companies.

India imports mainly diapers, sanitary napkins, surgical goods (sutures, disposables and dressings), artificial implants, and other medical supplies.

##### **B) Protech**

The defense industry is one of the largest consumers of protective textiles in India. The usage of protective textiles in defense applications comprises bullet proof vests; high altitude clothing; fire retardant apparel; space suits; as well as nuclear, biological, and chemical suits for use in research labs. Parachute fabric, sleeping bags, and tents are also mainly imported.

##### **C) Composites**

More than 41% of India's domestic consumption of composites is served by imports. This trend is driven by a strong demand among sectors such as transportation, wind energy, electrical equipment and electronics, pipes and tanks, aerospace, defense, construction, and marine products. The composites industry, also known as the fiber-reinforced plastics (FRP) industry, expects the government's "Make in India" initiative to give a big impetus to future growth.

#### **D) Geotech**

The GOI's initiatives, with increasing budget allocations for improving road and railway infrastructure, have increased the demand for geotextiles. Geotextiles are gaining popularity due to several performance and functional advantages over other materials. The construction and agriculture sectors in India are also growing at a fast pace, leading to a strong demand for flexible and permeable geotextile products. Use of geotextiles in civil engineering, due to their excellent performance and low cost, is one of the reasons for the increase in demand for geotextiles. Products like geogrids, geomembranes, drains, PVD, etc. are predominantly imported since domestic production facilities are still in the nascent stages of implementation.

#### **E) Specialty Fibers**

The Ministry of Textiles in India is seeking technology support and is in discussion with Japan and the U.S. to support the Indian technical textile industry with technology for specialty fiber and related products. Most of the market demand for technology and specialty fibers is met by imports. Aramids, fire resistant fibers, carbon fibers, glass fiber and roving, high modulus polyethylene yarn, high tenacity and super high tenacity polyester and polypropylene fibers/filaments are the main specialty fibers used in significant amounts in the Indian technical textile industry. In addition to these key specialty fibers, other specialty fibers, such as super absorbent fibers, alginate fibers, conductive fibers, etc. are also mainly imported. Major focus is given to eco-friendly products and processes.

#### **F) Technical Textile Machinery**

Essential machinery and technology for the manufacturing of technical textile products are being imported into India and there is a great opportunity for U.S. companies to enter the Indian market through joint ventures with Indian companies or Foreign Direct Investment (FDI).

### **6. Trade Events**

Show: Technotex 2020 – 9<sup>th</sup> International Exhibition and Conference on Technical Textiles

Date: August 2020

Venue: Bombay Exhibition Center, Mumbai, India

Website: <https://www.showsbee.com/fairs/71307-TECHNOTEX-India-2020.html>

### **7. Local Resources/Contacts and U.S. Commercial Service Contact Information**

- Baseline survey by ICRA
  - Ministry of Textiles – <http://texmin.nic.in/>
  - FICCI – <http://technotex.gov.in/>
  - Indian Technical Textile Industry (ITTA) – [www.ittaindia.org](http://www.ittaindia.org)
  - India Brand Equity Foundation (IBEF) – <http://www.ibef.org/>
  - TechSci Research – <https://www.prnewswire.com/news-releases/>
  - KPMG: Technical textile growth engine of Indian textiles sector
- 
- U.S. Commercial Service Contact:  
Noella Monteiro  
U.S. Commercial Service, U.S. Consulate General, Mumbai  
Phone: +91-22-26724000  
Email: [Noella.Monteiro@trade.gov](mailto:Noella.Monteiro@trade.gov)

## 8. Market Snapshot

The Indian market is dependent on imports for high-value technical textile products. Imports of technical textiles as per Indian Trade Clarification based on Harmonized System of Coding:

Sr. No.	ITC HS Codes (2017)	Description of Goods	Year 2013 -14	Year 2014 -15	Year 2015 -16	Year 2016 -17	Year 2017 -18	Year 2018 -19	CAGR 2014-19
<b>Technical textiles imports by India</b>			<b>53%</b>	<b>51%</b>	<b>50%</b>	<b>50%</b>	<b>50%</b>	<b>49%</b>	
1	87089500	Parts and accessories of the motor vehicles of headings 8701 to 8705: Other parts and accessories: safety airbags with inflater system; parts thereof	90.8	105.8	121.8	129.9	175.6	176.6	14.2 %
2	59021090	Tire cord fabric of nylon or other polyamides: others	153.0	144.3	107.5	98.7	119.8	148.0	- 0.7%
3	59031090	Other fabrics impregnated, laminated plated and coated with PVC	123.3	134.1	121.7	111.6	167.6	145.1	3.3%
4	59039090	Other fabric plated laminated coated impregnated with other plastics	152.5	151.6	155.2	155.8	172.2	144.5	- 1.1%
5	59032090	Other fabrics impregnated laminated plated and coated with polyurethane	79.	96.2	95.3	84.4	121.0	125.0	9.5%
6	59021010	Tire cord fabric of high tenacity yarn of nylon or other polyamides: impregnated with rubber	82.7	81.4	61.7	60.8	75.4	87.2	1.1%
7	70191200	Glass fibers (including glass wool): rovings	12.9	20.0	43.8	52.5	58.3	77.5	43.2 %
8	54022090	High tenacity yarn of nylon or other polyester (others and textured yarns) 206	53.0	51.4	51.0	57.7	68.5	75.0	7.2%

9	56031100	Non wovens of man-made filaments: weighing not more than 25 g/sqm	17.4	43.1	55.3	49.4	67.3	58.6	27.4 %
10	56039200	Non wovens other: weighing between 25 g/sqm and 70 g/sqm	19.7	20.9	29.3	37.7	41.9	54.3	22.5 %

Source: Department of Commerce, Government of India; KPMG Analysis

Among the ten product categories listed above, India has shown negative growth in only two product categories and increasingly depends on imports for the remaining eight product categories. India also indigenously manufactures and exports products such as airbags for automobiles (HS Code 87089500), PVC coated fabrics (HS Code 59031090, 59039090), etc. This indicated presence of existing capacities in the country.



## Japan

Capital: Tokyo

Population: 126.2 million as of August 1, 2019

GDP: 535.6 trillion yen as of March 2019

Currency: Japanese Yen

Languages: Japanese

### **1. Summary**

The key for the Japanese market is “innovative.” The Japanese apparel and textile market is basically open to U.S. products and does not have significant tariff or non-tariff barriers. On the other hand, Japan has world-class, leading technical textile manufacturers and the market is always oversupplied and extremely competitive. However, Commercial Service Japan believes that U.S. suppliers with innovative, unique, and value-added products, techniques, and services have good potential to be successful in the market.

Although there are no significant non-tariff barriers, distribution and supply channels for some industry segments are already well-developed, and it may be difficult for newcomers to enter without a Japanese partner. However, innovative products and services will help U.S. companies to find a Japanese partner who already has well-developed distribution channels.

Medical/bio textiles may have the most potential for U.S. technical textile suppliers. Japanese major textile manufacturers develop fibers for the tissue engineering and regenerative medicine (TERM) segment as well. Also, the smart fabric/apparel segment has potential for U.S. suppliers. Some Japanese manufacturers have introduced new smart textiles/apparel; however, we can say that the Japanese industry is still in the developing stage as we see many projects on developing smart textiles/apparel being undertaken between universities and industry.

Commercial Service Japan has various experts that are knowledgeable on potential opportunities in their industry sectors. We encourage interested U.S. manufactures to contact your local U.S. Commercial Service office, who can help you discuss with the Commercial Service Japan Textile Specialist the opportunities for your product.

### **2. Market Entry & Barriers**

The Japanese apparel and textile market is open to U.S. products in general and does not have significant tariff or non-tariff barriers, although some U.S. companies may find it very challenging to penetrate the market without a distributor in certain subsectors, where supply chains are well-developed. Also, there are some regulations and standards to meet. Examples of regulations and standards include:

- Harmful substances that are prohibited in household products

- Labeling requirements for apparel and textile products
- ISO/JIS standards for protective apparel
- Medical fabric and textile products may have to meet certain regulations and standards depending on the classification of the product.

#### **Harmful Substances in Household Products:**

The Law for the Control of Household Products Containing Harmful Substances prohibits several substances in clothing. The following substances have been banned for use in textile products in accordance with this law (Law No. 112 in 1973 as amended):

- Formaldehyde;
- Organomercury compounds;
- Tris (1-Aziridinyl) phosphine oxide;
- Dieldrin;
- Tris (2,3-Dibromophenyl) phosphate;
- Triphenyl tin compounds;
- Bis (2,3-Dibromophenyl) phosphate;
- 4, 6-Dichloro-7-(2,4,5-Trichlorophenoxy)
- Tributyltin compound
- Azo compounds

#### **Labeling Requirements for Apparel and Textile Products:**

Apparel imports into Japan require labeling in Japanese with symbols that are recognized in Japan. Importers/sellers in Japan are responsible for labeling and listing information on a label as required by the Labeling of Household Articles Quality Law. Required information differs based on products. For apparel, the information required includes the following:

- Type of fabric and textile yarn content, with percentage figures for lining, thread, materials, etc.;
- Care and washing instructions;
- Size in metric measurements;
- Name of manufacturer/supplier.

Interested parties can download the English-language handbook of the Household Goods Quality Labeling Act at:

[https://www.caa.go.jp/policies/policy/representation/household\\_goods/pamphlet/pamphlet\\_03.html](https://www.caa.go.jp/policies/policy/representation/household_goods/pamphlet/pamphlet_03.html)

#### **ISO/JIS Standards for Protective Apparel:**

The Japan Protective Clothing Association lists the tables corresponding to ISO and JIS standards.

[http://www.bougofuku.net/iso\\_jis/index.html](http://www.bougofuku.net/iso_jis/index.html)

#### **Medical Fabrics and Textile Products:**

Below is a brief description of the Japanese medical device classifications and registration process prepared by Commercial Service Tokyo:

“Japan’s medical device classification system is based on the Japanese Medical Device Nomenclature (JMDN) codes, which are different from U.S. and European classifications. Review processes for medical devices differ depending on the classification. Medical devices are classified by risk level into four classes (Class 1, Class 2, Class 3, and Class 4). Class 1 (lowest risk) is defined as general medical devices;

Class 2 (relatively low risk) is defined as controlled medical devices; Class 3 (relatively high risk) and Class 4 (highest risk) are defined as specifically controlled devices. General medical devices can be marketed by submitting a notification to the Pharmaceutical and Medical Device Agency (PMDA). Controlled medical devices, with established certification standards, can be reviewed by third-party certification bodies. Controlled medical devices without certification standards and specifically controlled devices must be reviewed by PMDA and approved by the Ministry of Health, Labor and Welfare (MHLW).”

<b>Class</b>	<b>Definition</b>	<b>Example</b>	<b>Regulatory Requirement</b>
Class I	General medical devices	X-ray film, stethoscope, knife, mercury sphygmomanometers, surgical nonwoven fabric, etc.	Pre-market submission of marketing notification to PMDA
Class II	Controlled medical devices	X-ray imaging device, electrocardiograph, ultrasonic diagnostic device, injection needle, Foley catheter, suction catheter, hearing aid, household massager, condoms, etc.	Pre-market certification (Ninsho) to be granted by RCB for products with established certification standards
			Pre-market approval (shonin) from MHLW based on PMDA review for products without certification standards
Class III	Specifically controlled medical devices	Radiation therapy device, dialyzer, infusion pump, artificial bone, artificial heart-lung machine, ventilator, etc.	Pre-market certification (Ninsho) to be granted by RCB for products with established certification standards
			Pre-market approval (shonin) from MHLW based on PMDA review
Class IV	Specifically controlled medical devices	Pacemaker, coronary artery stent, artificial blood vessel, PTCA catheter, central venous catheter, etc.	

### 3. Current Market Trends and Demand

According to the Japan Chemical Fibers Association (JCFA), the 2018 market showed slow recovery. Within the chemical fiber market, the market for apparel was sluggish, and the civil engineering/construction market, the automobile, and the sanitary supply markets turned to sluggish after several years of stable growth. However, we are seeing major textile manufacturers develop fibers for the

tissue engineering and regenerative medicine (TERM) segment. Also, there is active development in smart textiles and apparel. Japan signed a memorandum on research and development cooperation for high-performance fiber with France in 2014.

Considering this market status, CS Japan considers the best potential segments for U.S. companies are medical textiles, including bio textiles, and smart textiles/apparel.

#### 4. Main Competitors

Japanese manufacturers are generally good at adding functions to textiles and improving functions of textiles, such as high durability, high elasticity modulus, shock resistance, and heat resistance. Major manufacturers include Toray, Mitsubishi Chemical, Teijin, Kuraray, Asahi Kasei, and Toyobo. Below are the leading suppliers of bio textiles and smart textiles:

##### Bio/Medical Textiles

Company	Website	Product
TOYOBO	<a href="https://www.toyobo-global.com/">https://www.toyobo-global.com/</a>	<b>Hollow fiber membranes for artificial kidneys:</b> A microporous filter film excellent in filterability.
Teijin	<a href="https://www.teijin.com/">https://www.teijin.com/</a>	<b>MIRAIM:</b> A high-performance microporous membrane production. It offers high permeability, substance support and preferential segregation properties.
GUNZE	<a href="https://www.gunze.co.jp/english/">https://www.gunze.co.jp/english/</a>	<b>CHONDROVEIL™</b> : Absorbable cartilage regeneration base material made of polyglycolic acid (PGA)
TORAY	<a href="https://www.toray.com/">https://www.toray.com/</a>	<b>Toraylight NV:</b> a high flux dialyzer. It offers a higher level of removal of uremic toxins from small molecule solutes to low molecular weight proteins.
Asahi KASEI	<a href="https://www.asahi-kasei.co.jp/asahi/en/">https://www.asahi-kasei.co.jp/asahi/en/</a>	<b>Sepacell:</b> Leukocyte Reduction Filter for Platelets

##### Smart Textiles

Company	Website	Product
Teijin	<a href="https://www.teijin.com/">https://www.teijin.com/</a>	Piezoelectric fabric
TORAY	<a href="https://www.toray.com/">https://www.toray.com/</a>	<b>Hitoe™:</b> a performance material for collecting biosignals, which are weak electrical signals that we emit unconsciously from our bodies
TOYOBO	<a href="https://www.toyobo-global.com/">https://www.toyobo-global.com/</a>	<b>COCOMI® COCOMI</b> : Stretchable conductive film for smart clothing capable of measuring physiological information

Asahi KASEI	<a href="https://www.asahi-kasei.co.jp/asahi/en/">https://www.asahi-kasei.co.jp/asahi/en/</a>	<b>ROBODEN:</b> an elastic electrical wire
Kuraray	<a href="https://www.kuraray.co.jp/">https://www.kuraray.co.jp/</a>	<b>CNTEC®:</b> CNT coated conductive fiber products
MITSUFUJI	<a href="https://www.mitsufuji.co.jp/en/">https://www.mitsufuji.co.jp/en/</a>	<b>AGposs®:</b> a silver-metalized fiber on the surface of nylon <b>hamon®:</b> A Wearable biometric information management

## 5. Opportunities

### A) Nonwovens

The nonwoven market declined significantly after the financial crisis in 2009; however, it has been showing steady recovery. As for the nonwoven import market, it increased by approximately 500% in the past 18 years. As you can see in the table below, nonwoven fabrics are mainly used for medical devices/supplies and household sundry products.

Segment	Kilograms	Share
Garment	1,618,910	0.5%
Automobile	52,238,005	15.3%
Other industrial Use	66,594,518	19.5%
Civil Engineering/Construction	21,007,028	6.2%
Agriculture/Gardening	2,015,925	0.6%
Household Sundry Products	86,505,274	25.4%
Medical treatment/sanitation	93,486,723	27.4%
Others	17,284,967	5.1%
Total	340,751,350	

(Source: 2018 Yearbook of Current Production Statistics Textiles and Consumer Goods by Ministry of Economics, Trade and Industry)

### B) Specialty and Industrial Fabrics

The supply chains for the automotive and civil engineering/construction segments are well developed, so it might be difficult for U.S. newcomers to enter the market without a Japanese distributor who already has a distribution channel in the segment. If a U.S. company offers an innovative and unique product/service, they may be able to find a distributor.

### C) Medical Textiles

Although the device/product must go through clinical trials and the approval process, the medical textile segment may be the most promising for innovative U.S. medical textile devices and products. Japanese major textile manufacturers see significant opportunities in the market for the tissue engineering and regenerative medicine (TERM) segment and in the development of fabric and textile products, such as scaffolds, artificial blood vessels, and

medical textile sheets.

#### **D) Protective Apparel**

Protective apparel and fabrics have potential for U.S. suppliers. Protective apparel/fabric for anti-infection seems to have the largest market subsegment. Protective apparel, accessories, and fabric to prevent the inhalation of asbestos and dioxin are good potential imports. In addition, protective apparel/fabric for extreme cold and those for high visibility should be a potential segment for U.S. suppliers. Please note that the Japanese people are often smaller in stature than Americans; therefore, protective apparel manufacturers may need to adjust the size of their products.

#### **E) Smart Fabrics**

The segment is still in the developing stage in Japan. Japan signed a memorandum on research and development cooperation for high-performance fiber with France in 2014. There are many Japanese universities working on a project to develop smart fabrics and apparel with Japanese textile manufacturers. Although there are no statistics available to show the size of the market, the market is expected to grow significantly. As the U.S. is regarded as an advanced IT supplier, we expect the Japanese market has potential for U.S. innovative smart fabrics and apparel.

### **6. Trade Events**

INCHEM Tokyo

November 20-22, 2019

Makuhari Messe, Chiba, Japan

“INCHEM TOKYO” is a conglomerate B2B exhibition covering the latest technologies and products for chemical processing, production, and plant engineering, held in every 2 years. The 2021 dates have not been announced yet.

<https://www.jma.or.jp/INCHEM/en/index.html>

Converting Technology Exhibition 2021

January 27 - 29, 2021

Tokyo Big Sight, Tokyo, Japan

The “Neo Functional Material” show consists of a Machinery zone, Materials zone, Neo functional Materials zone, Paper / fiber zone, Composite materials zone, Material design / development solutions zone, Prototyping / Contracting zone.

[https://www.convertexpo.com/CT2021\\_brochure\\_single\\_e.pdf](https://www.convertexpo.com/CT2021_brochure_single_e.pdf)

Techtextil/Texprocess

May 2021

Frankfurt, Germany

Techtextil and Texprocess is the world’s largest trade show and conference of technical fabrics and technology. Japanese buyers, researchers and developers attend this trade show.

<https://techtextil.messefrankfurt.com/frankfurt/en.html>

### **7. Local Resources/Contacts and U.S. Commercial Service Contact Information**

Relevant technical textile trade associations in Japan include:

- Japan Chemical Fibres Association: [https://www.jcfa.gr.jp/english\\_index/](https://www.jcfa.gr.jp/english_index/)
- All Nippon Nonwovens Association (ANNA): <https://www.anna.gr.jp/eng/>
- Japan Protective Clothing Association: <http://www.bougofuku.net/english/index.html>

- Commercial Service Japan: <http://www.export.gov/japan/>  
Email: [office.osaka-kobe@trade.gov](mailto:office.osaka-kobe@trade.gov)

U.S. Commercial Service Japan  
Hirono Taki, Senior Commercial Specialist  
Commercial Service Osaka, U.S. Consulate General, Osaka-Kobe  
Phone: 011-81-6-6315-5959  
Email: [Hirono.Taki@trade.gov](mailto:Hirono.Taki@trade.gov)

*Commercial Service Japan has various industry experts. Please contact Commercial Service Osaka for an introduction to Specialists in charge of other segments, such as medical devices/products, automotive, and civil engineering and construction.*

## 8. Market Snapshot

### Rating Definitions

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Category	Score
Non-Wovens	2
Geotechnical Textiles	2
Specialty and Industrial Fabrics	2
Upholstery	1
Padding for Cushions and Upholstery	1
Carpet Backing	1
Automotive Textiles	2
Disposable Clothing (coveralls; foot covers)	2
Parachutes and tenting	2
Medical Textiles	3
Biotechnical Textiles	3
Protective Apparel	3
Smart Fabrics	3



## Portugal

Capital: Lisbon

Population: 10.0 million (Aug 2019 est.) (source: <https://www.worldometers.info>)

GDP: \$217.6 billion (2017)

Currency: EURO (EUR)

Language: Portuguese (official); Mirandese (not official, but locally used)

### 1. Summary

Portugal has a long tradition of textile and clothing (T&C) manufacturing. The T&C sector in Portugal represents 10% of national exports and is responsible for 20% of employment in the Portuguese manufacturing industry, representing 9% of its turnover and production.

The textile industry in Portugal is composed of 6,000 large, medium, and small enterprises, plus around 5,600 micro companies, all employing a total of 130,000 people. In 2018, the industry generated a turnover of € 7.2 billion (\$7.9 billion USD), exported € 5.6 billion (\$6.1 billion USD), and imported around € 4.3 billion (\$4.7 billion USD).

(source: <http://atp.pt/gca/index.php?id=233>)

Table of Value (US Dollars) of U.S. exports to Portugal:

Product Category	2016	2017	2018	YTD(JUN) 2019	2017 to 2018 (Percent Change)
5911--TEXTILE PRODUCTS ETC. FOR SPECIFIC TECH USES NESOI	156,430	237,523	428,156	184,794	80%
5903--TEXTILE FABRICS (NOT TIRE CORD) COAT ETC, PLASTICS	209,398	198,069	445,308	100,753	125%
5907—TEXTILE FABRC,COATD,ETC,THEATRCL SCENERY,BACK-CLOTHS	13,997	7,203	0	17,287	-100%
5905--TEXTILE WALL COVERINGS	8,001	0	0	9,226	n/a

5910--TRANSMSN/CONVYR BELT,TEX MAT,WHTHR/NT REINFCO, CTD	0	0	18,066	7,350	n/a
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Source: Office of Trade and Economic Analysis (OTEA), Industry and Analysis, International Trade Administration, U.S. Department of Commerce

The textile and clothing industry is one of the most important industries for the Portuguese economy, representing 10% of total Portuguese exports in 2018. Textile companies operate in all sub-sectors of the textile and clothing industry, including in the technical textile segment. Most of the companies are small- and medium-sized enterprises, all well-known for their flexibility and rapid response, know-how, and innovation. Northern Portugal is home to most of the textile companies, as well as the textile technological and research centers, CITEVE and CENTI. Some companies, specifically the ones dedicated to the manufacture wool products, are located in the central eastern part of Portugal.

## 2. Market Entry and Barriers

Portugal is regulated by EU legislation concerning the import of textiles. U.S. firms exporting to Portugal need to comply with both local Portuguese and European regulations, such as the CE mark (which applies to machinery) and REACH (which applies to raw materials). Import procedures are governed by international trade regulations and the technical specifications established and regulated by the EU.

Textiles entering any member state must comply with Textile Regulation (EU) No 1007/2011, which regulates fiber nomenclature, labeling, and marking of the fiber composition. This legislation aims to protect consumer interests and eliminate potential obstacles to the proper functioning of the internal market. For more details on this regulation, please visit [https://ec.europa.eu/growth/sectors/fashion/textiles-clothing/legislation\\_en](https://ec.europa.eu/growth/sectors/fashion/textiles-clothing/legislation_en).

All imported textiles also must be compliant with REACH- Registration, Evaluation, and Authorization of Chemicals. REACH is dated December 2006 and regulates all products entering the EU that contain chemical substances that may have a potential impact on both human health and the environment. <https://echa.europa.eu/regulations/reach/understanding-reach>

## 3. Current Market Trends and Demand

The textiles and clothing (T&C) sector is a traditional sector in Portugal, but was forced to go through several innovations to remain globally competitive. Structural changes were made in order to: produce only high quality; improve response times; innovate in design and technology; and produce less commodities and more specialized products.

This industry has the support of an active scientific and technological community, which was specifically developed for the field of non-commodity technical textiles. Presently, products that are advanced both technologically and in design are responsible for the increase in Portuguese exports and, specifically, the growth of GVA (Gross Value Added) per employee.

Despite these positive conditions, production is small, and therefore Portugal imports from several countries, namely the U.S. In 2018, imports from the U.S. of textile products for specific tech uses (HS 5911) increased 80% compared to 2017.

## 4. Main Competitors

American exporters face fierce competition in Portugal from savvy European competitors. European companies are familiar with the business culture, financing, regulations, standards, etc. In addition, they

do not face the import tariffs that U.S. companies must pay to get their products into Portugal. Some U.S. companies have also reported that they are encountering Chinese competitors in Portugal.

Major competitors in the T&C sector are Spain, Italy, China, Germany, and France, respectively, followed by India. Imports from third countries increased 21% from 2017 to 2018, while imports from EU countries decreased 1%. See table 1 below.

Table 1: Imports of T&C (Values: €1,000)

Country	2017	2018	Evol.
Spain	1.580.842	1.570.563	-1,5%
Italy	470.548	475.967	4,1%
China	236.595	314.922	33,1%
Germany	287.294	311.996	8,6%
France	289.593	283.779	-2,0%
India	220.834	243.615	10,3%
The Netherlands	168.263	152.139	-9,6%
Turkey	123.536	149.191	20,8%
Pakistan	105.410	138.976	31,8%
Belgium	128.989	105.466	-18,2%
All other countries	526.756	561.120	6,5%
UE28_Extra	959.820	1.163.967	21,3%
UE28_Intra	3.178.840	3.143.496	-1,1%
<b>TOTAL</b>	<b>4.138.660</b>	<b>4.307.463</b>	<b>4,1%</b>

Source: INE, ATP 20.03.2019

## 5. Opportunities

Imported products in 2017 and 2018 and the percentage variation:

Table 2: Imports by HC (Values: €1,000)

HC	Designation	2017	2018	Evol.
50	Silk, including yarns and woven fabric	11.261	8.240	-26,8%
51	Wool, including yarns and woven fabric	124.297	128.707	3,5%
52	Cotton, including yarns and woven fabric	583.629	577.472	-1,1%
53	Vegetable textile fibers NESOI	47.289	56.982	20,5%
54	Manmade filaments, including yarns and woven fabric	340.664	358.446	5,2%
55	Manmade staple fibers including yarns and woven fabric	291.104	291.585	0,2%
56	Wadding, felt, etc., SP yarn, twine, ropes, etc.	99.059	103.354	4,3%
57	Carpets and other textile wall coverings	74.654	73.906	-1,0%
58	Special woven fabrics, tufted fabrics, textiles for art industry	56.187	52.165	-7,2%
59	Impregnated textile fabrics	132.653	139.912	5,5%
60	Knitted or crocheted fabrics	115.994	117.780	1,5%
61	Apparel, articles and accessories, knit or crochet	1.033.587	1.103.035	6,7%
62	Apparel, articles and accessories, not knit or crochet	1.059.706	1.117.816	5,5%
63	Textile articles NESOI, needlecraft sets, worn textile articles	168.575	178.063	5,6%
	<b>TOTAL</b>	<b>4.138.660</b>	<b>4.307.463</b>	<b>4,1%</b>

Source: INE, ATP 20.03.2019

## 6. Local Resources/Contacts and U.S. Commercial Service Contact Information

Relevant textile trade associations in Portugal are:

ATP – Associação Têxtil e Vestuário de Portugal (Portuguese Textile and Apparel Association )  
Rua Fernando Mesquita, 2785 (Ed. CITEVE)  
4760-034 Vila Nova de Famalicão  
Tel: (+351) 252303030  
Fax: (+351) 252303039  
Contact: Paulo Vaz  
Diretor-Geral (General Director )  
Email: [paulo.vaz@atp.pt](mailto:paulo.vaz@atp.pt)  
[www.atp.pt](http://www.atp.pt)

CITEVE  
R. Fernando Mesquita 2785,  
4760 Vila Nova de Famalicão  
T. (+351) 252 300 300  
F. (+351) 252 300 317  
Contact: António Amorim  
President of the Board of Directors  
Email: [aamorim@citeve.pt](mailto:aamorim@citeve.pt)  
[www.citeve.pt](http://www.citeve.pt)

Associação Nacional das Indústrias de Vestuário e Confecção  
ANIVÉC/APIV (Sede)  
Av. da Boavista, 3523 - 7º  
4100-139 PORTO PORTUGAL  
Telefone: +351 22 616 54 70  
Fax: +351 22 616 54 79  
Contact: César Augusto Guimarães Fontes Araújo  
Email: [info@anivec.com](mailto:info@anivec.com)  
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## 7. Market Snapshot

### Rating Definitions

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Category	Score
Non-Wovens	3
Geotechnical Textiles	4
Specialty and Industrial Fabrics	4
Upholstery	3
Padding for Cushions and Upholstery	2
Carpet Backing	2
Automotive Textiles	2
Disposable Clothing (coveralls; foot covers)	2
Parachutes and tenting	3
Medical Textiles	4
Biotechnical Textiles	4
Protective Apparel	3



## Slovak Republic

Capital: Bratislava

Population: 5.45 million

GDP: \$201.8 billion

Currency: Euro

Languages: Slovak

### 1. Summary

Slovakia is a country of 5.4 million people and is strategically located at the geographic heart of Europe. The Slovak market is increasingly dominated by the automotive, electronics, engineering, tourism, and service industries. In addition to its strategic location and educated population, Slovakia's stable macroeconomic policies have made it a good place for U.S. exporters to do business. Slovakia adopted the euro (EUR) as its currency on January 1, 2009, becoming the 16th member of the European Monetary Union, resulting in the facilitation of trade through lower transaction costs, higher pricing transparency, and greater monetary stability. Registered unemployment nationwide dropped down from 5.9% in 2017 to 4.9% at the end of April 2019, but varies widely from region to region. All U.S. exports to Slovakia in 2018 totaled USD 408 million. According to the National Bank of Slovakia, Slovakia's economic growth will be moderate, but healthy, and mainly driven by domestic demand. Increasing wages and a low rate of unemployment will support household consumption in the future.

This report reviews the technical textiles market in the Slovak Republic. The term "technical textiles" refers to several sub-sectors including nonwovens, specialty and industrial fabrics, medical textiles, protective apparel, padding for cushions and upholstery, carpet backing, automotive textiles, disposable clothing, parachutes, tenting, and biotechnical textiles. Slovakia has traditionally been a producer of textiles along with technical textiles, but many of the producers went bankrupt in the 1990s due to cheap imports from Asia. Many abandoned textile brown field establishments still search for new foreign investors.

Imports of industrial textiles are important to Slovakia, especially for those products that are not produced in Slovakia. Industrial textiles are imported to Slovakia from Europe and Asia. The strongest competitors to U.S. exporters are Germany, Czech Republic, France, Poland, Italy, Austria, Turkey, South Korea, and China.

Table of Slovakia Import Statistics for Technical Textiles:

HS Commodity	United States Dollars			% Change
	2016	2017	2018	2018/2017
5601	5,076,991.00	5,404,696.00	8,089,558.00	49.68
5602	7,415,925.00	8,354,738.00	11,557,805.00	38.34
5603	102,846,523.00	106,317,915.00	107,209,649.00	0.84
9619	82,071,959.00	84,062,018.00	90,301,342.00	7.42
3921	178,082,566.00	200,857,079.00	227,395,948.00	13.21
5804	751,915.00	568,089.00	541,462.00	- 4.69
5806	27,036,301.00	34,812,891.00	23,826,229.00	- 31.56
5808	3,667,260.00	4,141,999.00	4,237,770.00	2.31
5809	1,019,353.00	1,232,096.00	1,346,970.00	9.32
5810	564,983.00	574,201.00	483,881.00	- 15.73
5811	523,633.00	617,798.00	865,609.00	40.11
5901	1,231,054.00	1,796,002.00	2,500,651.00	39.23
5902	32,320,868.00	35,241,962.00	38,495,216.00	9.23
5903	59,926,570.00	64,997,125.00	67,517,577.00	3.88
5904	327,471.00	446,564.00	2,173,804.00	386.78
5906	19,407,931.00	22,372,402.00	22,550,596.00	0.80

5907	3,325,580.00	3,836,641.00	3,692,625.00	- 3.75
5908	24,384.00	17,015.00	32,056.00	88.40
5909	1,555,456.00	1,383,854.00	2,345,417.00	69.48
5910	4,796,667.00	4,883,229.00	5,652,369.00	15.75
5911	35,554,925.00	32,432,938.00	31,018,300.00	- 4.36
7019	64,550,558.00	68,228,682.00	78,410,289.00	14.92

Source of Data: Eurostat

## 2. Market Entry and Barriers

The Slovak market is favorable toward the import of U.S. goods. There are no significant trade barriers or limitations on imports of technical textiles from the U.S. The customs tariff is based on the Combined Nomenclature (CN). It is an extension of the commodities nomenclature specified in the Harmonized System (HS). Imports of technical textiles do not require a license. Exceptions may apply. All purchases of this category are subject to a 20% Value Added Tax. Slovakia's import requirements are fully harmonized with the European Union's (EU) Laws and Regulations. For more information, please visit the EU Trade Helpdesk at <https://trade.ec.europa.eu/tradehelp/>.

When products enter the EU, they need to be declared to customs according to their classification in the Combined Nomenclature (CN). The CN document is updated and published every year, and the latest version can be found on the European Commission's website [https://ec.europa.eu/taxation\\_customs](https://ec.europa.eu/taxation_customs). U.S. exports to the European Union enjoy an average tariff of just three percent. All the same, U.S. exporters should consult "The Integrated Tariff of the Community", referred to as TARIC (Tarif Intégré de la Communauté), to identify the various rules which apply to specific products being imported into the customs territory of the EU. To determine if a license is required for a particular product, check the TARIC. The TARIC can be searched by country of origin, Harmonized System (HS) Code, and product description on the interactive website of the Directorate-General for Taxation and the Customs Union. The online TARIC is updated daily.

To report existing or new trade barriers and get assistance in removing them, contact either the Trade Compliance Center (<https://tcc.export.gov/>) or the U.S. Mission to the European Union (<https://2016.export.gov/europeanunion/>).

### Labeling/Marking Requirements

Products made in Slovakia or imported into Slovakia must be labeled with the CE mark (the letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity"), an EU designation indicating compliance with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). Manufacturers and exporters should be mindful that, in addition to the EU's mandatory and voluntary schemes, national voluntary labeling systems might still apply. These systems may be highly valued by consumers, and thus, become unavoidable for marketing purposes. Under the 1995 State Language Law, companies are required to mark contents of domestically produced or imported goods, product manuals, product guarantees, and other consumer-related information in the Slovak language. For more information please visit the Slovak Office of Standards, Metrology and Testing's website: <http://www.unms.sk/?home>.

### 3. Current Market Trends and Demand

U.S. companies wishing to use distribution, franchising, and agency arrangements need to ensure that the agreements they put into place are in accordance with European Union (EU) and Slovak national laws. The Slovak Commercial Code closely follows EU legislation and recognizes agents, commissioned merchants, and brokers not bound by contract. There are many agents and distributors in Slovakia competing to represent companies in a vibrant business environment. Numerous Slovak agents, distributors, and trading companies have excellent business savvy, capital resources, and experienced personnel.

The U.S. Commercial Service offers its Gold Key Matching Service (GKS) and International Partner Search (IPS) to U.S. companies seeking potential business partners or representatives in Slovakia. The IPS provides U.S. firms with a short list of pre-screened Slovak contacts that have expressed an interest in representing a U.S. firm after reviewing the U.S. company's product information. The GKS takes this a step further by arranging one-on-one business appointments with Slovak contacts when a representative from the U.S. firm visits Slovakia. Other customized contact-making services and market research are also available through the U.S. Commercial Service.

Slovakia is a founding member of the General Agreement on Tariffs and Trade (GATT) and is an original signatory to the World Trade Organization (WTO). The Slovak Government has joined the WTO Agreement on Government Procurement. Government tenders are announced and published on the Slovak Office for Public Procurement's website at <https://www.uvo.gov.sk>. The state authority is also the primary body to offer training on public procurement. Its responsibilities include legislative and regulatory authority, drafting and monitoring implementation of the Public Procurement Act, reviewing public procurement documents, conducting oversight and publishing statistics and guidance, updating online portals, and imposing financial penalties in case of Public Procurement Act violations. Since September 25, 2018, the Slovak Office for Public Procurement maintains a List of Economic Operators, which requires companies to register and meet conditions for participation in Slovak public procurement tenders. In order to register, companies must submit several documents issued by Slovak or foreign government authorities; only originals or certified copies may be submitted. If Slovak or foreign government authorities do not issue required documents, then a company may submit self-declarations (affidavits). However, the Slovak Office for Public Procurement does not accept affidavits if U.S. authorities are able to issue official documents. Many of the documents are not commonly requested in the United States and are often not readily obtainable from U.S. authorities. The U.S. Embassy Bratislava and ITA Trade Agreements Negotiations and Compliance Office are actively working with Slovak authorities to come to an agreement on what documents are acceptable.

Slovakia was one of the first Central European countries to adopt an act on public procurement. Public procurement legislation is frequently amended, and challenges remain to fair competition and eradicating corruption.

Corruption is a major challenge in Slovakia. The government's anti-corruption plan calls for a number of measures, including judicial reform, to increase the transparency and efficiency of court proceedings, but passing and implementing effective reforms is an ongoing challenge. The Ministry of Justice maintains a Register of Public Sector Partners at the following website: <https://rpvs.gov.sk/rpvs/> that is a legally established list of public sector partners and end-users of benefits. A public sector partner is a natural person or a legal entity that receives cash or a property from the state, local government, and other public sector entities above the statutory limit. In addition, all legal entities that enter into a contract, a framework agreement, or a concession contract under public procurement rules are required to be registered in the Register of Public Sector Partners.

### 4. Main Competitors

As mentioned earlier in the report, strong competition with U.S. products comes from Germany, the Czech Republic, France, Poland, Italy, Austria, Turkey, South Korea, and China.

Technical textiles are destined for end-users in a wide range of industrial sectors. Like other small countries with limited domestic markets, Slovakia relies to a great extent on imports of technical textiles. There are only two significant domestic producers of technical textiles (excluding hygiene and medical textiles) in Slovakia. They are:

**Chemosvit Fibrochem** - part of a strong chemical holding with a long tradition, Chemosvit. Its core product is a polypropylene textile and technical multifilament yarn, PROLEN®, used in various industry sectors. The plant was established in 1934. Chemosvit employs about 950 people.

**Nexis Fibers** - a producer of industrial yarns. Major end-users include companies producing airbags, tires, ropes, nets, paper machine cloths, abrasive and plastic parts, and textile production. Nexis Fibers is a company with a long tradition and has about 470 employees.

## 5. Opportunities

### A) Automotive Textiles

Vehicle parts and components is one of the best-prospect industries for U.S. exports to Slovakia. With four car manufacturers and 1.08 million cars produced in Slovakia in 2018, Slovakia was the world leader in per capita auto production for the fifth year in a row. Automotive production represents about 46.8% of Slovakia's industrial production and 35% of the country's industrial exports. In 2018, there were over 340 Tier 1 and Tier 2 auto suppliers, providing parts and subassemblies to clients throughout Europe and beyond. The further development and localization of auto suppliers should decrease car component imports in the future from 60% to 40%. Automotive production directly employs 129,000 people, while the total number of people employed in the automotive industry is 250,000. Slovakia's favorable geographic location includes proximity to 12 automobile manufacturing plants within the Slovak and the Czech Republic, Poland, and Hungary. The allocation by manufacturer is:

- VW Slovakia in Bratislava is the only plant in the world producing five car models. In 2018, Volkswagen's 14,000 local employees produced over 400,000 cars.
- KIA Motors Slovakia in Zilina employs 3,800 and produced 333,000 cars in 2018.
- PSA Slovakia in Trnava employs 4,500 and produced 352,007 cars in 2018.
- Jaguar Land Rover (JLR) in Nitra has a projected annual production capacity of 150,000 vehicles. The plant's construction began in 2016, and the first SUV Discovery model vehicles left the plant in October 2018. The factory features a special linear synchronous conveyor with electric drive/electro-induction linked to the production line, making it the first industry 4.0 automotive production facility in Europe.

The significance of technical textile consumption will continue to grow with the increase of automotive production.

### B) Specialty and Industrial Fabrics

This product category can be used in a variety of industries and applications represented in Slovakia, such as: architecture and construction, automotive and transportation, chemical processing, electronics, textiles, and the medical industry.

### C) Upholstery/Padding

This product category is used in the furniture industry. The furniture industry in Slovakia is relatively small. Domestic sales are low, and the industry is driven by exports to EU countries. The industry has a long tradition. Local production is divided into the

manufacturing of office furniture, furniture for shops, and sofa and mattress manufacturing. Top Slovak furniture producers include IKEA, Industry Decodom, and KOM Polster. A significant amount of furniture production is concentrated in small- and medium-sized enterprises.

#### **D) Nonwovens/Medical Textiles**

The nonwovens category is constantly growing due to higher demand from the principal industries supporting the local economy. This category relies heavily on imports from outside Slovakia. The main imports are from Germany, Italy, and the Czech Republic. Nonwovens are used in a wide range of industry sectors including automotive, construction, and medical and hygiene products. For instance, the increase in sales of baby diapers is stimulated by the higher birth rates seen during 2016 – 2018. The Slovak population is projected to age and live longer. Growing education about adult incontinence problems is removing stereotypes associated with the illness. More Slovak pensioners will be enjoying an active way of life, which will drive sales of adult incontinence products in the future. During the past decade, feminine hygiene products and disposable wipes experienced substantial investments in product development and innovation. Consumption of these products is rising, fueled by increasing consumer purchasing power.

#### **E) Protective Apparel**

Protective apparel in Slovakia is in high demand due to the presence of many industrial facilities throughout the country. Honeywell Safety products opened its plant in 2001. It is the only significant local manufacturer of protective apparel. Honeywell Safety has 550 employees. Its product portfolio includes protective clothing and footwear, helmets, masks, and eye shields.

#### **F) Smart Fabrics**

The category of smart fabrics in Slovakia can be challenging, as many textile production companies went bankrupt due to the influx of international textile brands represented in Slovakia.

### **6. Trade Events**

#### **Techtextil Frankfurt Messe**

May 4-7, 2021

Frankfurt am Main

Germany

<https://techtextil.messefrankfurt.com/frankfurt/en.html>

This event takes place in Frankfurt am Main, Germany. There is no tradeshow related to this industry in Slovakia or the Czech Republic. Techtextil Germany covers the interest from all the surrounding countries, including Slovakia.

### **7. Local Resources/Contacts and U.S. Commercial Service Contact Information**

There is no Slovak association specializing in the technical textiles industry. Domestic producers of technical textiles are members of the Slovak Association for Chemical and Pharmaceutical Industry: <https://zchfp.sk/>.

#### **For more information**

The U.S. Commercial Service in Bratislava, Slovak Republic can be contacted via e-mail at: [lenka.janovska@trade.gov](mailto:lenka.janovska@trade.gov), Phone: +421 2 5922 3408; or visit our website: [www.export.gov/slovakia](http://www.export.gov/slovakia) .

Source: *Country Commercial Guide published by U.S. Commercial Service Slovakia*

## 8. Market Snapshot

### Rating Definitions

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Category	Score
Nonwovens	3
Geotechnical Textiles	2
Specialty and Industrial Fabrics	3
Upholstery	3
Padding for Cushions and Upholstery	3
Carpet Backing	1
Automotive Textiles	4
Disposable Clothing (coveralls; foot covers)	3
Parachutes and tenting	1
Medical Textiles	3
Biotechnical Textiles	2
Protective Apparel	3



## Turkey

Capital: Ankara

Population: 83 million (2020)

GDP: \$743.7 billion USD (2019)

Currency: Turkish Lira (TL)

Language(s): Turkish

### 1. Summary

Turkey ranks as the world's seventh largest textiles and apparel supplier after China, Germany, Bangladesh, Vietnam, India, and Italy, with \$17.6 billion USD of exports in 2018. Turkey's major textiles trading partners are the European Union countries, mainly Germany, Spain, UK, Italy, and the Netherlands. Turkey is the second largest textile and apparel supplier to Europe after China.

During the last decade, an increasing number of Turkish textile companies have transformed their lines from mass production into higher priced and higher value-added production to remain internationally competitive. This trend has gone hand-in-hand with the growth in local demand. The wide applicability of these textiles in the automotive, construction, defense, aviation, energy, medical, and chemical industries has created a strong market for technical textiles and nonwovens. In addition, the increase in GDP per capita in Turkey has fueled demand for technical textiles and nonwovens such as disposable hygiene products, diapers, and medical textiles.

Today, technical textiles is the fastest growing segment within Turkey's textile industry, with the annual growth rate ranging between 7-12% for the last ten years. The Turkish technical textiles market is projected to grow on average of 10% annually in the next five years. Both the manufacturing volume and the variety of products are continuing to expand. There are over 650 technical textiles and nonwovens manufacturers, located mainly in the cities of Istanbul, Bursa, Gaziantep, Kocaeli, and Tekirdag. Gaziantep is the center for nonwovens, where 60% of Turkey's nonwoven manufacturing is realized. Turkey is one of the world leaders in the manufacturing of big bags/flexible intermediate bulk containers (FIBC), ranking third in world in 2018, with a share of 10%. Turkey is also an important manufacturer of tire cord fabrics and industrial yarns.

**Table 1: Turkey's Foreign Trade in Technical Textiles & Nonwovens**

(US\$ 1,000)

	2015	2016	2017	2018
<b>Total Exports</b>	1,441,436	1,477,194	1,550,143	1,830,000
<b>Total Imports</b>	1,485,969	1,594,215	1,430,010	1,691,800
<b>Imports from the US</b>	39,248	44,922	45,280	55,590 (est)

Source: Istanbul Textile and Raw Materials Exporters Association - ITHIB

In 2018, Turkey's technical textiles and nonwovens exports exceeded \$1.8 billion USD, with Germany, Italy, and the U.S. ranking as the top three export markets.

Turkey's import figures for technical textiles and nonwovens are almost as high as its exports, as local production is unable to meet total demand. In 2018, Turkey imported \$1.69 billion USD worth of technical textiles and nonwovens. China is the main supplier to Turkey, with around one-third of imports coming from this country. Bangladesh, followed by Germany and Italy are the other major suppliers of Turkey. The U.S. is also ranked among Turkey's top ten technical textiles/nonwovens suppliers, with a sales volume of \$45.3 million.

**Table 2: Turkey's Top Ten Technical Textile & Nonwoven Suppliers**

**(US\$ 1,000)**

Country	2016	2017
China	512,811	490,670
Bangladesh	146,021	145,385
Germany	134,810	129,525
Italy	131,412	129,128
India	74,493	72,240
France	67,333	69,910
USA	44,922	45,280
Egypt	42,272	40,986
Czech Republic	33,288	33,360
United Kingdom	31,737	32,200

Source: Istanbul Textile and Raw Materials Exporters Association - ITHIB

Although there is no specific definition of the technical textiles in the Harmonized Tariff System, Turkey's main technical textiles imports can be listed as below:

**Table 3: Main Product Breakdown of Turkey's Technical Textile & Nonwoven Imports**

**(US\$ 1,000)**

HS Code	Product	2016 (total)	2017 (total)	2018 (total)	2018 (from USA)
7019	Glass fibers, incl. glass wool, and articles thereof	217,616	233,755	228,549	18,365

540211	High-tenacity filament yarn of aramids	19,464	20,707	24,724	11,036
870895	Safety airbags with inflator system & parts	84,736	103,337	102,119	6,317
5603	Nonwovens, whether/not coated, covered, laminated	192,737	219,140	190,214	3,506
5911	Textile products and articles, for technical use	54,043	58,100	58,309	2,871
630720	Life jackets and life belts	3,374	2,977	2,331	2,331
5903	Textile fabrics coated, covered, laminated w/plastics	164,291	190,373	188,648	2,225
5909	Textile hose piping and similar textile tubing	887	1,259	1,922	1,922
6210	Garments made up of felt or nonwovens	425,122	132,252	40,882	1,889
540219	High-tenacity filament yarn of nylon or other polyamides	13,986	13,842	11,882	1,165
5902	Tire cord fabric of high-tenacity yarn	43,163	47,443	50,886	936
8804	Parachutes, paragliders, rotochutes	1,591	569	1,921	697
5607	Twine, cordage, ropes and cables	25,062	27,459	21,793	486
5906	Rubberized textile fabrics	21,607	26,714	27,404	462
5910	Transmission or conveyor belts of textile material	8,432	10,540	11,220	439
5605	Metallized yarn	6,891	7,755	5,685	230
870821	Safety seat belts for motor vehicles	53,336	61,995	60,210	206
5604	Textile-covered rubber thread, cord, yarn	4,252	4,615	4,756	183
5602	Felt, whether/not coated, covered or laminated	25,062	27,459	21,793	145
540220	High-tenacity filament yarn of polyesters	50,948	50,266	57,606	96

6306	Tarpaulins, sun blinds, tents, sails for boats, camping goods of textile materials	19,990	8,199	9,396	79
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Sources: 1. Istanbul Textile and Raw Materials Exporters Association - ITHIB

2. Trademap

When Turkey's top technical textiles import categories are analyzed, glass fibers and related articles have the highest value with around \$230 million USD. This is followed by nonwovens imports valued at \$190 million USD, specific kinds of industrial fabrics imports of \$189 million USD, and airbags imports of \$102 million USD. These four categories make up about half of Turkey's technical textile's imports.

## 2. Market Entry and Barriers

The best way for U.S. manufacturers and suppliers to penetrate the Turkish market is to work with a local representative/distributor who is able to explain the technical textile's usage and advantages to potential customers.

Turkey and the European Union (EU) have a customs union; therefore, Turkey implements the relevant EU regulations and standards for industrial products, machinery, and chemicals, including technical textiles and related product categories. These regulations include CE marking and REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals). The restricted hazardous substances in textile, apparel, and footwear products include azo dyes, flame retardants, and phthalates.

The Exporter Registry Form (ERF) is required in Turkey for all textiles (including technical textiles), fibers, and apparel, as well as any product containing any piece of textiles. The ERF needs various authentications and approvals, which can be cumbersome for U.S. companies not used to similar documentation.

Customs duty rates range from 3% to 10%, depending on the technical textile product, if they originate from the United States.

## 3. Current Market Trends and Demand

Turkish investments in the textiles industry are transitioning with a focus on the technical textiles category. Investments in new technical textiles facilities and production lines to renew technology and increase capacity has contributed to Turkey becoming the fourth largest textile machinery market in the world. In 2018, Turkey's textile machinery imports amounted to \$1.9 billion USD and large investments are expected to continue over the next ten years. The Turkish government provides various incentives and subsidies for new technical textiles and advanced manufacturing investments. This can provide opportunities for American technical textiles and textile machinery suppliers to engage in local partnerships.

On the R&D side, there are currently 77 textile-focused R&D centers in Turkey, a designation given by the Ministry of Industry and Technology to major companies with a minimum R&D staff of 15, and who are focused on enhancing technical fibers and textiles. In addition, as a country in accession talks with the European Union, Turkey is able to leverage EU R&D and structural funds, such as Horizon 2020 and the SmartX-European Smart Textiles Accelerator. The future success of the technical textiles industry in Turkey requires the adaption of emerging new technologies and the use of innovative fibers. U.S. companies, which have invented many of the technologies and product categories used in technical textiles today, including high-tech fibers, composite reinforcements, and smart fabrics, are well-positioned to increase their market presence in Turkey. However, it is important for U.S. companies to invest in patents and registered designs, protecting their intellectual property against copies when entering into the Turkish market.

The technical textiles subgroups with the highest growth in demand in the Turkish market are automotive/transportation textiles, textiles used in the cleaning/hygiene industries, smart textiles,

biodegradable polymers, high performance fibers, architectural membranes, 3D carbon composites, composite reinforcements and prepregs, specialty and industrial fabrics, advanced military fabrics and materials, artificial implants, and packaging textiles (bags and sacks produced for finished products packaging, including food packaging).

#### **4. Main Competitors**

U.S. technical textile companies have a strong reputation for technological know-how, strong innovation, and creating new product categories. Major competition to U.S. technical textiles comes from European countries, including Germany, Italy, France, Czech Republic, and the United Kingdom. The sales volume of products supplied from China, Bangladesh, and India is higher; however, these imports are in less advanced and lower priced product categories, where the U.S. is not globally competitive.

#### **5. Opportunities**

##### **A) Nonwovens**

The \$400 million USD Turkish nonwovens market covers almost all application fields. According to the European Disposables and Nonwovens Association-EDANA, in 2018, the main market segments in terms of volume for nonwovens were:

- hygiene (29.8%)
- wipes for personal care (12.4%)
- construction (9.5%)
- automotive (7%)
- civil engineering (5.9%)
- filtration (3.7%)
- upholstery/household (3.6%)

The filtering applications for nonwovens are rapidly gaining importance in the Turkish market with end-users seeking different levels of air permeability, filter efficiency, and pressure drop. These products are used in various air and liquid filtration markets.

More advanced and innovative nonwovens such as biodegradable, multifunctional, and nanotechnology fabrics; patterned and multi-colored nonwoven fabrics; and powder and liquid sensitive hygiene/cleaning products are among the imported nonwovens.

In recent years, nonwoven products have been commonly used in food packaging. The first uses have been for food heating, boiling, and service purposes. They are expected to form the fastest growing category within food textiles due to their hygienic and cost benefits.

##### **B) Specialty and Industrial Fabrics**

The use of all types of textile-based composites is increasing with the expectation that in the future they will replace most metal-based materials. Carbon-reinforced composites are very popular structures with their lightness and replacement of steel, and they are employed in a wide variety of products and industries, such as the development of drones, gas storage systems, waste storage systems, heat shields, brake pads, windshield wipers, sporting equipment, and similar areas. Thermoplastic coated textiles are a new growing category due to the interest in lightweight and environmentally friendly materials, particularly to be used in the aerospace and automotive industries.

Turkey is the world's second largest contractor, holding close to a 5% share of the global contractor market. This leads to a strong demand for geotextiles, to be mainly used in ground

building for isolation and stability of construction projects such as highways, subways, tunnels, and drainage systems. Advanced geotextiles and geotextile raw materials, geomembranes, and geocomposite consumption has doubled in Turkey to reach \$35 million USD in the past five years. This figure does not include the geotextiles procured by Turkish contractors for international projects.

Automotive airbags, seat belts, cables, agricultural textiles used for erosion protection, greenhouse coverings replacing conventional plastic coverings, acoustic textiles, UV-protective textiles, and sailing tents are among the industrial/specialty fabrics Turkey imports from the U.S. and Europe.

### **C) Medical Textiles**

Medical textiles with embedded devices/sensors to monitor fitness levels, heartbeat, and other vital health signs; lightweight casts; implantable textiles used for sutures, vascular grafts, and artificial veins; textiles with elastomeric yarn; textiles used in heart valves, implants, and artificial joints; bandages enabling drugs to be delivered to the body for wound healing; pharmaceutical substance-emitting fibers; innovative stents; and cell scaffolds made from microfiber membranes are among the newly developed innovative product categories offering opportunities for U.S. companies in the Turkish market.

In Turkey, medical textiles are categorized in the medical devices category for import purposes and are subject to Ministry of Health registration and approval.

### **D) Protective Apparel**

The Turkish personal protective equipment (PPE) legislation is being harmonized with the European Union PPE Regulation 2016/425 dated March 9, 2016. Although occupational safety regulations are not strongly enforced, the demand for personal protective equipment and clothing has been booming due to the new regulations. The market size of the Turkish personal protective equipment segment is forecasted as \$1.2 billion USD in 2019 by TIGIAD-Turkiye Is Guvenligi Is Adamlari Dernegi (Occupational Safety Businessmen Association of Turkey).

Most disposable personal protective clothing, such as surgical masks and protective gowns, are made of nonwoven materials. Turkey is one of the leading producers of disposable and medical products in the world. In addition to nonwoven disposable products, Turkey also manufactures reusable workwear such as firefighting clothing with flame retardant properties, anti-static protective clothing, and aluminized textiles for use against radiant heat.

Turkey imports more complex protective textiles, such as various fibers for anti-ballistic applications and fire-resistant products, heat and cold resistant gloves, respiratory products, fall arrest equipment, and NBC clothing from the U.S. and Europe.

### **E) Smart Fabrics**

Smart fabrics is a new and still niche field in Turkey. Most R&D efforts and products developed based on smart fabrics are in the defense and medical industries. Almost all related smart textile and e-textile components and wearable technologies are imported, such as wearable sensors, washable RFID threads, motion trackers, ink for conducting materials, conductive textiles, and organic photovoltaic cells. The U.S. has a competitive advantage in the supply of smart fabrics due to its leading innovations and its association with quality.

## 6. Trade Events

### Hightex 2020 International Technical Textiles and Nonwovens Trade Fair

July 14-18, 2020

Istanbul, Turkey

<https://www.hightex2020.com/index.html>

Hightex is the largest international trade fair in the Middle East and Eastern Europe showcasing technical textiles, nonwovens, technical textiles raw materials, and production technologies. This biannual fair is held concurrently with the ITM International Textile Machinery and Chemicals Fair.

## 7. Local Resources/Contacts and U.S. Commercial Service Contact Information

Relevant textile trade associations in Turkey:

- Istanbul Textile and Apparel Exporter Associations - ITKIB: <https://www.itkib.org.tr/>
- Turkish Clothing Manufacturers' Association - TGSD: <https://tgds.org.tr/en/homepage/>
- Turkish Composites Manufacturers Association: <http://www.kompozit.org.tr/en/home/>

Relevant media and news:

- Nonwoven Technical Textiles Technology Magazine: [www.nonwoventechnology.com](http://www.nonwoventechnology.com)

For more information and assistance in the Turkish market, you may contact the U.S. Commercial Service in Turkey:

Perim Akguner  
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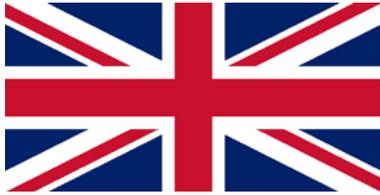
## 8. Market Snapshot

### Rating Definitions

- 1 Little to no probability of success for U.S. exporters
- 2 More challenges than opportunities
- 3 More opportunities than challenges
- 4 Very high probability of success for U.S. exporters

Category	Score
Non-Wovens	2
Geotechnical Textiles	3
Specialty and Industrial Fabrics	4
Upholstery	1
Padding for Cushions and Upholstery	1

Carpet Backing	1
Automotive Textiles	4
Disposable Clothing (coveralls; foot covers)	1
Parachutes and tenting	3
Medical Textiles	4
Biotechnical Textiles	4
Protective Apparel	3



## United Kingdom

Capital: London

Population: 66.5 million

GDP: \$2.825 trillion

Currency: Pound sterling (GBP/£)

Languages: English

### 1. Summary<sup>2</sup>

Since the industrial revolution, the UK has been a global leader in the textiles industry, which today employs over 110,000 people in textile manufacturing. Of those, approximately 7,000 are engaged in the technical textiles sector. A significant technical textiles industry has emerged in the UK in recent decades, consisting of: a number of major publicly listed companies with headquarters in the UK, operations belonging to companies whose headquarters are overseas, and a substantial tier of small- and medium-sized enterprises (SMEs) that have proven to be particularly resilient in the face of overseas competition and adept at finding profitable niche markets and applications for their products.

In addition, significant activity in technical textiles research and development is carried out in UK universities, research institutes, and specialist textiles testing companies. Textile innovation in the UK is ranked at No. 3 in the world and No.1 in Europe in terms of patents between 2000 and 2015, and ranked No.3 in the world and No.1 in Europe in International Science Citation Index papers between 2000 and 2015. The UK also remains a major center for research and development and textiles innovation.

Specialist and technical textiles are growing areas for traditional textile companies to diversify into, with many firms seeking new opportunities in higher value manufacturing. Estimates suggest that technical textiles contribute over \$2.5 billion to the UK's economy. The high value of niche manufacturers is powering increased demand, initially through offshore markets, but increasingly onshore as well. In 2017, production in the sector increased 25% on the year, with 50% of companies reporting an increase in turnover, with increased interest from overseas and more companies looking to source locally, due in part to a depreciating pound.<sup>3</sup> The vast majority of technical textile small- and medium-sized enterprises (SMEs) are located in the areas that form part of the UK's former "textiles industrial heartland", namely Greater Manchester, Lancashire, and Yorkshire, and in the regions around Leicester and Nottingham.

Technical textile products serve a number of end-use markets and industry sectors, including automotive, aerospace, composite materials, medical textiles, industrial filtration, civil engineering, biotechnology, nanotechnology, geotextiles, performance workwear, and technical/smart garments. The key sub-sectors within technical textiles in which UK companies are thriving are nonwoven fabrics; woven; warp knitted and/or stitch bonded fabrics, which form the basis for composites; and 'multi-axial' fabrics that allow

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<sup>2</sup> <http://www.neweconomymanchester.com/media/1074/alliance-report-part-two.pdf>

<http://www.ltma.co.uk/wp-content/uploads/2017/05/The-Final-Alliance-Project-Report-Oct-2012-to-May-2017.pdf>

<sup>3</sup> <https://www.themanufacturer.com/articles/fast-fashion-does-it-represent-the-future-of-the-british-textiles-industry/>

composite manufacturers to process multiple layers of unidirectional fibers, the optimum fiber form, in a single fabric and/or 3D structures.

Additionally, there are clear links to the UK's leading companies and successes in the advanced materials and composites sector, where the UK's expertise is applied in aerospace, high-performance cars, wind energy, and quickly expanding into other product areas. Despite these advances, the UK composites strategy recognizes that the technical textiles and composites sector is fragmented, resulting in coordination failures as few firms have the critical mass to invest in equipment to make structures at the speed industry requires. Another challenge is the aging workforce and diminishing availability of skills in the industry. Finally, though the exchange rate is currently working in the UK manufacturer's favor, the current uncertainty and long-term impacts of Brexit could have destabilizing effects.

## **2. Market Entry and Barriers**

The best way for U.S. manufacturers and suppliers to penetrate the UK market is to combine the benefits of the network and programs of the U.S. Commercial Service's domestic offices ([http://www.export.gov/comm\\_svc/eac.html](http://www.export.gov/comm_svc/eac.html)) with the extensive knowledge, industry contacts, and services of the U.S. Commercial Service at the U.S. Embassy in London, UK (<https://www.buyusa.gov/unitedkingdom/>). Seeking the assistance of your local U.S. Commercial Service office before exploring an opportunity in this market is highly encouraged.

Currently, U.S. exports to the UK must comply with EU barriers and regulations. Duty rates on textile and apparel products made in the U.S. are subject to the EU's Most Favored Nation rate (MFN), which is on average 9%. For the current MFN duty rates see the EU's tariff website:

[http://ec.europa.eu/taxation\\_customs/dds2/taric/taric\\_consultation.jsp](http://ec.europa.eu/taxation_customs/dds2/taric/taric_consultation.jsp). More information on product and safety standards can be found here: <https://www.export.gov/article?id=Exporting-Textiles-and-Textile-Products-to-the-EU-FAQs>.

It should be noted that the UK left the EU on January 31st, 2020. It is currently in a transition stage, ending December 31, 2020, at which point barriers to trade may change.

## **3. Current Market Trends and Demand**

While UK exports of non-apparel textiles continue to increase (worth \$3.5 billion in 2016), equally it continues to import a significant amount of textile products. Total imports to the UK in 2016 were \$6.7 billion in textiles and fabrics other than clothing. Retailers and manufacturers emphasize the growing importance of design and innovation in driving the success of the sector. However, there is no single center in the UK that brings together the different disciplines of technical textiles, advanced materials, fashion and design, and garment making. The lack of large supply chain 'Primes' also highlights an urgent need to develop stronger networks. There are several smaller textiles R&D/ innovation centers, but no major hub that brings all the different innovation assets together.

## **4. Main Competitors**

Major competitors for technical textiles include Brazil, India, China, Japan, Taiwan, Singapore, South Korea, and Germany. There are a number of UK firms that are also quite strong in technical textile production.

## **5. Opportunities**

### **A) Nonwovens**

Nonwoven textiles have a wide range of applications from hygiene to construction to filtration. There is a focus on sustainability in this market, as most nonwoven fabrics are designed to be either disposable (such as hygiene wipes) or durable (such as roofing). One major

opportunity is the growing importance of geotextiles, as well as the Dry Laid segment, which is anticipated to lead the market through 2026 due to increases in urbanization and disposable income. These materials can be prepared by a variety of combinations of materials and process variables, and as such are extremely flexible in their uses. Therefore, it is crucial to create awareness among consumers and end-users, as demand dictates the need of products. The economies of scale and competitive nature of the market favor the application-based approach of industry to specialize in certain areas.

#### **B) Specialty and Industrial Fabrics**

There are many opportunities in this sub-sector, particularly in the circular economy, with growth in engineered containment of waste materials, civil engineering, large earthworks, and industrial biotechnology. High crude oil prices combined with concerns about greenhouse gas emissions create demand for green biotech products and bio-based materials vs crude oil-based materials.

#### **C) Medical Textiles**

Advances in nanotechnology offer a new approach in healthcare materials, and there is much room for research and innovation in this area. Other opportunities include expansion and compression materials, electrically conductive textile materials for use in health monitoring garments, and textile pressure and strain sensors, used in clothing that can measure heart rate and respiratory rates.

#### **D) Protective Apparel**

Stringent regulations regarding personnel safety in Europe, and particularly in the UK, continue to drive demand for protective apparel as governments become increasingly concerned with the safety and health of workers, growing the protective equipment market at 3.54% CAGR. The protective apparel sector continues to benefit from product innovations, such as advances in smart fabrics and garments like INTERCEPT technology. The projected value for the personal protective equipment market in the UK is \$2.63 billion in 2020. However, low product differentiation has resulted in stiff competition among vendors; customers are showing high price sensitivity with very low brand loyalty.

Growing market consolidation and adoption of e-commerce are the key trends in the PPE market in the UK. Additionally, manufacturers of equipment that is worn above the shoulder level are focusing on enhancing the aesthetic appeal of products to enhance wearer compliance. Products that are stylish contribute significantly to wearer compliance. The demand for such stylized products from female workers with limited product options is also rising. So, vendors in the market are focusing on designing and developing aesthetically appealing products for such end-users, and thereby driving market growth.

#### **E) Smart Fabrics**

Recent international research work with garment and technology firms highlights further growth opportunities in smart fabrics and smart garments, integrating sensors and microchips into fashion. Increasing adoption of smart textiles across numerous end-use industries is expected to be the key driving force for the technical textiles market. It is used for personal/military protective equipment, healthcare, telecommunications, sport and fitness equipment, as well as in the automotive, energy, and aerospace sectors. Nanotechnology also plays a major role in this market.

## 6. Trade Events

### The London Textile Fair

14-15 July, 2020

London, UK

John Kelley, Event Organizer, The London Textile Fair

[john@textileevents.co.uk](mailto:john@textileevents.co.uk)

<https://thelondontextilefair.co.uk/>

## 7. Local Resources/Contacts and U.S. Commercial Service Contact Information

Relevant textile associations in the UK include:

- United Kingdom Fashion and Textile Association
- British Textile Machinery Association

U.S. Commercial Service Contact:

Sara Jones

Office: 44 20 7891 3451

Email: [Sara.Jones@trade.gov](mailto:Sara.Jones@trade.gov)

<http://2016.export.gov/UNITEDKINGDOM/>

<http://www.buyusa.gov/unitedkingdom/>

## 8. Market Snapshot

### Rating Definitions<sup>4</sup>

1 Little to no probability of success for U.S. exporters

2 More challenges than opportunities

3 More opportunities than challenges

4 Very high probability of success for U.S. exporters

Category	Score
Non-Wovens	3
Geotechnical Textiles	3
Specialty and Industrial Fabrics	3
Upholstery	3
Padding for Cushions and Upholstery	3
Carpet Backing	3
Automotive Textiles	3
Disposable Clothing (coveralls; foot covers)	3
Parachutes and tenting	3

<sup>4</sup> [https://www.trade.gov/topmarkets/pdf/Textiles\\_Top\\_Markets\\_Report.pdf](https://www.trade.gov/topmarkets/pdf/Textiles_Top_Markets_Report.pdf)

Medical Textiles	3
Biotechnical Textiles	3
Protective Apparel	2