

Flame Resistant Fabrics Market Assessment, By Type [Treated and Inherent], By Application [Apparel and Non-apparel], By Process [Woven, Knitted, Non-Woven, Others], By End-use Industry [Industrial, Defence & Public Safety Services, Transportation, Others], By Region, Opportunities, and Forecast, 2016-2030F

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Abstracts

Global Flame Resistant Fabrics Market size was recorded at 3.31 million tons in 2022, which is expected to grow to 5.53 million tons in 2030 with a CAGR of 6.6% during the forecast period between 2023 and 2030. Stringent safety regulations and industry standards significantly drive the demand for flame-resistant fabrics. Key sectors such as firefighting, oil and gas, electrical, and chemical industries necessitate adherence to these regulations to ensure the safety and well-being of their workforce. This, in turn, stimulates the demand for flame-resistant fabrics that act as a fundamental defence against fire-related risks.

Moreover, the continual growth and expansion of industries like oil and gas, where flame-resistant fabrics are crucial due to hazardous working conditions, play a significant role. The rise in exploration and production activities necessitates a consistent supply of flame-resistant apparel and protective equipment, thereby driving the market forward. Additionally, the market benefits from the increasing diversification of application areas. Flame-resistant fabrics find relevance not only in traditional sectors such as industrial and military but also in sports, motorsports, and recreational activities. This expanding application landscape further augments the demand for flame-resistant fabrics, positioning the market as an indispensable component in ensuring safety and protection across various domains.

Ongoing Rise in Defense Investments to Drive the Demand for Flame Resistant Fabrics

The heightened demand for flame-resistant fabrics within the military and defence sectors is notably attributed to the continuous growth in defence budgets across nations. Governments and defence agencies worldwide are allocating substantial resources to modernize their armed forces and ensure their preparedness due to the ongoing Russian Ukraine war. Flame-resistant fabrics are engineered to resist ignition, prevent the spread of flames, and provide a critical layer of defence against extreme heat and fire hazards. In combat scenarios or training exercises involving explosives, combustibles, or volatile environments, the deployment of flame-resistant uniforms and gear is important leading to strong demand for flame-resistant fabrics.

For instance, recent data released by the Stockholm International Peace Research Institute (SIPRI) highlights a substantial surge in defence expenditures in the United States. In the transition from 2021 to 2022, there was a remarkable increase of USD 71 billion in defence spending. This noteworthy uptick can be attributed, at least in part, to the allocation of military assistance to support Ukraine in its ongoing conflict. Such substantial investments made by various nations in the defence sector are poised to drive an increased demand for flame resistant fabrics.

Robust Performance of the Oil & Gas Sector to Heighten the Demand for Flame Resistant Fabrics

The oil and gas industry stands as a major consumer of flame-resistant fabrics, primarily owing to the inherently hazardous work environments associated with the sector. Flame-resistant fabrics provide a critical layer of defence against thermal and flame-related risks, significantly reducing the likelihood and severity of injuries resulting from accidental fires or exposure to extreme heat. The continuous growth and expansion of oil and gas exploration and production activities are major catalysts propelling the demand for flame-resistant apparel and protective equipment.

For instance, in the fiscal year 2021-22, India witnessed a 9% growth in its crude oil processing capacity as compared to the preceding fiscal year of 2020-21. This rise in oil & exploration around the world raises the number of workers associated with it, which in turn increase the demand for flame resistant fabrics for protective purposes.

Increased Sales in Automotive Sector to Raise Flame Resistant Fabrics Usage Globally

Flame resistant fabrics play a critical role in the automotive industry, finding applications in multiple areas such as vehicle interiors. Components like seating, headliners, and carpets utilize flame-resistant textiles, adhering to safety standards and enhancing fire safety within the vehicle. Moreover, the ongoing rise of electric vehicles (EVs) further emphasizes the importance of flame-resistant fabrics. As the industry adopts advanced battery technologies, flame-resistant materials play a crucial role in battery enclosures and thermal management systems, bolstering the safety and reliability of EVs.

For instance, the Society of Indian Automobile Manufacturers witnessed substantial growth in various sectors. Demonstratively, the sales of passenger cars escalated from 1,467,039 to 1,747,376 units, and utility vehicles saw a significant rise from 1,489,219 to 2,003,718 units. Furthermore, van sales exhibited an increase, moving from 113,265 to 139,020 units during 2021-2022 in comparison to the preceding fiscal year. The global surge in automotive sector sales is expected to drive the demand for flame resistant fabrics.

Impact of COVID-19

The flame resistant fabrics market experienced a significant impact due to the COVID-19 pandemic, particularly within the healthcare sector, where there was an unprecedented increase in the demand for flame-resistant fabrics used in medical applications. The surge in need for personal protective equipment (PPE) like masks, gowns, and other medical textiles skyrocketed, aiming to safeguard healthcare professionals and patients, consequently leading to a substantial rise in demand for specialized materials. Additionally, there was a heightened emphasis on the development of flame-resistant fabrics infused with antimicrobial and antiviral properties, further enhancing safety measures. These fabrics were designed for versatile application across different sectors, including healthcare, transportation, and public spaces. However, amidst the heightened demand for medical textiles, other industries employing flame-resistant fabrics, such as automotive and aerospace, faced a downturn due to pandemic-induced lockdowns, decreased consumer demand, and disruptions in manufacturing operations.

Impact of Russia-Ukraine War

The conflict between Russia and Ukraine significantly influenced downstream industries of flame-resistant fibres. Specifically, Industrial sector experienced a notable decline in sales as numerous companies halted operations in Russia, resulting in weakened demand for flame-resistant fibres. Moreover, the transportation sector's performance in

the affected regions deteriorated, further diminishing the demand for these specialized fibres. However, amidst these challenges, the escalation of defence investments and increased oil & gas exploration driven by the conflict and geopolitical instability served as a counterforce, mitigating the declining demand for flame-resistant fibres on a global scale.

Key Players Landscape and Outlook

Major manufacturers of flame-resistant fabrics are actively pursuing innovation and investing in bio-based materials. This strategic focus aims to enhance wearer well-being and contribute significantly to the sustainability objectives of these manufacturers.

For instance, DuPont had unveiled an innovative flame-resistant (FR) fabric featuring a bio-based chemical-repellent coating, elevating sustainability in protective apparel and enhancing worker safety in June 2022. Branded as DuPont Nomex Comfort with EcoForce technology, this advancement sets a new standard by delivering superior flame and chemical resistance. Moreover, it effectively addresses the growing environmental apprehensions surrounding personal protective equipment (PPE), making it a noteworthy leap towards sustainable and safer work environments.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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