Fluorinated Polyimide Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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Report description:

The Global Fluorinated Polyimide Market is projected to register a CAGR of over 70% during the forecast period (2022-2027).

The market was negatively impacted by COVID-19 in 2020. Due to the COVID-19 outbreak in the first half of 2020, the electronics and optoelectronics industry was significantly affected. Given that the key manufacturers of fluorinated polyimide are concentrated in the Southeast Asian countries, the prolonged prevalence of the COVID-19 pandemic in these areas drastically slowed down the manufacturing and sale of the electronics product line. This, in turn, had deteriorated the rate of consumption of fluorinated polyimide. Nevertheless, with the ongoing retraction of the pandemic since mid-2021, the fluorinated polyimide market is projected to grow steadily owing to the renewed interest of customers in electronics.

Key Highlights
Over the short term, the growing demand for new and advanced electronic devices in the developed and emerging economies worldwide is one of the key driving factors augmenting the growth of the market studied.
However, the complexity to get the precise product chemistry and uniformity, coupled with uncertainty in raw material availability typically results in high input costs which is a major restraining factor for the growth of the target industry over the forecast period.
Nevertheless, the growing space exploration and aviation activities as well as the growing government investments and expansion in the medical sector are soon likely to create lucrative market growth opportunities for fluorinated polyimide attributed to their high insulation and low dielectric constant properties. Furthermore, the emerging applications for fluorinated polyimide as separating membranes in the upcoming fuel cell technologies are expected to drive up the demand fundamentals to a higher level.
The Asia-Pacific region is expected to dominate the market and is also likely to witness the highest CAGR during the forecast

period. This growth is attributed to the highest production and consumption of fluorinated polyimide in this region. With key manufacturers concentrated in Japan, the country leads the world with a lion's share of over 90% in the global production of fluorinated polyimide. The fast-growing electronics, automotive, and medical sectors in the countries including China, Japan, and India, contribute to the rising consumption of fluorinated polyimide in the Asia-Pacific region.

Fluorinated Polyimide Market Trends

Rising Demand for Fluorinated Polyimide in Flexible Display Materials Application

The Flexible Display Materials application segment accounted for a significant revenue share in the fluorinated polyimide market in 2021.
Fluorinated polyimides exhibit substantially reduced dielectric constant due to low moisture absorption induced by the increase in hydrophobicity. Furthermore, these polyimides have low refractive indices, enhanced transparency in the NIR and visible regions, increased thermal decomposition temperature, high durability, etc. These properties make them suitable candidates for use in display screens. Thin films of fluorinated polyimides show a reduced degree of adhesiveness and friction coefficient which aids in lowering the touch resistance in touchscreen devices. The sharp rise in everyday usage and demand for smartphones and LED TVs has stimulated the market dynamics on the bullish trend. The transition from the use of fragile, less-flexible glass and opaque metal foils to the now common thin flexible screens has fortified the fluorinated polyimide market fundamentals. The advances in flexible active-matrix organic light-emitting diode (AMOLED) displays have caused many smartphone developers like Samsung and LG to foray into the development of flexible display smartphones lately.
Augmenting flexible display device applications and rising adoption of fluorinated polyimide in respective electronics end-user segment, are among the key factors driving the growth of the target industry. For instance,

According to the stats released by the National Bureau of Statistics of China, the annual growth rate of value added in the electronics manufacturing industry in China accounted for 15.7% in 2021, compared to 7.7% in 2020.
As per the Consumer Technology Association, the growth rate of the consumer electronics industry in the United States was registered at 4.3% in 2021, in comparison to -2.2% growth rate registered in the year 2020, thereby enhancing the demand for fluorinated polyimide and strengthening the growth of the market studied.
In May 2022, Samsung announced its plan to launch its recently patented smartphone having a slidable wraparound flexible display.
In May 2021, Apple confirmed jumping on the foldable smartphones bandwagon with its plans to launch a foldable iPhone having an 8-inch flexible OLED display in 2023.

Therefore, considering the aforementioned factors, the demand for fluorinated polyimide is expected to rise in the flexible display materials and related electronics end-user segment significantly in near future.

Asia-Pacific Region to Dominate the Market

The Asia-Pacific region dominated the worldwide market in 2021, with a significant market share in terms of revenue, and is projected to maintain its dominance during the forecast period of 2022-2027. Growing demand for fluorinated polyimide in the electronics and automotive industries across the Asian countries is a primary factor driving the growth of the target industry in the Asia-Pacific. The improving lifestyle and growing disposable income in countries like China and India have fueled the demand for consumer electronics and advanced technology vehicles. China is the hub for electronics and home appliances industries, followed

by Japan with many brands originating from these countries. China also boasts the title of the largest automotive industry in terms of both demand and supply.
Besides the aforementioned end-user industries, fluorinated polyimide finds applications in the aerospace, medical, and solar energy sectors. The excellent thermal and mechanical features of fluorinated polyimide are exploited in the aerospace industry in the form of insulators and electrical spacers. One of the recent advances includes NASA developing a series of colorless polyimide films used as thermal-control coatings in aerospace.
The rapidly growing automotive and electronics sector in China, India, and Japan are propelling demand for fluorine polyimide which will further enhance the growth of the market studied.
According to OICA, China produced 26.08 million unit's vehicles in 2021, registering an increase of 3% compared to 25.23 million units produced in 2020, a trend stimulating a positive outlook for demand for fluorinated polyimide in the forecast period.
Moreover, as per India Brand Equity Foundation, the domestic production of electronics in India has grown from USD 29 billion in 2014-15 to USD 67 billion in 2020-21, which has propelled the demand for fluorinated polyimide in respective applications in the electronics segment.
As per the commitments made by India at the COP26 Climate Conference held in Glasgow, the country is targeting to achieve 500 GW of non-fossil energy capacity by 2030. The initiative will require installations of solar energy-derived power generation infrastructure on a large scale, thereby creating a high demand for fluorinated polyimide.
Japan holds key manufacturers like Sumitomo Chemical Co., Ltd., Daikin Industries, Mitsubishi Gas Chemical Company, Inc., Kaneka Corporation, thus having domination in the global market share. To decrease dependence on imports, South Korean companies like Kolon Industries, SKC, SK Innovation, Co. Ltd. have also stridden up their efforts towards the expansion of fluorinated polyimide product production plants.
All aforementioned factors are likely to fuel the growth of the Asia-Pacific fluorinated polyimide market over the forecast time frame.

Fluorinated Polyimide Market Competitor Analysis

The fluorinated polyimide market is consolidated in nature. Some of the major players in the market include Sumitomo Chemical Co., Ltd., Daikin Industries, Ltd., DuPont, Kolon Industries, and SKC among others (not in any particular order).

Additional Benefits:

The market estimate (ME) sheet in Excel format
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