Synthetic Sapphire: Global Markets

Market Research Report | 2022-09-27 | 188 pages | BCC Research

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Report description:

Description

Report Scope:

This report will cover the synthetic sapphire industry. Definitive and detailed estimates and forecasts of the global market are provided, followed by a detailed analysis of the regions and applications. Furthermore, the ongoing market trends, market growth drivers and challenges impeding the market are discussed.

Market size and estimations will be provided in terms of revenue considering 2021 as base year and market forecasts will be given from 2022-2027. The market size for regional (regions by end use) and country-level (countries by end use) will also be covered. The impact of COVID-19 was also considered while deriving market estimations.

Global markets, synthetic sapphire segments and growth forecasts through 2027 are offered. Sales value estimates are based on prices in the supply chain. Market-driving forces and industry structure are examined. International aspects are analyzed for all global regions and profiles of major global manufacturers are presented.

This report considers the impact of COVID-19. In 2020, the growth rate of manufacturing industries around the world was severely affected by the pandemic. The COVID-19 pandemic halted progress in every regional economy. Various governments around the world are taking necessary measures to contain the economic slowdown.

The synthetic sapphire market is further segmented by application: optical, sapphire substrates, display and others. By end use, the market is segmented into LED manufacturing, semiconductor, consumer electronics, medical devices, military/ aerospace, industrial and others.

This report is an analytical business tool, the primary purpose, of which, is to describe the synthetic sapphire industry and the global market. While both industrial and consumer (i.e., jewelry) applications are covered, the report analyzes the industrial market for synthetic sapphire in greater detail. The industrial market, in general, is more clearly defined than the jewelry market and offers greater data availability and quality. Nevertheless, the non-industrial uses of synthetic sapphire (i.e., in jewelry) are also analyzed, although, generally, in less detail than synthetic sapphire in industrial applications.

The study does not cover -
- Simulant gemstones that have the appearance but not the properties of naturally-occurring gems.
- Other types of synthetic precious or semi-precious minerals (lapis lazuli, turquoise) that, because the structure is amorphous rather than crystalline, are not, strictly speaking, classifiable as gemstones.
- Synthetic versions of natural organic products that are sometimes grouped with gemstones and other precious or semi-precious minerals (coral, ivory).

Report Includes:

- 60 data tables and 33 additional tables
- A comprehensive overview of the global markets for synthetic sapphire industry
- Analyses of the global market trends, with market revenue data for 2021, estimates for 2022, and projections of compound annual growth rates (CAGRs) through 2027
- Coverage of the most important technological, economic, and environmental considerations in the synthetic sapphire industry
- Estimation of the actual market size and market forecast for synthetic sapphire, and corresponding market share analysis based on application, end user, and geographic region
- Latest information on key market drivers and opportunities, industry shifts and regulations, and other demographic factors that will influence this market demand in the coming years (2022-2027)
- Identification of the companies that are best positioned to meet this demand because of their proprietary technologies, strategic alliances, or other advantages
- Assessment of the underlying technological, environmental, legal/regulatory, and political trends that may influence the size and nature of the market
- Market assessment of the COVID-19 impact on the synthetic sapphire market, along with its implications on demand and supply, price impact and various government strategic decisions
- Company profiles of major players within the industry, including Adamant Namiki Precision Jewel Co. Ltd., Kyocera Corp., ON Semiconductor Corp., Saint-Gobain S.A. and Schott AG

Executive Summary

Summary:

The global synthetic sapphire market totaled $REDACTED in 2021 and $REDACTED in 2022. Growing at a CAGR of REDACTED%, the market is expected to reach $REDACTED in 2027.

Synthetic sapphire is a crystalline form of Al2O3 with a hexagonal structure, often known as corundum. Extreme physical, chemical and thermal durability endow it with a wide range of uses in industries where resistance to harsh environments is needed. Sapphire has uses in photonics and electronics, due to its strong electrical resistance and optical transmission qualities. Small-scale applications for sapphire include watch face crystals and lenses. However, sapphire can now be produced in huge, continuous sections to fit almost any application with advancements in edge-defined film-fed growth (EFG).

In edge-defined film-fed growth, a single-crystal sapphire piece can be mechanically extracted from a liquid solution, resulting in

the creation of large and complex single-crystal sapphire pieces. For instance, Saint-Gobain uses EFG technology to produce the largest single-crystal sapphire tubes and windows in the world (up to three inches in diameter). Synthetic sapphire manufacturing is environmentally friendly and less polluting than the production of many alternative materials. It is highly pure, with minimal contamination, no grain boundaries and minimal defects, giving it a range of desirable properties.

Sapphire has a Mohs hardness value of 9, placing it just below diamond, which has a hardness of 10 Mohs. As the second hardest material in nature after diamond and with exceptional optical qualities, physical strength, resistance to impact, abrasion and corrosion, durability under extreme pressure and temperature, bio-compatibility and chemical inertness, sapphire is an ideal base material for deposition of semiconductor materials for manufacturing optical and electronic devices. Its ability to be fashioned into nearly any shape for a variety of applications and its electrical and material properties make it the predominant base material for LEDs and sapphire optics. Sapphire is very stiff. Its Young's modulus is 435 GPa, making it six times stiffer than quartz, so it can't be stretched or deformed easily. These properties make sapphire one of the strongest and most durable materials of present times.

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