Market Synopsis

Superhard materials are extremely incompressible solids containing high bond covalence and high electron density. When measured with Vickers hardness test, the hardness value for superhard materials exceed 40 gigapascals (GPa). It possesses high compressional strength, high shear resistance, large bulk moduli, high melting temperature, chemical inertness, and high thermal conductivity. These properties of superhard materials make it highly desirable for variety of applications.

Different types of superhard materials are diamond, cubic boron nitride, and others. It is extensively used for cutting, grinding, and machining materials such as quartz stone, asphalt, glass, ceramics, cemented carbides, and titanium alloys. Owing to its outstanding properties, superhard materials also find applications in many end-user segments such as transportation, building & construction, chemicals, oil & gas, mining, and electrical & electronics. It is mainly used in composite materials, inorganic non-metallic materials, and hard alloy processing. Additionally, some superhard materials have special applications in optics, electricity, and thermology.

With the rise in automotive industry, there is a surge in demand for superhard materials. It is often used for protective coating, metal sheets, and cutting purpose in the automotive industry. In countries such as India and China, a shift towards relatively high performance and expensive vehicles has been witnessed in past few years, owing to the rise in disposable income in these countries. This led to an increase in car production and hence the increase in demand for superhard materials in automotive industry. Thus, automotive industry is majorly driving the global superhard materials market.

In addition to this, growing manufacturing activities across industrial sector is also projected to drive the product market due to the rising use of superhard materials in manufacturing industries owing to its unique properties. Increasing manufacturing activities is driving the superhard materials and it is expected to continue growth in the coming years. Furthermore, in the oil & gas exploration and production, there is a need of strong metals which do not corrode, break, and melt easily. Owing to the high insulation and thermal resistance properties of superhard materials, it also finds uses in electronics and electrical industries. Hence, electronics, electrical, and oil & gas industries are expected to drive the global superhard materials market during the forecast period.

However, high operating cost and high temperature requirement for the processing of superhard materials are expected to restrain the growth of global superhard materials market in the coming years.

Global Superhard Materials Market Share, by Type (2017)
Market Segmentation:
The global superhard materials market has been segmented on the basis of type, form, end-users and region.

Based on type, the global superhard materials market has been categorized into diamond, cubic boron nitride, and others.

By form, the global superhard materials market has been divided into monocrystalline, polycrystalline, and composite.

The market has also been segmented on the basis of end-users into transportation, building & constructions, chemicals, oil & gas, mining, electrical & electronics, and others.

Regional Analysis:
The global superhard materials market has been spanned across five regions, namely, Asia-Pacific, North America, Europe, Latin America, and the Middle East & Africa.

Asia-Pacific accounted for the largest and the fastest growing market in the global superhard materials market. The growth is attributed to the ever-growing automotive industry and rising oil & gas industries in this region. The regional market is projected to showcase strong growth during the review period.

Owing to the growth of automotive, construction industries in North America, the demand for superhard materials is expected to grow with the growth of these end-use industries. North American market is expected to show remarkable growth during the forecast period.

The growing electrical & electronics industry, automotive, and oil & gas industries in Europe are expected to drive the superhard materials market in this region. European market is expected to grow at a faster pace during the review period.

Latin American market is projected to show moderate growth during the review period. The growth is attributed to come from drilling sites, mining sites, and industrial sectors in this region.

The Middle East & Africa market is expected to show steady growth in the global superhard materials market. The use of superhard materials in the oil & gas industry is majorly driving the superhard materials market in this region.

Key Players:
Element Six (Luxembourg), Sandvik AB (Sweden), Ilijin Diamond (South Korea), Henan Huanghe Whirlwind Co Ltd (China), Sumitomo Electric Industries Ltd (Japan), Funiul Ultrahard Material Co. Ltd (China), SF Diamond Co Ltd (China), WorldWide Superabrasives LLC (China), Henan Yalong Superhard Materials Co. Ltd (Japan), CR GEMS Superabrasives Co. Ltd (China), and Anhui Hongjing New Materials Co. Ltd (China) are the key players operating at the forefront of global superhard materials market.

Intended Audience:
Manufacturers and producers of superhard materials
- Traders of superhard materials
- Raw Material Suppliers
- Research and Development organizations
- Nationalized Laboratories

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