

Global Nanocomposites Market Analysis By Product (Carbon Nanotubes, Nanoclay, Metal/Metal Oxides, Ceramics, Others), By Application (Packaging, Automotive, Electronics & Electrical, Aviation, Energy, Construction, Military, Others) And Segment Forecasts To 2022

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Abstracts

The global nanocomposites market size is expected to reach USD 7.48 billion by 2022, according to a new report by Grand View Research, Inc. Growing demand for nanocomposites in the automobile industry, increased application of nanocomposites in building and construction, high volume consumption in electronics and semiconductors are some of the major factors that have been driving the market. However, the high cost of materials and technology to manufacture them along with the environmental impact of certain materials used in nanocomposites manufacturing are holding back the market.

Nanocomposites usually comprise of a strengthening layer/layers of various materials such as clay, plastics, glass, carbon nanotubes, graphene and others. The binder material used is usually a polymeric resin (eg: epoxy) and this binding matrix holds the materials together to impart strength and higher toughness once the composite system has cured.

The nanocomposites market uses materials such as metals and metallic nanoparticles, polymers, nano-sized clay particles, carbon derivatives such as carbon nanotubes and graphene and other nanoparticles. These materials can be sourced from raw material manufacturers in all the regions globally. Major raw material manufacturers have their manufacturing bases in Europe and North America and usually distribute their materials

through local suppliers in various regions around the world.

Further key findings from the report suggest:

Metal/Metal oxides demand was 17.6 kilo tons in 2014. Metal/metal oxides are extensively used in manufacturing electronic parts and semiconductors. Metal oxides exhibit superior electrical conductivity and is being used in the preparation of pseudo capacitive electrochemical supercapacitors. Metal oxides includes the use of manganese, titanium, tantalum and vanadium oxides in the manufacturing of electronic parts owing to high durability and its ability to withstand high temperature.

Ceramics accounted for 13.0% of the global market volume in 2014. Ceramic nanocomposites exhibit improved hardness, strength, durability and as compared to its counterparts. Ceramic nanocomposites provide superior thermal resistance and are used extensively in aerospace application. Furthermore, it is used in a variety of application due to its characteristics including flame retardancy, high shock resistance, and improved magnetic and optical properties.

Aviation is expected to witness significant growth, growing at a CAGR of 24.2% from 2015 to 2022. Nanocomposites are used in the aviation industry in manufacturing flame retardant panels and high performance components. In addition, it provides structural strength to the existing panels which is expected to have a positive impact towards market growth. Furthermore, nanocomposites easily blend with plastic and metal and provide added strength to panels.

Europe demand for nanocomposites was 68.2 kilo tons, growing at a CAGR of 23.3% from 2015 to 2022. Europe is characterized by the growing demand for nanocomposites in automotive and aviation a-applications. Growing demand for these products owing to their lightweight and superior durability is expected to increase demand over the forecast period. Furthermore, these products are being increasingly used in the manufacturing of wind turbines and solar panels. In terms of product, nanoclay is expected to witness fastest growth as compared to its counterparts.

Key players in the nanocomposites market include Arkema SA, BASF SE, Cabot Corporation, Cyclics Corporation, DSM, Elementis Specialties Inc., eSPin Technologies Inc., DuPont, Foster Corporation, Powdermet Inc., Inframat Corporation, Zyvex Technologies.

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