

Self-healing Materials Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

Market Overview:

The global self-healing materials market size reached US\$ 2.0 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 9.6 Billion by 2028, exhibiting a growth rate (CAGR) of 27.7% during 2023-2028.

Self-healing materials refer to a new class of smart products or materials with built-in healing capability. They are created to repair damage spontaneously or under specific environmental stimuli, such as pressure, heat, light, solvents, or electromagnetic fields. Self-healing materials can be broadly divided into two categories: extrinsic and intrinsic. They include concrete, coatings, polymers, ceramics, metals, and fiber-reinforced composites. These materials offer improved performance, safety, efficiency, and longer lifespan while reducing maintenance costs. As a result, they are widely employed in the construction, automotive, oil and gas, electronics, healthcare, and energy industries wherein reliability and durability are vital.

Self-healing Materials Market Trends:

The market is primarily driven by the increasing adoption of self-healing materials in concrete and coating applications across the construction industry. This is further supported by the growing demand for green materials and eco-friendly building technologies. Furthermore, self-healing asphalt, made by embedding oil-containing microcapsules in the binder, is also being used to lower crack formation in roads. In addition to this, the growing usage of self-healing coatings and polymers in the automotive and aerospace sectors is contributing to the market growth. Furthermore, the increasing focus on introducing self-healing batteries, along with corrosion-resistant

materials for oil extraction and underwater applications, is projected to drive the product demand. The market is further driven by favorable initiatives undertaken by governments across the globe for focusing on legislations and regulations mandating extended service guarantees/warranties. In line with this, continual technological advancements and extensive research and development (R&D) activities conducted by key market players are some of the other factors creating a positive outlook for the market.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global self-healing materials market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on type, form, technology and end use industry.

Breakup by Type:

- Polymers
- Composites
- Ceramics
- Concrete
- Others

Breakup by Form:

- Extrinsic
- Capsule-Based
- Vascular
- Intrinsic

Breakup by Technology:

- Reversible Polymers
- Microencapsulation
- Shape Memory Materials
- Biological Material Systems
- Others

Breakup by End Use Industry:

Building and Construction
Healthcare
Automotive
Electrical and Electronics
Aerospace
Others

Breakup by Region:

North America
United States
Canada
Asia-Pacific
China
Japan
India
South Korea
Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Applied Thin Films Inc., Arkema S.A., Autonomic Materials Inc., Avecom NV, BASF SE, Covestro AG, High Impact Technology LLC, Michelin North America Inc., NEI Corporation and Sensor Coating Systems Ltd.

Key Questions Answered in This Report:

How has the global self-healing materials market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the global self-healing materials market?

What are the key regional markets?

What is the breakup of the market based on the type?

What is the breakup of the market based on the form?

What is the breakup of the market based on the technology?

What is the breakup of the market based on the end use industry?

What are the various stages in the value chain of the industry?

What are the key driving factors and challenges in the industry?

What is the structure of the global self-healing materials market and who are the key players?

What is the degree of competition in the industry?

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