Shape-memory Polymer - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

https://marketpublishers.com/r/S32356AFA5ADEN.html

Date: July 2024
Pages: 120
Price: US$ 4,750.00 (Single User License)
ID: S32356AFA5ADEN

Abstracts

The Shape-memory Polymer Market size is estimated at USD 1.13 billion in 2024, and is expected to reach USD 1.91 billion by 2029, growing at a CAGR of greater than 10% during the forecast period (2024-2029).

Key Highlights

The increasing application of shape-memory polymers in the healthcare industry and the growing demand from the Asia-Pacific construction industry are expected to be the primary drivers of market growth during the forecast period.

The relatively low stiffness value of shape-memory polymers is expected to restrain market growth.

Development and innovation in the biomedical uses or applications of shape-memory polymers are expected to offer market growth opportunities.

The market is expected to witness the fastest growth rate in the Asia-Pacific region during the forecast period.

Shape Memory Polymer Market Trends

The Temperature-induced Segment is Expected to Dominate the Market

Thermally-induced or temperature-induced types of shape-memory polymers (SMPs) are the most studied type of SMPs that can be activated by direct thermal application.

When the temperature applied is higher than the polymer transition temperature, a transitory shape can be programmed to an SMP.

The thermally-induced SMP mechanism is based on two thermal transitions: melting temperature and glass transition temperature.

The most common melting temperature-based SMPs are polyolefins, polyethers, and polyesters, which show a low melting temperature soft phase and a crystalline hard phase that remains unchanged at high temperatures.

SMPs whose glass transition temperature is above 25 °C are referred to as glass transition temperature-based materials, and they show a slow shape recovery compared to melting temperature-based SMPs. However, slow shape recovery is a significant property for biomedical applications because it is preferred not only for clinical purposes such as orthodontic applications but also for avoiding insertion-induced tissue damage.

According to the article titled Shape Memory Polymeric Materials for Biomedical Applications, SMPs for biomedical applications have wide applicability in the fields of general medicine, drug delivery, regenerative medicine, dentistry, neuromedicine, cancer therapy, orthopedics, and corrosion protection. Therefore, the growth in the field of biomedical will benefit the temperature-induced type of SMPs in the future.

According to Evaluate Ltd, the gross spending on pharmaceutical research and development worldwide will reach USD 302 billion by 2028, making a 24% growth in value over USD 244 billion in 2022.

By the end of 2024, the worldwide revenue of the medical technology industry will likely be around USD 682 billion, according to Mediobanca. The continuous growth in the medical technology industry will also boost the demand for temperature-induced SMPs.

Temperature-induced SMPs are also widely used in the aerospace industry because of their advantages, such as their light weight, large recoverable deformation capability, and biocompatibility. The use of SMPs in the aerospace industry leads to improved fuel efficiency, reduced emissions, and enhanced performance.

In June 2023, Boeing forecasted that the demand for new commercial jets by 2042 will likely reach 42,600, valued at USD 8 trillion. Additionally, about half of those deliveries will replace older jets with more fuel-efficient models for reducing emissions. This is

expected to boost the demand for temperature-induced SMPs during the forecast period.

Hence, owing to the above-mentioned factors, temperature-induced SMPs are likely to account for the major market share while maintaining their market dominance during the forecast period.

Asia-Pacific is Expected to Witness the Highest Growth Rate

Asia-Pacific is expected to witness major growth in the demand for shape-memory polymers (SMPs) owing to the increasing demand from countries like China, India, and Japan.

The region has countries with substantially large automotive, construction, healthcare, textile, and other industries. For instance, China is the world's largest construction, automotive, and textile market.

Moreover, according to the International Organization of Motor Vehicle Manufacturers (OICA), in 2022, China, Japan, India, and South Korea were among the top 5 countries in terms of the production volume of passenger cars and commercial vehicles. For instance, China manufactured over 30 million units of passenger cars and commercial vehicles in 2023.

As the global demand for owning a personal four-wheeler vehicle is increasing and the trend of switching over to battery powered electric cars is expanding, the production of new cars will increase year-on-year. According to the Society of Automotive Engineering of China, car sales in 2030 are expected to reach 38 million, of which the sales of EVs are estimated to amount to 15 million, or 40%. Such factors will increase the demand for SMPs, leading to rapid growth in the Asia-Pacific.

Also, SMPs are widely being adopted in the construction industry. With the construction industries of China and India expected to witness rapid growth in the coming years, a significant contribution to the market growth in the region is expected to be made. According to Oxford Economics, China, the United States, and India will account for 51% of global construction work done by 2037, valued at USD 13.9 trillion.

Hence, owing to the reasons mentioned above, Asia-Pacific is likely to witness the

highest growth during the forecast period.

Shape Memory Polymer Industry Overview

The global shape-memory polymer market is moderately consolidated as the majority of the market share is divided among a few players. Some of the key players in the market include BASF SE, Covestro AG, Evonik Industries AG, SMP Technologies Inc., and Spintech Holdings Inc.

Additional Benefits:

The market estimate (ME) sheet in Excel format

3 months of analyst support

Contents

6 COMPETITIVE LANDSCAPE

6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements

6.2 Market Share/Ranking Analysis**

6.3 Strategies Adopted by Leading Players

6.4 Company Profiles

  6.4.1 BASF SE

  6.4.2 Covestro AG

  6.4.3 Evonik Industries AG

  6.4.4 Spintech Holdings Inc.

  6.4.5 EndoShape Inc.

  6.4.6 Nanoshel LLC

  6.4.7 SMP Technologies Inc.

  6.4.8 Asahi Kasei Corporation

  6.4.9 Composite Technology Development Inc.

  6.4.10 Shape Memory Medical

  6.4.11 MedShape Inc.

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

7.1 Development and Innovation in The Biomedical Use of Shape-memory Polymers

I would like to order

Product name: Shape-memory Polymer - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

Product link: https://marketpublishers.com/r/S32356AFA5ADEN.html

Price: US$ 4,750.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/S32356AFA5ADEN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:

Last name:

Email:

Company:

Address:

City:

Zip code:

Country:

Tel:

Fax:

Your message:

**All fields are required

Custumer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970