

Solar Encapsulation Market Size, Share, Trends and Forecast by Material, Technology, Application, and Region, 2025-2033

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Abstracts

The global solar encapsulation market size was valued at USD 3,032 Million in 2024. Looking forward, IMARC Group estimates the market to reach USD 8,253.9 Million by 2033, exhibiting a CAGR of 11.8% from 2025-2033. Asia Pacific currently dominates the market, holding a market share of over 60.2% in 2024. The market is primarily driven by heightened solar energy adoption, significant technological advancements in solar module manufacturing for higher efficiency and durability, and stringent government regulations promoting clean energy, driving demand for advanced encapsulants that enhance solar panel performance, longevity, and sustainability.

Solar encapsulation refers to the technique used to protect solar panels and equipment against degradation due to various external and environmental factors. It involves encapsulating photovoltaic (PV) cells with a polymeric material, generally ethylene vinyl acetate (EVA) film. It helps extend the life of solar cells, mitigate stability issues, and offer protection against corrosion and ultraviolet (UV) radiation, low mechanical stress, and temperature changes. It also assists in providing adhesion between the solar cells, the top surface, and the rear surface of the PV module. In recent years, solar encapsulation has gained immense popularity as it aids in enhancing the performance, efficiency, durability, and cost-effectiveness of PV modules.

Solar Encapsulation Market Trends:

The widespread adoption of solar panels and the escalating demand for electricity across the globe represent the primary factors driving the market growth. Additionally, there has been a substantial shift toward renewable energy sources due to the growing environmental concerns and depleting conventional energy sources. Along with this, the

increasing private and public investments to modernize the existing infrastructure are catalyzing the market growth. Besides this, the development of low-cost encapsulant materials, such as cadmium telluride and amorphous silicon cells, and non-EVA-based encapsulations, including thermoplastic polyurethane (TPU) and polyvinyl butyral (PVB), are augmenting the product demand. Moreover, the implementation of favorable policies and subsidies on the installation of solar panels by governments of various countries is propelling the market growth. As a result, the leading manufacturers are developing new encapsulants for emerging PV technologies. Other factors, including the growing need to reduce carbon footprint, rapid urbanization, technological advancements, and emerging solar energy applications for power generation, are creating a positive outlook for the market.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global solar encapsulation market, along with forecast at the global, regional, and country levels from 2025-2033. The market has been categorized based on material, technology, and application.

Breakup by Material:

Ethylene Vinyl Acetate

Non-Ethylene Vinyl Acetate

UV Curable Resins

Breakup by Technology:

Single-crystal/Polycrystalline Silicon Solar Technology

Thin-film Solar Technology

Cadmium Telluride (CdTe)

Copper Indium Gallium Selenide (CIGS)

Amorphous Silicon (a-Si)

Breakup by Application:

Construction

Electronics

Automotive

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 3M Company, Bridgestone Corporation, dnpSolar, Dow Inc., Dupont De Nemours Inc., Eastman Chemical Company, First Solar Inc., Kuraray Co. Ltd., Mitsubishi Chemical Holdings Corporation, Mitsui Chemicals Inc., RenewSys India Pvt. Ltd. and STR Holdings Inc.

Key Questions Answered in This Report

1.How big is the solar encapsulation market?

2.What is the future outlook of solar encapsulation market?

- 3.What are the key factors driving the solar encapsulation market?
- 4.Which region accounts for the largest solar encapsulation market share?
- 5.Which are the leading companies in the global solar encapsulation market?

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