

Automotive Smart Glass Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Technology (Electrochromic, Polymer Dispersed Liquid Device (PDLC), Suspended Particle Device (SPD)), By Application (Rear and Side Windows, Sunroof Glass, Front and Rear Windshield), By Vehicle Type (Passenger Cars, Commercial Vehicles), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

The Global Automotive Smart Glass Market was valued at USD 2.64 billion in 2024 and is projected to reach USD 7.81 billion by 2030, expanding at a robust CAGR of 19.85% during the forecast period. This surge is driven by rising demand for enhanced in-vehicle experiences, sustainability, and energy efficiency. Automakers are increasingly adopting smart glass technologies like electrochromic glass, which regulates sunlight penetration and minimizes the need for air conditioning, thereby improving fuel efficiency and reducing carbon emissions. The growing popularity of luxury vehicles, which often feature advanced smart glass applications, is another key factor fueling growth. Moreover, evolving consumer preferences for premium aesthetics and personalized cabin environments are boosting adoption. Technological advancements, including the integration of PDLC and SPD technologies, are enhancing both functionality and user experience, reinforcing smart glass as a pivotal element in next-generation automotive design—especially as the industry shifts toward electric and autonomous vehicles.

Market Drivers

Energy Efficiency

The growing focus on sustainability and energy conservation in the automotive sector has elevated the role of smart glass as a critical energy-saving solution. By dynamically adjusting sunlight conditions, smart glass—particularly electrochromic variants—reduces cabin heat buildup, thereby lowering reliance on air conditioning systems. This contributes to improved fuel efficiency and reduced emissions, aligning with global climate goals. Additionally, smart glass technologies can help maintain comfortable cabin temperatures in various climates, enhancing passenger comfort while reducing energy consumption. Innovations such as solar energy integration further amplify these benefits, making smart glass an appealing choice for both manufacturers and eco-conscious consumers striving for greener transportation solutions.

Key Market Challenges

High Manufacturing Costs

A major barrier to widespread adoption of smart glass in the automotive sector is the high cost of production. Technologies such as electrochromic, PDLC, and SPD glass rely on specialized materials and complex manufacturing processes, making them significantly more expensive than traditional glass. This cost factor restricts their inclusion mainly to premium and luxury vehicle segments, limiting accessibility for mass-market models. Additionally, R&D expenses and limited economies of scale hinder broader market penetration. Small and mid-sized manufacturers, particularly in emerging markets, may find it challenging to integrate these solutions due to financial constraints. Efforts to reduce costs through material innovation, process optimization, and increased production volumes are ongoing but still developing.

Key Market Trends

Customization and Personalization

The increasing consumer demand for customized in-car experiences is driving innovation in smart glass technologies. Solutions like PDLC and SPD offer adjustable transparency, allowing users to tailor window opacity for privacy, lighting, and comfort. This aligns with a broader trend toward vehicle personalization, where control over ambient features—such as temperature, lighting, and visual aesthetics—is becoming a

valued differentiator. Smart glass can also be integrated into advanced vehicle control systems, enabling seamless management of in-cabin conditions. Automakers are leveraging this technology not only for its practical benefits but also as a luxury feature that enhances vehicle appeal and aligns with evolving expectations for intelligent and interactive automotive design.

Key Market Players

Corning Inc.

Guardian Industries

Saint-Gobain SA

AGP Glass

Hitachi Chemical Co. Ltd

Research Frontiers Inc.

Nippon Sheet Glass Co. Ltd

AGC Inc.

Gentex Corporation

Gauzy Ltd.

Report Scope

In this report, the Global Automotive Smart Glass Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Automotive Smart Glass Market, By Technology:

Electrochromic

Polymer Dispersed Liquid Device (PDLC)

Suspended Particle Device (SPD)

Automotive Smart Glass Market, By Application:

Rear and Side Windows

Sunroof Glass

Front and Rear Windshield

Automotive Smart Glass Market, By Vehicle Type:

Passenger Cars

Commercial Vehicles

Automotive Smart Glass Market, By Region:

North America

United States

Canada

Mexico

Europe & CIS

France

Germany

Spain

Italy

United Kingdom

Asia-Pacific

China

Japan

India

Vietnam

South Korea

Thailand

Australia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Turkey

South America

Brazil

Argentina

Competitive Landscape

Company Profiles: Detailed analysis of the major Global Automotive Smart Glass Market companies.

Available Customizations

Automotive Smart Glass Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By T...

Global Automotive Smart Glass Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

Contents

1. INTRODUCTION

- 1.1. Market Overview
- 1.2. Key Highlights of the Report
- 1.3. Market Coverage
- 1.4. Market Segments Covered
- 1.5. Research Tenure Considered

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Market Overview
- 3.2. Market Forecast
- 3.3. Key Regions
- 3.4. Key Segments

4. GLOBAL AUTOMOTIVE SMART GLASS MARKET OUTLOOK

- 4.1. Market Size & Forecast
 - 4.1.1. By Value
- 4.2. Market Share & Forecast
 - 4.2.1. By Technology Market Share Analysis (Electrochromic, Polymer Dispersed Liquid Device (PDLCD), Suspended Particle Device (SPD))
 - 4.2.2. By Application Market Share Analysis (Rear and Side Windows, Sunroof Glass, Front and Rear Windshield)
 - 4.2.3. By Vehicle Type Market Share Analysis (Passenger Cars, Commercial Vehicles)
 - 4.2.4. By Regional Market Share Analysis
 - 4.2.4.1. North America Market Share Analysis

- 4.2.4.2. Europe & CIS Market Share Analysis
- 4.2.4.3. Asia-Pacific Market Share Analysis
- 4.2.4.4. Middle East & Africa Market Share Analysis
- 4.2.4.5. South America Market Share Analysis
- 4.2.5. By Top 5 Companies Market Share Analysis, Others (2024)
- 4.3. Global Automotive Smart Glass Market Mapping & Opportunity Assessment
 - 4.3.1. By Technology Market Mapping & Opportunity Assessment
 - 4.3.2. By Application Market Mapping & Opportunity Assessment
 - 4.3.3. By Vehicle Type Market Mapping & Opportunity Assessment
 - 4.3.4. By Regional Market Mapping & Opportunity Assessment

5. NORTH AMERICA AUTOMOTIVE SMART GLASS MARKET OUTLOOK

- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Technology Market Share Analysis
 - 5.2.2. By Application Market Share Analysis
 - 5.2.3. By Vehicle Type Market Share Analysis
 - 5.2.4. By Country Market Share Analysis
 - 5.2.4.1. United States Automotive Smart Glass Market Outlook
 - 5.2.4.1.1. Market Size & Forecast
 - 5.2.4.1.1.1. By Value
 - 5.2.4.1.2. Market Share & Forecast
 - 5.2.4.1.2.1. By Technology Market Share Analysis
 - 5.2.4.1.2.2. By Application Market Share Analysis
 - 5.2.4.1.2.3. By Vehicle Type Market Share Analysis
 - 5.2.4.2. Canada Automotive Smart Glass Market Outlook
 - 5.2.4.2.1. Market Size & Forecast
 - 5.2.4.2.1.1. By Value
 - 5.2.4.2.2. Market Share & Forecast
 - 5.2.4.2.2.1. By Technology Market Share Analysis
 - 5.2.4.2.2.2. By Application Market Share Analysis
 - 5.2.4.2.2.3. By Vehicle Type Market Share Analysis
 - 5.2.4.3. Mexico Automotive Smart Glass Market Outlook
 - 5.2.4.3.1. Market Size & Forecast
 - 5.2.4.3.1.1. By Value
 - 5.2.4.3.2. Market Share & Forecast
 - 5.2.4.3.2.1. By Technology Market Share Analysis

- 5.2.4.3.2.2. By Application Market Share Analysis
- 5.2.4.3.2.3. By Vehicle Type Market Share Analysis

6. EUROPE & CIS AUTOMOTIVE SMART GLASS MARKET OUTLOOK

6.1. Market Size & Forecast

6.1.1. By Value

6.2. Market Share & Forecast

6.2.1. By Technology Market Share Analysis

6.2.2. By Application Market Share Analysis

6.2.3. By Vehicle Type Market Share Analysis

6.2.4. By Country Market Share Analysis

6.2.4.1. France Automotive Smart Glass Market Outlook

6.2.4.1.1. Market Size & Forecast

6.2.4.1.1.1. By Value

6.2.4.1.2. Market Share & Forecast

6.2.4.1.2.1. By Technology Market Share Analysis

6.2.4.1.2.2. By Application Market Share Analysis

6.2.4.1.2.3. By Vehicle Type Market Share Analysis

6.2.4.2. Germany Automotive Smart Glass Market Outlook

6.2.4.2.1. Market Size & Forecast

6.2.4.2.1.1. By Value

6.2.4.2.2. Market Share & Forecast

6.2.4.2.2.1. By Technology Market Share Analysis

6.2.4.2.2.2. By Application Market Share Analysis

6.2.4.2.2.3. By Vehicle Type Market Share Analysis

6.2.4.3. Spain Automotive Smart Glass Market Outlook

6.2.4.3.1. Market Size & Forecast

6.2.4.3.1.1. By Value

6.2.4.3.2. Market Share & Forecast

6.2.4.3.2.1. By Technology Market Share Analysis

6.2.4.3.2.2. By Application Market Share Analysis

6.2.4.3.2.3. By Vehicle Type Market Share Analysis

6.2.4.4. Italy Automotive Smart Glass Market Outlook

6.2.4.4.1. Market Size & Forecast

6.2.4.4.1.1. By Value

6.2.4.4.2. Market Share & Forecast

6.2.4.4.2.1. By Technology Market Share Analysis

6.2.4.4.2.2. By Application Market Share Analysis

- 6.2.4.4.2.3. By Vehicle Type Market Share Analysis
- 6.2.4.5. United Kingdom Automotive Smart Glass Market Outlook
 - 6.2.4.5.1. Market Size & Forecast
 - 6.2.4.5.1.1. By Value
 - 6.2.4.5.2. Market Share & Forecast
 - 6.2.4.5.2.1. By Technology Market Share Analysis
 - 6.2.4.5.2.2. By Application Market Share Analysis
 - 6.2.4.5.2.3. By Vehicle Type Market Share Analysis

7. ASIA-PACIFIC AUTOMOTIVE SMART GLASS MARKET OUTLOOK

- 7.1. Market Size & Forecast
 - 7.1.1. By Value
- 7.2. Market Share & Forecast
 - 7.2.1. By Technology Market Share Analysis
 - 7.2.2. By Application Market Share Analysis
 - 7.2.3. By Vehicle Type Market Share Analysis
 - 7.2.4. By Country Market Share Analysis
 - 7.2.4.1. China Automotive Smart Glass Market Outlook
 - 7.2.4.1.1. Market Size & Forecast
 - 7.2.4.1.1.1. By Value
 - 7.2.4.1.2. Market Share & Forecast
 - 7.2.4.1.2.1. By Technology Market Share Analysis
 - 7.2.4.1.2.2. By Application Market Share Analysis
 - 7.2.4.1.2.3. By Vehicle Type Market Share Analysis
 - 7.2.4.2. Japan Automotive Smart Glass Market Outlook
 - 7.2.4.2.1. Market Size & Forecast
 - 7.2.4.2.1.1. By Value
 - 7.2.4.2.2. Market Share & Forecast
 - 7.2.4.2.2.1. By Technology Market Share Analysis
 - 7.2.4.2.2.2. By Application Market Share Analysis
 - 7.2.4.2.2.3. By Vehicle Type Market Share Analysis
 - 7.2.4.3. India Automotive Smart Glass Market Outlook
 - 7.2.4.3.1. Market Size & Forecast
 - 7.2.4.3.1.1. By Value
 - 7.2.4.3.2. Market Share & Forecast
 - 7.2.4.3.2.1. By Technology Market Share Analysis
 - 7.2.4.3.2.2. By Application Market Share Analysis
 - 7.2.4.3.2.3. By Vehicle Type Market Share Analysis

7.2.4.4. Vietnam Automotive Smart Glass Market Outlook

7.2.4.4.1. Market Size & Forecast

7.2.4.4.1.1. By Value

7.2.4.4.2. Market Share & Forecast

7.2.4.4.2.1. By Technology Market Share Analysis

7.2.4.4.2.2. By Application Market Share Analysis

7.2.4.4.2.3. By Vehicle Type Market Share Analysis

7.2.4.5. South Korea Automotive Smart Glass Market Outlook

7.2.4.5.1. Market Size & Forecast

7.2.4.5.1.1. By Value

7.2.4.5.2. Market Share & Forecast

7.2.4.5.2.1. By Technology Market Share Analysis

7.2.4.5.2.2. By Application Market Share Analysis

7.2.4.5.2.3. By Vehicle Type Market Share Analysis

7.2.4.6. Australia Automotive Smart Glass Market Outlook

7.2.4.6.1. Market Size & Forecast

7.2.4.6.1.1. By Value

7.2.4.6.2. Market Share & Forecast

7.2.4.6.2.1. By Technology Market Share Analysis

7.2.4.6.2.2. By Application Market Share Analysis

7.2.4.6.2.3. By Vehicle Type Market Share Analysis

7.2.4.7. Thailand Automotive Smart Glass Market Outlook

7.2.4.7.1. Market Size & Forecast

7.2.4.7.1.1. By Value

7.2.4.7.2. Market Share & Forecast

7.2.4.7.2.1. By Technology Market Share Analysis

7.2.4.7.2.2. By Application Market Share Analysis

7.2.4.7.2.3. By Vehicle Type Market Share Analysis

8. MIDDLE EAST & AFRICA AUTOMOTIVE SMART GLASS MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

8.2.1. By Technology Market Share Analysis

8.2.2. By Application Market Share Analysis

8.2.3. By Vehicle Type Market Share Analysis

8.2.4. By Country Market Share Analysis

8.2.4.1. South Africa Automotive Smart Glass Market Outlook

- 8.2.4.1.1. Market Size & Forecast
 - 8.2.4.1.1.1. By Value
- 8.2.4.1.2. Market Share & Forecast
 - 8.2.4.1.2.1. By Technology Market Share Analysis
 - 8.2.4.1.2.2. By Application Market Share Analysis
 - 8.2.4.1.2.3. By Vehicle Type Market Share Analysis
- 8.2.4.2. Saudi Arabia Automotive Smart Glass Market Outlook
 - 8.2.4.2.1. Market Size & Forecast
 - 8.2.4.2.1.1. By Value
 - 8.2.4.2.2. Market Share & Forecast
 - 8.2.4.2.2.1. By Technology Market Share Analysis
 - 8.2.4.2.2.2. By Application Market Share Analysis
 - 8.2.4.2.2.3. By Vehicle Type Market Share Analysis
- 8.2.4.3. UAE Automotive Smart Glass Market Outlook
 - 8.2.4.3.1. Market Size & Forecast
 - 8.2.4.3.1.1. By Value
 - 8.2.4.3.2. Market Share & Forecast
 - 8.2.4.3.2.1. By Technology Market Share Analysis
 - 8.2.4.3.2.2. By Application Market Share Analysis
 - 8.2.4.3.2.3. By Vehicle Type Market Share Analysis
- 8.2.4.4. Turkey Automotive Smart Glass Market Outlook
 - 8.2.4.4.1. Market Size & Forecast
 - 8.2.4.4.1.1. By Value
 - 8.2.4.4.2. Market Share & Forecast
 - 8.2.4.4.2.1. By Technology Market Share Analysis
 - 8.2.4.4.2.2. By Application Market Share Analysis
 - 8.2.4.4.2.3. By Vehicle Type Market Share Analysis

9. SOUTH AMERICA AUTOMOTIVE SMART GLASS MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Technology Market Share Analysis
 - 9.2.2. By Application Market Share Analysis
 - 9.2.3. By Vehicle Type Market Share Analysis
 - 9.2.4. By Country Market Share Analysis
 - 9.2.4.1. Brazil Automotive Smart Glass Market Outlook
 - 9.2.4.1.1. Market Size & Forecast

- 9.2.4.1.1.1. By Value
- 9.2.4.1.2. Market Share & Forecast
 - 9.2.4.1.2.1. By Technology Market Share Analysis
 - 9.2.4.1.2.2. By Application Market Share Analysis
 - 9.2.4.1.2.3. By Vehicle Type Market Share Analysis
- 9.2.4.2. Argentina Automotive Smart Glass Market Outlook
 - 9.2.4.2.1. Market Size & Forecast
 - 9.2.4.2.1.1. By Value
 - 9.2.4.2.2. Market Share & Forecast
 - 9.2.4.2.2.1. By Technology Market Share Analysis
 - 9.2.4.2.2.2. By Application Market Share Analysis
 - 9.2.4.2.2.3. By Vehicle Type Market Share Analysis

10. MARKET DYNAMICS

- 10.1. Drivers
- 10.2. Challenges

11. MARKET TRENDS & DEVELOPMENTS

12. COMPETITIVE LANDSCAPE

- 12.1. Company Profiles
 - 12.1.1. Corning Inc.
 - 12.1.1.1. Company Details
 - 12.1.1.2. Products
 - 12.1.1.3. Financials (As Per Availability)
 - 12.1.1.4. Key Market Focus & Geographical Presence
 - 12.1.1.5. Recent Developments
 - 12.1.1.6. Key Management Personnel
 - 12.1.2. Guardian Industries
 - 12.1.2.1. Company Details
 - 12.1.2.2. Products
 - 12.1.2.3. Financials (As Per Availability)
 - 12.1.2.4. Key Market Focus & Geographical Presence
 - 12.1.2.5. Recent Developments
 - 12.1.2.6. Key Management Personnel
 - 12.1.3. Saint-Gobain SA
 - 12.1.3.1. Company Details

- 12.1.3.2. Products
- 12.1.3.3. Financials (As Per Availability)
- 12.1.3.4. Key Market Focus & Geographical Presence
- 12.1.3.5. Recent Developments
- 12.1.3.6. Key Management Personnel
- 12.1.4. AGP Glass
 - 12.1.4.1. Company Details
 - 12.1.4.2. Products
 - 12.1.4.3. Financials (As Per Availability)
 - 12.1.4.4. Key Market Focus & Geographical Presence
 - 12.1.4.5. Recent Developments
 - 12.1.4.6. Key Management Personnel
- 12.1.5. Hitachi Chemical Co. Ltd
 - 12.1.5.1. Company Details
 - 12.1.5.2. Products
 - 12.1.5.3. Financials (As Per Availability)
 - 12.1.5.4. Key Market Focus & Geographical Presence
 - 12.1.5.5. Recent Developments
 - 12.1.5.6. Key Management Personnel
- 12.1.6. Research Frontiers Inc.
 - 12.1.6.1. Company Details
 - 12.1.6.2. Products
 - 12.1.6.3. Financials (As Per Availability)
 - 12.1.6.4. Key Market Focus & Geographical Presence
 - 12.1.6.5. Recent Developments
 - 12.1.6.6. Key Management Personnel
- 12.1.7. Nippon Sheet Glass Co. Ltd
 - 12.1.7.1. Company Details
 - 12.1.7.2. Products
 - 12.1.7.3. Financials (As Per Availability)
 - 12.1.7.4. Key Market Focus & Geographical Presence
 - 12.1.7.5. Recent Developments
 - 12.1.7.6. Key Management Personnel
- 12.1.8. AGC Inc.
 - 12.1.8.1. Company Details
 - 12.1.8.2. Products
 - 12.1.8.3. Financials (As Per Availability)
 - 12.1.8.4. Key Market Focus & Geographical Presence
 - 12.1.8.5. Recent Developments

- 12.1.8.6. Key Management Personnel
- 12.1.9. Gentex Corporation
 - 12.1.9.1. Company Details
 - 12.1.9.2. Products
 - 12.1.9.3. Financials (As Per Availability)
 - 12.1.9.4. Key Market Focus & Geographical Presence
 - 12.1.9.5. Recent Developments
 - 12.1.9.6. Key Management Personnel
- 12.1.10. Gauzy Ltd.
 - 12.1.10.1. Company Details
 - 12.1.10.2. Products
 - 12.1.10.3. Financials (As Per Availability)
 - 12.1.10.4. Key Market Focus & Geographical Presence
 - 12.1.10.5. Recent Developments
 - 12.1.10.6. Key Management Personnel

13. STRATEGIC RECOMMENDATIONS/ACTION PLAN

- 13.1. Key Focus Areas
 - 13.1.1. Target By Technology
 - 13.1.2. Target By Application

14. ABOUT US & DISCLAIMER

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