

EUV Lithography Materials Market Forecasts to 2034 – Global Analysis By Material Type (EUV Photoresists, Underlayer Materials, Topcoat Materials, Developer Solutions, Ancillary Lithography Chemicals and Other EUV Materials), Photoresist Chemistry, Layer, Technology Node, End User and Geography

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Abstracts

According to Statistics MRC, the Global EUV Lithography Materials Market is accounted for \$1.8 billion in 2026 and is expected to reach \$5.2 billion by 2034 growing at a CAGR of 14.2% during the forecast period. EUV Lithography Materials are specialized materials used in extreme ultraviolet lithography to pattern extremely small semiconductor features. The category includes EUV photoresists, underlayers, hard masks, developers, and related process chemicals that enable pattern transfer using approximately 13.5-nanometer EUV radiation. These materials must provide high resolution, sensitivity, pattern fidelity, and resistance to process-related defects. They are essential for manufacturing advanced logic and memory devices at leading-edge process nodes. EUV resist systems must balance resolution with exposure efficiency while limiting stochastic defects such as line-edge roughness and pattern variability. Continued semiconductor scaling is increasing demand for advanced EUV materials. Research is focused on metal-containing and chemically amplified resists, improved underlayers, defect reduction, and materials capable of supporting increasingly complex high-NA EUV lithography processes.

Market Dynamics

Driver:

Growing demand for advanced node manufacturing

Increasing production of advanced node semiconductors using EUV lithography for AI, 5G, and high-performance computing applications is driving demand for EUV lithography materials. EUV lithography enables patterning of features below 7nm, which is essential for continued Moore's Law scaling. Growing number of EUV layers per device increases material consumption per wafer. Rising EUV scanner installations drive demand for compatible photoresists and ancillary materials. Demand for improved resolution and reduced defects at advanced nodes supports premium material adoption.

Restraint:

High material costs and process complexity

High costs of EUV photoresists and ancillary materials present significant barriers to adoption, particularly for cost-sensitive applications. Process complexity of EUV lithography requires specialized expertise and extensive process optimization. Stochastic defects and line edge roughness challenges require continuous material innovation. Limited availability of qualified EUV material suppliers constrains supply chain flexibility. Environmental and safety requirements for metal-containing resists add to total cost of ownership.

Opportunity:

Metal oxide resist adoption and new chemistry development

Growing adoption of metal oxide resists for advanced nodes presents significant opportunities for material suppliers. Development of new photoresist chemistries for sub-2nm nodes creates differentiation opportunities. Expansion of EUV lithography to memory manufacturing creates new material demand. Growth in EUV patterning for advanced packaging applications expands addressable markets. Sustainability initiatives drive demand for environmentally friendly EUV material alternatives.

Threat:

Technology transitions and high-volume manufacturing challenges

Technology transitions may render existing EUV material formulations obsolete, requiring continuous innovation investment. High-volume manufacturing challenges for metal oxide resists may limit adoption timelines. Economic cyclicity in semiconductor markets affects EUV material demand. Geopolitical tensions may disrupt supply chains for critical EUV materials. Competition from alternative patterning technologies may limit growth in certain applications.

Covid-19 Impact:

The COVID-19 pandemic accelerated digital transformation and semiconductor demand, driving investment in advanced node manufacturing capacity and EUV lithography adoption. Supply chain disruptions highlighted the importance of EUV material supply security, accelerating regional production initiatives. The post-pandemic period has witnessed sustained investment in EUV lithography capacity, supporting material demand. Growing government support for semiconductor manufacturing continues driving market growth. EUV material innovation remains critical for enabling next-generation device architectures.

The EUV photoresists segment is expected to be the largest during the forecast period

The EUV photoresists segment is expected to account for the largest market share during the forecast period as photoresists are the critical material enabling EUV patterning. Growing demand for advanced node manufacturing drives increased photoresist consumption and performance requirements. Advances in photoresist chemistry enable improved resolution and reduced defects. Established supply relationships and application expertise support segment leadership. EUV photoresists are essential for achieving required pattern fidelity at advanced nodes.

The metal oxide resists segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the metal oxide resists segment is predicted to witness the highest growth rate driven by increasing adoption for critical layers at advanced nodes. Metal oxide resists offer higher etch resistance and improved resolution compared to chemically amplified resists. Growing demand for sub-2nm patterning supports segment growth. Advances in metal oxide resist formulation improve performance and reduce defects. Metal oxide resists are increasingly preferred for challenging EUV applications.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share owing to dominant advanced node manufacturing base in Taiwan, South Korea, and Japan. The region hosts the world's leading foundries and memory manufacturers with extensive EUV lithography adoption. Major semiconductor manufacturers drive

substantial demand for EUV materials. Government support for semiconductor manufacturing reinforces regional market leadership. Continued advanced node capacity expansion drives EUV material demand.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by continued advanced node capacity expansion and EUV adoption across the region. South Korea and Taiwan are expanding EUV lithography capacity for memory and logic devices. China is investing in domestic EUV development, creating long-term demand potential. Growing investment in advanced node production accelerates demand for EUV materials. Regional supply chain development supports market growth.

Key players in the market

Some of the key players in the EUV Lithography Materials Market include Japan Advanced Semiconductor Technology Co., Ltd., Japan Electronic Materials Corporation, Japan Synthetic Rubber Co., Ltd., TOKYO OHKA KOGYO CO., LTD., JSR Corporation, Shin-Etsu Chemical Co., Ltd., Fujifilm Holdings Corporation, Merck KGaA, DuPont de Nemours, Inc., SCREEN Holdings Co., Ltd., Entegris, Inc., AGC Inc., Resonac Holdings Corporation, ArF Monomer Co., Ltd., and Inpria Corporation.

Key Developments:

In July 2026, JSR Corporation launched a new metal oxide EUV photoresist for sub-2nm logic applications, offering improved resolution and reduced stochastic defects.

In March 2026, TOKYO OHKA KOGYO CO., LTD. expanded its EUV photoresist production capacity in Japan to meet growing demand from advanced node manufacturers.

In November 2025, Shin-Etsu Chemical Co., Ltd. introduced a new chemically amplified EUV resist with improved sensitivity and resolution for critical layer patterning.

In June 2025, Merck KGaA announced the launch of a new underlayer material for EUV lithography, offering improved adhesion and etch performance for advanced node manufacturing.

Material Types Covered:

EUV Photoresists

Underlayer Materials

Topcoat Materials

Developer Solutions

Ancillary Lithography Chemicals

Other EUV Materials

Photoresist Chemistries Covered:

Chemically Amplified Resists

Metal Oxide Resists

Molecular Glass Resists

Non-Chemically Amplified Resists

Hybrid Resists

Other Photoresist Chemistries

Layers Covered:

Critical Metal Layers

Interconnect Layers

Contact Layers

Via Layers

Cut and Block Layers

Other Layers

Technology Nodes Covered:

7 nm-Class Nodes

5 nm-Class Nodes

3 nm-Class Nodes

2 nm-Class Nodes

Sub-2 nm Nodes

End Users Covered:

Logic Device Manufacturers

Memory Manufacturers

Foundries

Integrated Device Manufacturers

Research and Development Facilities

Other End Users

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) are also represented in the same manner as above.

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