

# Global Pentylene Glycol Market Size Study & Forecast, by Technology (Dielectric Barrier Discharge (DBD), Jet Plasma), Application (Medical Device Manufacturing, Aerospace & Defense) and End-User Industry (Healthcare, Consumer Electronics) and Material Type (Plastics, Metals) and Regional Forecasts 2025-2035

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## Abstracts

The Global Pentylene Glycol Market, valued at nearly USD 0.3 billion in 2024, is set to expand steadily at a CAGR of 6.10% between 2025 and 2035, driven by its rising integration across advanced manufacturing, specialty formulations, and critical industrial processes. Pentylene glycol—widely recognized for its multifunctionality—has evolved from a traditional humectant and stabilizer into a strategic ingredient shaping product innovation in sectors that require uncompromised purity, material compatibility, and performance reliability. As industries push toward higher efficiency and increasingly complex material engineering, the compound's antimicrobial traits, solvency, and excellent dermatological profile have expanded its influence across a wide spectrum of end-use sectors. The market is further boosted by growing investments in medical-grade materials and high-tech components where pentylene glycol's stabilizing capacity provides measurable operational advantages.

The acceleration of adoption across healthcare technologies, device manufacturing, and electronics has set the stage for long-term growth. Ongoing advances in plasma treatment technologies, evolving regulatory frameworks promoting safer and more sustainable chemical environments, and increasing demand for enhanced material surfaces have collectively paved the way for pentylene glycol's rising relevance. Moreover, as end users seek to differentiate their products with performance-led

chemistry, the market continues to benefit from robust R&D advancements as well as a new wave of high-performance processing materials. Although supply chain fluctuations and price volatility pose intermittent hurdles, the overall trajectory of adoption points toward strong, uninterrupted expansion from 2025 to 2035.

**The detailed segments and sub-segments included in the report are:**

By Technology:

Dielectric Barrier Discharge (DBD)

Jet Plasma

By Application:

Medical Device Manufacturing

Aerospace & Defense

By End-User Industry:

Healthcare

Consumer Electronics

By Material Type:

Plastics

Metals

By Region:

North America

U.S.

Canada

## Europe

UK

Germany

France

Spain

Italy

Rest of Europe

## Asia Pacific

China

India

Japan

Australia

South Korea

Rest of Asia Pacific

## Latin America

Brazil

Mexico

Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

## **Dielectric Barrier Discharge (DBD) Technology is Expected to Dominate the Market**

Dielectric Barrier Discharge (DBD) technology is anticipated to lead the market over the forecast period, driven by its unrivaled efficiency in surface activation, sterilization, and material bonding enhancements. Industries that operate at the intersection of precision engineering and stringent quality specifications—such as medical device manufacturing—continue to rely heavily on DBD due to its stable plasma output and operational reliability. The technology's superior compatibility with plastics, polymers, and heat-sensitive substrates strengthens its position as the preferred approach for achieving consistent material adhesion and enhanced surface performance. Although Jet Plasma systems are gaining ground through emerging aerospace applications, DBD remains the anchor technology due to its scalability and widespread industrial acceptance.

## **Healthcare End-User Industry Leads in Revenue Contribution**

The healthcare industry currently generates the largest share of revenue in the global pentylene glycol market as demand accelerates for specialized materials incorporated into medical devices, diagnostics, therapeutic equipment, and biocompatible components. Pentylene glycol's safety profile, ability to stabilize complex formulations, and role in enhancing material durability give it a competitive edge in this tightly regulated industry. In contrast, the consumer electronics sector is projected to rise as the fastest-growing end user, fueled by rapid advancements in surface engineering, miniaturized components, and performance-driven consumer products. Nonetheless,

healthcare remains the prominent revenue engine, supported by surging investment in hospital infrastructure, medical device innovation, and a rapidly globalizing medical supply chain.

The global market reflects varied dynamics across major regions, each shaped by distinct industrial footprints. North America is poised to dominate in 2025, supported by its advanced healthcare system, growing medical device production capabilities, and strong presence of high-tech electronics manufacturers. Europe follows closely, propelled by its leadership in aerospace engineering, stringent product safety standards, and deep-rooted R&D culture, all of which spur demand for premium-grade pentylene glycol. Meanwhile, the Asia Pacific region is forecast to be the fastest-growing throughout the assessment period. Its booming electronics sector, rapidly modernizing healthcare infrastructure, and expanding manufacturing base—especially in China, India, and South Korea—are accelerating adoption rates. Latin America and the Middle East & Africa, though comparatively smaller, are steadily progressing as local manufacturing and healthcare expenditure continue to rise.

**Major market players included in this report are:**

Evonik Industries AG

Symrise AG

Lonza Group

Merck KGaA

Clariant AG

BASF SE

Ashland Global Holdings Inc.

Croda International Plc

Solvay S.A.

ADEKA Corporation

Minasolve SAS

Galaxy Surfactants Ltd.

Spec-Chem Industry Inc.

Inolex Inc.

Sino Lion (USA) Ltd.

#### Global Pentylene Glycol Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period – 2025-2035

Report Coverage – Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope – North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope – Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope\*

The objective of the study is to define market sizes of different segments and countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within the countries involved. Additionally, it offers detailed insights into driving forces, challenges, and potential opportunities that will shape future market trajectories. The study also includes an in-depth analysis of micro-markets to guide stakeholders toward informed investment decisions, paired with a comprehensive evaluation of competitive landscapes and product portfolios of key market participants. The detailed segments and sub-segments of the market are explained above.

**Key Takeaways:**

Market Estimates & Forecast for 10 years from 2025 to 2035.

Annualized revenues and regional-level analysis for each market segment.

Detailed analysis of the geographical landscape with country-level insights across major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of the competitive structure of the market.

Demand side and supply side analysis of the market.

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