

## **Global 3D Printing Materials & Services Market - Focused Insights 2025-2030**

Market Report | 2025-03-11 | 151 pages | Arizton Advisory & Intelligence

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### **Report description:**

The global 3D printing materials & services market is expected to grow at a CAGR of 11.83% From 2024 TO 2030.

### **KEY TAKEAWAYS**

- By Component: The services segment holds the largest market share. 3D printing services offer unparalleled customization, enabling the production of complex and tailored designs, thus helping segment growth.
- By Material Type: The polymers segment holds the largest market share and shows incremental growth of USD 1.44 billion during the forecast period. The segment is growing as polymers can be melted and re-solidified multiple times without significant degradation.
- By Technology: The Multi Jet Fusion (MJF) segment shows the highest growth of 14.92% during the forecast period, as it offers high-quality, fast, and cost-effective solutions for producing functional parts and prototypes.
- By Application: The prototyping segment holds the largest market share, as it allows businesses to rapidly design, test, and iterate prototypes in real time.
- By End-User: In 2024, the industrial machinery segment accounts for the largest market share as they leverage 3D printing for prototyping, producing intricate parts, and manufacturing on-demand components for tools and equipment.
- By Geography: North America dominates and holds the largest share of the global 3D printing materials & services market. The growth is due to the increasing demand for customized products, improvements in 3D printing technologies, and the broader adoption of 3D printing services across various industries.
- Growth Factor: The global 3D printing materials & services market is set to grow due to surged demand for industrial applications and integration of AI & machine learning in services.

### **MARKET TRENDS**

Rising Adoption of On-Demand Manufacturing Services

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On-demand manufacturing refers to the production of goods as they are needed, rather than in bulk. Traditional manufacturing often involves high upfront costs for materials and production. On-demand services reduce waste and inventory costs, allowing businesses to allocate resources more effectively. Consumers increasingly seek personalized products. On-demand manufacturing enables businesses to offer tailored solutions without the need for extensive retooling. With on-demand services, companies can respond quickly to market changes and consumer demands. As businesses seek to create customized products, the demand for a wider variety of 3D printing materials is on the rise. This includes not only traditional plastics but also metals, ceramics, and composites. Driven by technological advancements, changing consumer expectations, and economic factors, this trend is reshaping how products are designed and produced.

### Increasing Focus on Multi-Material Printing

The technology behind multi-material printing includes several methods, such as Fused Deposition Modeling (FDM), Stereolithography (SLA), Selective Laser Sintering (SLS), etc. These techniques can fuse different powders, and filaments, enabling the creation of parts with diverse material characteristics. By allowing the integration of different materials, multi-material printing enhances product performance. For instance, a single printed object can have rigid and flexible sections, making it suitable for applications that require both durability and flexibility. This capability is particularly appealing to industries that prioritize innovation and performance. Multi-material printing can lead to cost savings by reducing material waste and minimizing the need for assembly. Additionally, the ability to print with recycled materials or bio-based filaments aligns with the growing emphasis on sustainability in manufacturing.

## MARKET DRIVERS

### Cost Efficiency & Waste Reduction

The emphasis on cost efficiency and waste reduction has also emerged as one of the key factors behind the growth of the 3D printing materials and services market. Due to the need for industries to reduce expenses, efficiently allocate resources, and adopt sustainable practices to help meet economic as well as environmental goals, this driver is particularly significant. Subtractive processes typical of traditional manufacturing approaches such as CNC machining or casting led to material waste. In contrast, 3D printing is an additive manufacturing method, which means materials are deposited in layers to create an object. This drastically reduces waste as only the exact amount of material needed for the design is used. The introduction of AI & ML has further improved the cost-effectiveness by optimizing material usage. Generative design algorithms detect the functional requirement and result in the efficient use of materials without compromising on the quality of the outcome.

### Surged Demand for Industrial Application

The increasing demand for 3D printing in industrial applications is a major driving force behind the growth of the market for materials and services. Industrial sectors such as aerospace, automotive, healthcare, and manufacturing are adopting 3D printing technologies at an accelerated pace due to their ability to enhance efficiency, lower costs, and enable innovation. Industries are leveraging 3D printing to create highly customized and complex parts that would be difficult or expensive to produce using traditional methods. In the medical field, 3D printing is used for creating patient-specific implants, prosthetics, and surgical guides. The ability to customize each product for the individual improves patient outcomes significantly. Aerospace companies demand lightweight yet robust components to enhance fuel efficiency and performance. 3D printing enables the creation of complex, lightweight geometries that reduce material usage while maintaining structural integrity. Rolls-Royce uses 3D printing to create parts for its aircraft engines.

## INDUSTRY RESTRAINTS

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## High Material Costs

The high cost of materials remains a significant challenge in the 3D printing materials and services market, despite advancements in technology and widespread adoption. Materials used in 3D printing, such as powders, filaments, and resins, are not standard industrial materials. They are specially formulated and processed to meet the unique requirements of 3D printing technologies. There is limited standardization in the 3D printing material supply chain, with different printers and technologies requiring proprietary materials. Manufacturers often tie users to their materials through hardware compatibility restrictions, further inflating prices. Compared to traditional manufacturing materials, 3D printing materials are produced in smaller quantities, which prevents economies of scale from being realized. As the adoption of 3D printing grows, this issue is expected to reduce, but current low production volumes keep prices high.

## SEGMENTATION INSIGHTS

### INSIGHTS BY COMPONENT

The global 3D printing materials & services market by component is segmented into services and materials. In 2024, the services segment holds the largest market share. These services include design assistance, prototyping, custom part manufacturing, post-processing, and consultation. Prototyping is one of the most significant and widely used services in the 3D printing market. It involves the rapid creation of physical models, enabling businesses to test, validate, and refine designs before full-scale production. Companies like BMW and Ford leverage 3D printing for functional prototypes of car components, significantly reducing development time. On-demand manufacturing allows businesses to produce parts or components only when needed, eliminating the need for large inventories and minimizing waste. Customization services focus on creating products or components tailored to individual needs, offering a level of personalization that traditional manufacturing cannot achieve. The growing demand for tailored solutions in sectors such as healthcare, fashion, and consumer goods is driving the expansion of the customized 3D printing market.

-  By Component

o  Services

o  Materials

### INSIGHTS BY MATERIAL TYPE

The global 3D printing materials & services market by material type is categorized into polymers, metal, ceramic, and others. The polymers segment holds the largest market share and shows incremental growth of USD 1.44 billion during the forecast period. Most 3D printing polymers are thermoplastics, meaning they can be melted and re-solidified multiple times without significant degradation. This property makes them ideal for additive manufacturing, where the material is heated and extruded layer by layer to form the desired object. ABS (Acrylonitrile Butadiene Styrene) is a commonly used thermoplastic in 3D printing due to its toughness and impact resistance. Compared to metals or ceramics, polymers are generally easier to work with. They have lower melting points and do not require specialized, expensive equipment for printing, making them suitable for both beginners and industrial applications. PLA (Polylactic Acid), a biodegradable polymer, is widely used in desktop 3D printers, particularly in the education and hobbyist markets, contributing to the segment's growth.

-  By Material Type

o  Polymers

o  Metal

o  Ceramic

o  Others

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## INSIGHTS BY TECHNOLOGY

Based on the technology, the MJF shows significant growth, with the fastest-growing CAGR of 14.92% during the forecast period. Multi Jet Fusion (MJF) is an advanced 3D printing technology that delivers high-quality, fast, and cost-effective solutions for producing functional parts and prototypes. Compared to traditional powder-based technologies like SLS, MJF offers significantly faster print times. By using multiple printheads to apply binding agents over a wider area simultaneously, the process is accelerated, reducing production times and improving manufacturing throughput.

A major advantage of MJF is its ability to produce end-use parts directly, rather than just prototypes, marking a significant breakthrough. Industries such as automotive, aerospace, consumer electronics, and healthcare are increasingly adopting MJF to manufacture high-quality, functional parts like brackets, housings, and interior components. Its capability to create strong and durable parts makes it a preferred choice for companies looking to integrate 3D printing into their supply chains for production.

### - By Technology

o FDM/FFF

o SLA

o SLS

o MJF

o Others

## INSIGHTS BY APPLICATION

Based on the technology, prototyping accounted for the largest share of the global 3D printing materials & services market in 2024. Traditional prototyping methods are time-consuming and often require multiple steps (e.g., tooling, casting) before a working prototype is produced. 3D printing reduces this lead time, allowing businesses to rapidly design, test, and iterate prototypes in real time. This speed in development enables companies to bring products to market faster and respond to market demands or design changes more efficiently. With 3D printing, prototypes can be created and tested in a short period, allowing for multiple iterations in a single design cycle. This ability to rapidly iterate on designs helps to improve the final product by identifying potential issues earlier in the process. Designers can test functionality, fit, and ergonomics quickly. Protolabs, a leading digital manufacturing service, offers rapid prototyping services using 3D printing for industries like healthcare and aerospace. They have reduced the cost of prototyping by streamlining the production process and helping clients test designs without significant investments in molds or tooling.

### - By Application

o Prototyping

o Manufacturing

o Others

## INSIGHTS BY END-USER

The global 3D printing materials & services market by end-users is segmented into industrial machinery, aerospace & defense, healthcare, automotive, consumer products, and others. In 2024, the industrial machinery segment held the largest market share. Industrial machinery manufacturers are leveraging 3D printing for prototyping, producing intricate parts, and manufacturing on-demand components for tools and equipment. The adoption of 3D printing allows for greater flexibility, cost savings, and advancements in machinery design, catering to the growing demand for innovative solutions across industries. 3D printing is widely used for creating prototypes that allow engineers to visualize, test, and refine designs before committing to full-scale

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production. 3D printing enables the production of complex components that traditional manufacturing techniques struggle to create. Using additive techniques, intricate geometries such as internal channels, lattice structures, and consolidated assemblies can be manufactured with ease. By eliminating the need for molds or complex machining, 3D printing significantly reduces production costs and lead times.

#### By End-User

- Industrial Machinery
- Aerospace & Defense
- Healthcare
- Automotive
- Consumer Products
- Others

#### GEOGRAPHICAL ANALYSIS

North America dominates and holds the largest share of the global 3D printing materials & services market. The rapid growth of 3D printing materials and services is attributed to the increasing demand for customized products, improvements in 3D printing technologies, and the broader adoption of 3D bioprinting services across various industries, including healthcare, aerospace, automotive, and manufacturing. The United States, in particular, leads the market, with major players like GE, and HP at the forefront of driving technological advancements. North America continues to lead in the aerospace and automotive sectors, with companies like Boeing, General Electric, and Ford investing heavily in 3D printing technologies. The use of 3D printing in these industries helps streamline the production of complex components, reduce weight, and improve fuel efficiency.

In the healthcare sector, the United States is a leader in adopting 3D printing for a variety of applications, including custom implants, prosthetics, and medical devices. 3D printing allows for the precise creation of complex anatomical structures, improving surgical outcomes and providing personalized solutions for patients.

#### By Geography

- North America
  - o□ US
  - o□ Canada
- Europe
  - o□ Germany
  - o□ UK
  - o□ France
  - o□ Italy
- APAC
  - o□ China
  - o□ Japan
  - o□ South Korea
  - o□ India
- Latin America
  - o□ Brazil
  - o□ Mexico
  - o□ Argentina
- Middle East & Africa

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- o Turkey
- o UAE
- o Saudi Arabia

## COMPETITIVE LANDSCAPE

The global 3D printing materials & services market report consists of exclusive data on 27 vendors. The market is fragmented with the presence of both global and regional players, leading to high competition. Major international players like 3D Systems, ATI, Desktop Metal, EOS GmbH, General Electric, Henkel, HP, Materialise, Proto Labs, SABIC, Solvay, Stratasys, and Xometry, etc. dominate the landscape, offering advanced products and services, while regional vendors focus on catering to localized needs. Innovation is central to maintaining a competitive edge in this market. Technologies such as metal additive manufacturing, multi-material printing, and bioprinting are pushing the boundaries of application possibilities. The market is prone to infiltration by low-cost, substandard products, particularly from less-regulated regions or vendors focusing on price competitiveness over quality. This poses a significant challenge to global vendors who prioritize performance, reliability, and compliance with industry standards.

### Key Vendors

- 3D Systems
- ATI
- Desktop Metal
- EOS GmbH
- General Electric
- Henkel
- HP
- Materialise
- Proto Labs
- SABIC
- Solvay
- Stratasys
- Xometry

### Other Prominent Vendors

- Airwolf 3D
- Arkema
- BASF
- Carbon
- CNPC Powder
- CRP Technology
- Evonik Industries
- Hognas
- Impossible Objects
- Kennametal
- Markforged
- Sandvik AB
- Shapeways

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KEY QUESTIONS ANSWERED:

- 1.□How big is the global 3D printing materials & services market?
- 2.□What is the growth rate of the global 3D printing materials & services market?
- 3.□Which region dominates the global 3D printing materials & services market?
- 4.□Who are the major players in the global 3D printing materials & services market?

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