

Thermal Conductive Polymer Material Market Size & Share Analysis - Growth Trends and Forecast (2026 - 2031)

> ****Industry:**** Electronic Chemicals & Catalysts (Chemicals & Materials)
> ****Source:**** <https://www.mordorintelligence.com/industry-reports/thermal-conductive-polymer-material-market>
> ****Scraped Date:**** 2026-09-17

Executive Market Summary

Market Metric	Details
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Base Market Size	USD 224.70 million
Projected Forecast (2031)	USD 224.70 million
Growth Rate (CAGR)	11.45 %
Largest Market Region	N/A
Fastest-Growing Region	N/A

Market Visualizations & Infographics

![Major players in Thermal Conductive Polymer Material industry](images/chart_2.png)

![Thermal Conductive Polymer Material Market Size](images/chart_3.png)

![Thermal Conductive Polymer Material Market Share by Polymer Base, 2025](images/chart_4.png)

![Thermal Conductive Polymer Material Market Share by End-User Industry, 2025](images/chart_5.png)

![Thermal Conductive Polymer Material Market Growth Rate by Region](images/chart_6.png)

![Thermal Conductive Polymer Material Market Concentration](images/chart_7.png)

![Icon](images/chart_8.png)

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![GPTW](images/chart_19.png)

Comprehensive Research Analysis

Overview Points List Flex 49 Share Feature End

Market Overview

Study Period	2021 - 2031
Market Size (2026)	USD 224.70 Million
Market Size (2031)	USD 386.37 Million
Growth Rate (2026 - 2031)	11.45 %

Fastest Growing Market | Asia-Pacific |

Largest Market | North America |

Market Concentration | Low |

Major Players*Disclaimer: Major Players sorted in no particular order

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Market Overview

Thermal Conductive Polymer Material Market Analysis by Mordor IntelligenceThe thermal conductive polymer material market size was estimated at USD 202.34 million in 2025 and is estimated to grow from USD 224.70 million in 2026 to USD 386.37 million by 2031, at a CAGR of 11.45% during the forecast period (2026-2031). The thermal conductive polymer material market is driven by rising heat loads in electronics, electric vehicles, and data center equipment. These polymers provide heat transfer, electrical insulation, and lower component weight. Filled engineering polymers offer thermal conductivity of 2-25 W/m·K and can replace metal or ceramic assemblies in selected applications. AI-optimized racks operate at more than 100 kW per rack, increasing demand for thermal management materials in power distribution and server assemblies. Suppliers develop formulations with flame retardancy, dimensional stability, filler dispersion, and recyclability to meet OEM qualification requirements. Cell-to-pack battery designs also require materials that provide structural and thermal management functions.

Key Report Takeaways

* By polymer base, Polyamide (PA) held 37.45% of the thermal conductive polymer material market share in 2025 and is forecast to grow at a 13.12% CAGR through 2031.

* By end-user industry, Electrical and Electronics accounted for 40.24% of the thermal conductive polymer material market share in 2025, while Automotive is forecast to grow at a CAGR of 13.56% through 2031.

* By geography, North America held 42.82% of the thermal conductive polymer material market share in 2025, while Asia-Pacific is forecast to grow at a CAGR of 12.05% through 2031.

Key Market Trends

Global Thermal Conductive Polymer Material Market Trends and InsightsDrivers Impact Analysis*

Drivers | (~) % Impact on CAGR Forecast | Geographic Relevance | Impact Timeline

| Electronics Miniaturization and Rising Heat Flux | +2.8% | Global, the highest intensity in North America and East Asia | Short term (≤ 2 years) |

| Electrification of Vehicles and Battery Thermal Management | +2.5% | Global, the greatest near-term concentration in China and the EU | Medium term (2-4 years) |

| Metal Replacement Through Lightweight Molded Components | +1.8% | North America and Europe, the automotive supply chain core | Medium term (2-4 years) |

| Mainstream Adoption of Electrically Insulating Heat-Dissipation Materials | +1.5% | North America, Japan, and South Korea | Short term (≤ 2 years) |

| AI Data Centers, Power Electronics, and High-Density Computing | +1.6% | North America, the EU, and Taiwan | Short term (≤ 2 years) |

Source: Mordor Intelligence |

Competitive Landscape

Competitive Landscape

The thermally conductive polymer material market is fragmented. BASF, Covestro, Celanese, and DuPont compete through broad formulation portfolios, application engineering, and established OEM qualification relationships. Avient Corporation, RTP Company, and Ensinger focus on faster development cycles, lower minimum order quantities, and customized solutions for mid-market applications. Large chemical suppliers offer broad portfolios, while specialty compounders focus on responsive product development. After an automotive supplier qualifies a thermal PA grade for an inverter housing, the vehicle program typically specifies the base polymer, filler loading, and colorant system for its lifecycle.

This qualification process creates switching costs and supports multi-year supplier revenue after a grade passes thermal, electrical, and processing evaluations. In June 2025, BASF introduced Ultramid Advanced N3U42G6, a non-halogenated, flame-retardant PA9T grade that achieved UL 94 V-0 at 0.25 mm. KOSTAL Kontakt Systeme adopted the grade for its KS22 Class 4 high-voltage connector, supporting miniaturization in inverter and DC-DC converter assemblies. At COMPUTEX 2026, Covestro presented Makrolon TC solutions for AI data center infrastructure, including direct PCB overmolding for server and power distribution assemblies. These developments address requirements beyond thermal conductivity.

Flame retardancy, dimensional stability, filler dispersion, and recyclability influence OEM material qualification. Polyplastics commercially launched Durafide rG-PPS, a 40%-glass-filled recycled PPS, in December 2025. Recyclable thermally conductive grades and additive-manufacturing-compatible formulations remain areas of supplier differentiation. Chinese mid-market compounders are entering export markets with grades using domestically sourced boron nitride fillers, increasing price competition in markets where European and North American suppliers set performance benchmarks. UL 94 and IEC 60112 requirements remain barriers to entry, as suppliers with pre-certified grade libraries can complete qualification processes faster. BASF's Ultramid Advanced T1000 portfolio shows how test data and regulatory documentation can create competitive barriers.

Thermal Conductive Polymer Material Industry Leaders* Celanese Corporation

* SABIC

* DuPont

* Avient Corporation

* BASF

* *Disclaimer: Major Players sorted in no particular order

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Component Component 3 Scope Of The Report Bottom

Global Thermal Conductive Polymer Material Market Report ScopeThermally conductive polymer materials are specialized plastic composites designed to transfer heat away from hot components. Unlike standard plastics, which act as thermal insulators, these materials combine a base polymer resin with thermally conductive fillers, such as graphite, ceramic, or metal particles, to dissipate thermal energy safely.

The thermal conductive polymer material market is segmented by polymer base, end-user Industry, and geography. By polymer base, the market is segmented into polyamide (PA), polycarbonate (PC), polybutylene terephthalate (PBT), polyphenylene sulfide (PPS), polyetherimide (PEI), and other polymer bases. By end-user industry, the market is segmented into electrical and electronics, automotive, industrial, aerospace and defense, healthcare, and other end-user industries. The report also covers market size and forecasts for thermal conductive polymer material across 15 countries in major regions. The market sizes and forecasts are provided

ed in terms of value (USD).

By Polymer Base
Polyamide (PA) |
Polycarbonate (PC) |
Polybutylene Terephthalate (PBT) |
Polyphenylene Sulfide (PPS) |
Polyetherimide (PEI) |
Other Polymer Bases |

Segmentation Accordion Item

By Geography
Asia-Pacific | China |
| India |
| Japan |
| South Korea |
| ASEAN Countries |
| Rest of Asia-Pacific |
North America | United States |
| Canada |
| Mexico |
Europe | Germany |
| United Kingdom |
| France |
| Italy |
| NORDIC Countries |
| Rest of Europe |
South America | Brazil |
| Argentina |
| Rest of South America |
Middle East and Africa | Saudi Arabia |
| South Africa |
| Rest of Middle East and Africa |

Frequently Asked Questions

What is current market size of Thermal Conductive Polymer Material Market?

The thermal conductive polymer material market size was estimated at USD 202.34 million in 2025 and is estimated to grow from USD 224.70 million in 2026 to USD 386.37 million by 2031, at a CAGR of 11.45% during the forecast period (2026-2031).

Which polymer base leads to thermal conductive polymer materials?

Polyamide (PA) led with a 37.45% share in 2025 and is projected to grow at a 13.12% CAGR through 2031.

Which end-user sector grows fastest for thermal conductive polymer materials?

Automotive is forecast to grow at a 13.56% CAGR through 2031 as 800 V EV designs require more thermal management.

Which region has the largest demand for thermal conductive polymer materials?

North America held a 42.82% share in 2025, supported by data centers, automotive electrification, and semiconductor activity.