

Advanced Phase Change Materials Market Size, Share & Trends Analysis Report By Product (Paraffin, Salt Hydrates), By Application (Building & Construction, HVAC, Commercial Refrigeration), By Region, And Segment Forecasts, 2024 - 2030

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Abstracts

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Advanced Phase Change Materials Market Growth & Trends

The global advanced phase change materials market size is expected to reach USD 5.86 billion by 2030, registering a CAGR of 8.2% from 2024 to 2030, according to a new report by Grand View Research, Inc. Growing need to conserve energy across various industries and sectors is expected to be one of the major driving factors for the market. In addition, stringent regulations imposed on various industries to reduce greenhouse gases emission has also helped in developing the market for advanced phase change material. Consumption of APCM is expected to reduce the overall demand for energy by up to 50% by 2050. However, their high price compared to other insulating materials owing to lack of awareness among the consumers in underdeveloped countries is expected to hinder market growth over the forecast period.

In 2023, the paraffin segment accounted for 46.3% of the global market share. Paraffin has a high heat-storing capacity and are also stable in nature owing to which they are expected to witness significant growth over the forecast period. The salt hydrates segment is expected to witness a CAGR of 6.8% from 2024 to 2030. Salt hydrate materials have become attractive and are often used as high-performance phase change materials for thermal energy storage because of the characteristics they possess.

Advanced Phase Change Materials Market Report Highlights

Paraffin exhibits remarkable thermal storage capacity and freezes without supercooling. Paraffin stands out because it is chemically stable in multiple heating and freezing cycles with a high heat of fusion, and is compatible with extensive structural materials in encapsulation materials.

Salt hydrate materials have become attractive and are often used as high-performance phase change materials for thermal energy storage because of the characteristics they possess.

In 2023, the building and construction industry commanded a market share of 29.9%. The building & construction sector is expected to maintain its growth pattern and account for a significant share during the forecast period.

HVAC (Heating, Ventilation, Air-Conditioning) secured a 15.1% revenue share worldwide in 2023. New features that were incorporated into HVAC systems include the incorporation of highly developed phase change material for the storage of thermal energy during high time and the release of the thermal energy.

The advanced phase change material market in Europe led globally and accounted for a share of 36.9% in 2023. Europe's position is also expected to improve in the coming years.

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