

Global Advanced Phase Change Materials (PCM) Market Size, Manufacturers, Opportunities and Forecast to 2030

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Abstracts

Summary

Phase change materials (PCMs) are substances with a high enthalpy of fusion, also known as latent heat, meaning they can store large quantities of heat energy as they change phase. When melting, they absorb heat and maintain the temperature of the environment at a certain value until completely molten. When the temperature of the environment falls below the crystallisation temperature, the PCM will start to solidify, releasing large quantities of heat and maintaining the temperature until completely solid.

Latent heat storage can be achieved through liquid—>solid, solid—>liquid, solid—>gas and liquid—>gas phase changes. However, only solid—>liquid and liquid—>solid phase changes are practical for PCMs. Although liquid—gas transitions have a higher heat of transformation than solid—liquid transitions, liquid->gas phase changes are impractical for thermal storage because large volumes or high pressures are required to store the materials in their gas phase. Solid—solid phase changes are typically very slow and have a relatively low heat of transformation.

Phase change materials are products that release or absorb heat when they change from one phase to another (usually from solid to liquid or vice versa). These materials store thermal energy in the form of latent heat, which is released when they freeze or crystallize and absorbed when they melt at their respective melting/freezing temperature points. Hence, they are used in a broad range of applications that require thermal control and management.

Based on the technology of the material used, advanced PCM are broadly categorized



as inorganic PCM, organic PCM and Bio-based PCM.

According to APO Research, The global Advanced Phase Change Materials (PCM) market was estimated at US\$ million in 2023 and is projected to reach a revised size of US\$ million by 2030, witnessing a CAGR of xx% during the forecast period 2024-2030.

North American market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

Asia-Pacific market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

Europe market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

The major global manufacturers of Advanced Phase Change Materials (PCM) include BASF, Honeywell, Cryopak, Entropy Solutions Inc., Climator Sweden AB, Phase Change Energy Solutions, Outlast Technologies, Dow Building Solutions and Chemours Company, etc. In 2023, the world's top three vendors accounted for approximately % of the revenue.

Report Scope

This report aims to provide a comprehensive presentation of the global market for Advanced Phase Change Materials (PCM), with both quantitative and qualitative analysis, to help readers develop business/growth strategies, assess the market competitive situation, analyze their position in the current marketplace, and make informed business decisions regarding Advanced Phase Change Materials (PCM).

The Advanced Phase Change Materials (PCM) market size, estimations, and forecasts are provided in terms of sales volume (MT) and revenue (\$ millions), considering 2023 as the base year, with history and forecast data for the period from 2019 to 2030. This report segments the global Advanced Phase Change Materials (PCM) market comprehensively. Regional market sizes, concerning products by Type, by Application, and by players, are also provided. For a more in-depth understanding of the market, the report provides profiles of the competitive landscape, key competitors, and their



respective market ranks. The report also discusses technological trends and new product developments.

Key Companies & Market Share Insights

In this section, the readers will gain an understanding of the key players competing. This report has studied the key growth strategies, such as innovative trends and developments, intensification of product portfolio, mergers and acquisitions, collaborations, new product innovation, and geographical expansion, undertaken by these participants to maintain their presence. Apart from business strategies, the study includes current developments and key financials. The readers will also get access to the data related to global revenue, price, and sales by manufacturers for the period 2019-2024. This all-inclusive report will certainly serve the clients to stay updated and make effective decisions in their businesses. Some of the prominent players reviewed in the research report include:

BASF
Honeywell
Cryopak
Entropy Solutions Inc.
Climator Sweden AB
Phase Change Energy Solutions
Outlast Technologies
Dow Building Solutions
Chemours Company
PCM Energy Ltd
_

Rubitherm Technologies GmbH



Advanced Phase Change Materials (PCM) segment by Type
Organic
Inorganic
Bio-Based
Advanced Phase Change Materials (PCM) segment by Application
Building & Construction
Refrigeration
Consumer Goods
Others
Advanced Phase Change Materials (PCM) Segment by Region
North America
U.S.
Canada
Europe
Germany
France
U.K.
Italy
Russia



Asia-Pacific

Asia-racilic
China
Japan
South Korea
India
Australia
China Taiwan
Indonesia
Thailand
Malaysia
Latin America
Mexico
Brazil
Argentina
Middle East & Africa
Turkey
Saudi Arabia
UAE



High-impact rendering factors and drivers have been studied in this report to aid the readers to understand the general development. Moreover, the report includes restraints and challenges that may act as stumbling blocks on the way of the players. This will assist the users to be attentive and make informed decisions related to business. Specialists have also laid their focus on the upcoming business prospects.

Reasons to Buy This Report

- 1. This report will help the readers to understand the competition within the industries and strategies for the competitive environment to enhance the potential profit. The report also focuses on the competitive landscape of the global Advanced Phase Change Materials (PCM) market, and introduces in detail the market share, industry ranking, competitor ecosystem, market performance, new product development, operation situation, expansion, and acquisition. etc. of the main players, which helps the readers to identify the main competitors and deeply understand the competition pattern of the market.
- 2. This report will help stakeholders to understand the global industry status and trends of Advanced Phase Change Materials (PCM) and provides them with information on key market drivers, restraints, challenges, and opportunities.
- 3. This report will help stakeholders to understand competitors better and gain more insights to strengthen their position in their businesses. The competitive landscape section includes the market share and rank (in volume and value), competitor ecosystem, new product development, expansion, and acquisition.
- 4. This report stays updated with novel technology integration, features, and the latest developments in the market
- 5. This report helps stakeholders to gain insights into which regions to target globally
- 6. This report helps stakeholders to gain insights into the end-user perception concerning the adoption of Advanced Phase Change Materials (PCM).
- 7. This report helps stakeholders to identify some of the key players in the market and understand their valuable contribution.

Chapter Outline



Chapter 1: Introduces the study scope of this report, executive summary of market segments by type, market size segments for North America, Europe, Asia Pacific, Latin America, Middle East & Africa.

Chapter 2: Introduces the market dynamics, latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

Chapter 3: Detailed analysis of Advanced Phase Change Materials (PCM) manufacturers competitive landscape, price, sales, revenue, market share and ranking, latest development plan, merger, and acquisition information, etc.

Chapter 4: Sales, revenue of Advanced Phase Change Materials (PCM) in regional level. It provides a quantitative analysis of the market size and development potential of each region and introduces the future development prospects, and market space in the world.

Chapter 5: Introduces market segments by application, market size segment for North America, Europe, Asia Pacific, Latin America, Middle East & Africa.

Chapter 6: Provides profiles of key players, introducing the basic situation of the main companies in the market in detail, including product sales, revenue, price, gross margin, product introduction, recent development, etc.

Chapter 7, 8, 9, 10 and 11: North America, Europe, Asia Pacific, Latin America, Middle East & Africa, sales and revenue by country.

Chapter 12: Analysis of industrial chain, key raw materials, manufacturing cost, and market dynamics.

Chapter 13: Concluding Insights of the report.



Contents

1 MARKET OVERVIEW

- 1.1 Product Definition
- 1.2 Global Market Growth Prospects
- 1.2.1 Global Advanced Phase Change Materials (PCM) Market Size Estimates and Forecasts (2019-2030)
- 1.2.2 Global Advanced Phase Change Materials (PCM) Sales Estimates and Forecasts (2019-2030)
- 1.3 Advanced Phase Change Materials (PCM) Market by Type
 - 1.3.1 Organic
 - 1.3.2 Inorganic
 - 1.3.3 Bio-Based
- 1.4 Global Advanced Phase Change Materials (PCM) Market Size by Type
- 1.4.1 Global Advanced Phase Change Materials (PCM) Market Size Overview by Type (2019-2030)
- 1.4.2 Global Advanced Phase Change Materials (PCM) Historic Market Size Review by Type (2019-2024)
- 1.4.3 Global Advanced Phase Change Materials (PCM) Forecasted Market Size by Type (2025-2030)
- 1.5 Key Regions Market Size by Type
- 1.5.1 North America Advanced Phase Change Materials (PCM) Sales Breakdown by Type (2019-2024)
- 1.5.2 Europe Advanced Phase Change Materials (PCM) Sales Breakdown by Type (2019-2024)
- 1.5.3 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Breakdown by Type (2019-2024)
- 1.5.4 Latin America Advanced Phase Change Materials (PCM) Sales Breakdown by Type (2019-2024)
- 1.5.5 Middle East and Africa Advanced Phase Change Materials (PCM) Sales Breakdown by Type (2019-2024)

2 GLOBAL MARKET DYNAMICS

- 2.1 Advanced Phase Change Materials (PCM) Industry Trends
- 2.2 Advanced Phase Change Materials (PCM) Industry Drivers
- 2.3 Advanced Phase Change Materials (PCM) Industry Opportunities and Challenges
- 2.4 Advanced Phase Change Materials (PCM) Industry Restraints



3 MARKET COMPETITIVE LANDSCAPE BY COMPANY

- 3.1 Global Top Players by Advanced Phase Change Materials (PCM) Revenue (2019-2024)
- 3.2 Global Top Players by Advanced Phase Change Materials (PCM) Sales (2019-2024)
- 3.3 Global Top Players by Advanced Phase Change Materials (PCM) Price (2019-2024)
- 3.4 Global Advanced Phase Change Materials (PCM) Industry Company Ranking, 2022 VS 2023 VS 2024
- 3.5 Global Advanced Phase Change Materials (PCM) Key Company Manufacturing Sites & Headquarters
- 3.6 Global Advanced Phase Change Materials (PCM) Company, Product Type & Application
- 3.7 Global Advanced Phase Change Materials (PCM) Company Commercialization Time
- 3.8 Market Competitive Analysis
 - 3.8.1 Global Advanced Phase Change Materials (PCM) Market CR5 and HHI
- 3.8.2 Global Top 5 and 10 Advanced Phase Change Materials (PCM) Players Market Share by Revenue in 2023
- 3.8.3 2023 Advanced Phase Change Materials (PCM) Tier 1, Tier 2, and Tier

4 ADVANCED PHASE CHANGE MATERIALS (PCM) REGIONAL STATUS AND OUTLOOK

- 4.1 Global Advanced Phase Change Materials (PCM) Market Size and CAGR by Region: 2019 VS 2023 VS 2030
- 4.2 Global Advanced Phase Change Materials (PCM) Historic Market Size by Region
- 4.2.1 Global Advanced Phase Change Materials (PCM) Sales in Volume by Region (2019-2024)
- 4.2.2 Global Advanced Phase Change Materials (PCM) Sales in Value by Region (2019-2024)
- 4.2.3 Global Advanced Phase Change Materials (PCM) Sales (Volume & Value), Price and Gross Margin (2019-2024)
- 4.3 Global Advanced Phase Change Materials (PCM) Forecasted Market Size by Region
- 4.3.1 Global Advanced Phase Change Materials (PCM) Sales in Volume by Region (2025-2030)
- 4.3.2 Global Advanced Phase Change Materials (PCM) Sales in Value by Region



(2025-2030)

4.3.3 Global Advanced Phase Change Materials (PCM) Sales (Volume & Value), Price and Gross Margin (2025-2030)

5 ADVANCED PHASE CHANGE MATERIALS (PCM) BY APPLICATION

- 5.1 Advanced Phase Change Materials (PCM) Market by Application
 - 5.1.1 Building & Construction
 - 5.1.2 Refrigeration
 - 5.1.3 Consumer Goods
 - 5.1.4 Others
- 5.2 Global Advanced Phase Change Materials (PCM) Market Size by Application
- 5.2.1 Global Advanced Phase Change Materials (PCM) Market Size Overview by Application (2019-2030)
- 5.2.2 Global Advanced Phase Change Materials (PCM) Historic Market Size Review by Application (2019-2024)
- 5.2.3 Global Advanced Phase Change Materials (PCM) Forecasted Market Size by Application (2025-2030)
- 5.3 Key Regions Market Size by Application
- 5.3.1 North America Advanced Phase Change Materials (PCM) Sales Breakdown by Application (2019-2024)
- 5.3.2 Europe Advanced Phase Change Materials (PCM) Sales Breakdown by Application (2019-2024)
- 5.3.3 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Breakdown by Application (2019-2024)
- 5.3.4 Latin America Advanced Phase Change Materials (PCM) Sales Breakdown by Application (2019-2024)
- 5.3.5 Middle East and Africa Advanced Phase Change Materials (PCM) Sales Breakdown by Application (2019-2024)

6 COMPANY PROFILES

- **6.1 BASF**
 - 6.1.1 BASF Comapny Information
 - 6.1.2 BASF Business Overview
- 6.1.3 BASF Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
 - 6.1.4 BASF Advanced Phase Change Materials (PCM) Product Portfolio
 - 6.1.5 BASF Recent Developments



- 6.2 Honeywell
 - 6.2.1 Honeywell Comapny Information
 - 6.2.2 Honeywell Business Overview
- 6.2.3 Honeywell Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
 - 6.2.4 Honeywell Advanced Phase Change Materials (PCM) Product Portfolio
- 6.2.5 Honeywell Recent Developments
- 6.3 Cryopak
 - 6.3.1 Cryopak Comapny Information
 - 6.3.2 Cryopak Business Overview
- 6.3.3 Cryopak Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
- 6.3.4 Cryopak Advanced Phase Change Materials (PCM) Product Portfolio
- 6.3.5 Cryopak Recent Developments
- 6.4 Entropy Solutions Inc.
 - 6.4.1 Entropy Solutions Inc. Comapny Information
 - 6.4.2 Entropy Solutions Inc. Business Overview
 - 6.4.3 Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Sales,

Revenue and Gross Margin (2019-2024)

- 6.4.4 Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Product Portfolio
 - 6.4.5 Entropy Solutions Inc. Recent Developments
- 6.5 Climator Sweden AB
 - 6.5.1 Climator Sweden AB Comapny Information
 - 6.5.2 Climator Sweden AB Business Overview
- 6.5.3 Climator Sweden AB Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
- 6.5.4 Climator Sweden AB Advanced Phase Change Materials (PCM) Product Portfolio
- 6.5.5 Climator Sweden AB Recent Developments
- 6.6 Phase Change Energy Solutions
 - 6.6.1 Phase Change Energy Solutions Comapny Information
 - 6.6.2 Phase Change Energy Solutions Business Overview
 - 6.6.3 Phase Change Energy Solutions Advanced Phase Change Materials (PCM)

Sales, Revenue and Gross Margin (2019-2024)

- 6.6.4 Phase Change Energy Solutions Advanced Phase Change Materials (PCM)
- **Product Portfolio**
- 6.6.5 Phase Change Energy Solutions Recent Developments
- 6.7 Outlast Technologies



- 6.7.1 Outlast Technologies Comapny Information
- 6.7.2 Outlast Technologies Business Overview
- 6.7.3 Outlast Technologies Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
- 6.7.4 Outlast Technologies Advanced Phase Change Materials (PCM) Product Portfolio
- 6.7.5 Outlast Technologies Recent Developments
- 6.8 Dow Building Solutions
 - 6.8.1 Dow Building Solutions Comapny Information
 - 6.8.2 Dow Building Solutions Business Overview
- 6.8.3 Dow Building Solutions Advanced Phase Change Materials (PCM) Sales,

Revenue and Gross Margin (2019-2024)

- 6.8.4 Dow Building Solutions Advanced Phase Change Materials (PCM) Product Portfolio
- 6.8.5 Dow Building Solutions Recent Developments
- 6.9 Chemours Company
 - 6.9.1 Chemours Company Comapny Information
 - 6.9.2 Chemours Company Business Overview
- 6.9.3 Chemours Company Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
- 6.9.4 Chemours Company Advanced Phase Change Materials (PCM) Product Portfolio
- 6.9.5 Chemours Company Recent Developments
- 6.10 PCM Energy Ltd
 - 6.10.1 PCM Energy Ltd Comapny Information
 - 6.10.2 PCM Energy Ltd Business Overview
- 6.10.3 PCM Energy Ltd Advanced Phase Change Materials (PCM) Sales, Revenue and Gross Margin (2019-2024)
 - 6.10.4 PCM Energy Ltd Advanced Phase Change Materials (PCM) Product Portfolio
 - 6.10.5 PCM Energy Ltd Recent Developments
- 6.11 Rubitherm Technologies GmbH
 - 6.11.1 Rubitherm Technologies GmbH Comapny Information
 - 6.11.2 Rubitherm Technologies GmbH Business Overview
 - 6.11.3 Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM)

Sales, Revenue and Gross Margin (2019-2024)

- 6.11.4 Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Product Portfolio
- 6.11.5 Rubitherm Technologies GmbH Recent Developments



7 NORTH AMERICA BY COUNTRY

- 7.1 North America Advanced Phase Change Materials (PCM) Sales by Country
- 7.1.1 North America Advanced Phase Change Materials (PCM) Sales Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 7.1.2 North America Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)
- 7.1.3 North America Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030)
- 7.2 North America Advanced Phase Change Materials (PCM) Market Size by Country
- 7.2.1 North America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 7.2.2 North America Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024)
- 7.2.3 North America Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030)

8 EUROPE BY COUNTRY

- 8.1 Europe Advanced Phase Change Materials (PCM) Sales by Country
- 8.1.1 Europe Advanced Phase Change Materials (PCM) Sales Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 8.1.2 Europe Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)
- 8.1.3 Europe Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030)
- 8.2 Europe Advanced Phase Change Materials (PCM) Market Size by Country
- 8.2.1 Europe Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 8.2.2 Europe Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024)
- 8.2.3 Europe Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030)

9 ASIA-PACIFIC BY COUNTRY

9.1 Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Country 9.1.1 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030



- 9.1.2 Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)
- 9.1.3 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030)
- 9.2 Asia-Pacific Advanced Phase Change Materials (PCM) Market Size by Country
- 9.2.1 Asia-Pacific Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 9.2.2 Asia-Pacific Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024)
- 9.2.3 Asia-Pacific Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030)

10 LATIN AMERICA BY COUNTRY

- 10.1 Latin America Advanced Phase Change Materials (PCM) Sales by Country
- 10.1.1 Latin America Advanced Phase Change Materials (PCM) Sales Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 10.1.2 Latin America Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)
- 10.1.3 Latin America Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030)
- 10.2 Latin America Advanced Phase Change Materials (PCM) Market Size by Country 10.2.1 Latin America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 10.2.2 Latin America Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024)
- 10.2.3 Latin America Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030)

11 MIDDLE EAST AND AFRICA BY COUNTRY

- 11.1 Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Country
- 11.1.1 Middle East and Africa Advanced Phase Change Materials (PCM) Sales Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 11.1.2 Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)
- 11.1.3 Middle East and Africa Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030)



- 11.2 Middle East and Africa Advanced Phase Change Materials (PCM) Market Size by Country
- 11.2.1 Middle East and Africa Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country: 2019 VS 2023 VS 2030
- 11.2.2 Middle East and Africa Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024)
- 11.2.3 Middle East and Africa Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030)

12 VALUE CHAIN AND SALES CHANNELS ANALYSIS

- 12.1 Advanced Phase Change Materials (PCM) Value Chain Analysis
 - 12.1.1 Advanced Phase Change Materials (PCM) Key Raw Materials
 - 12.1.2 Key Raw Materials Price
 - 12.1.3 Raw Materials Key Suppliers
 - 12.1.4 Manufacturing Cost Structure
 - 12.1.5 Advanced Phase Change Materials (PCM) Production Mode & Process
- 12.2 Advanced Phase Change Materials (PCM) Sales Channels Analysis
 - 12.2.1 Direct Comparison with Distribution Share
 - 12.2.2 Advanced Phase Change Materials (PCM) Distributors
- 12.2.3 Advanced Phase Change Materials (PCM) Customers

13 CONCLUDING INSIGHTS

14 APPENDIX

- 14.1 Reasons for Doing This Study
- 14.2 Research Methodology
- 14.3 Research Process
- 14.4 Authors List of This Report
- 14.5 Data Source
 - 14.5.1 Secondary Sources
 - 14.5.2 Primary Sources
- 14.6 Disclaimer



List Of Tables

LIST OF TABLES

- Table 1. Major Company of Organic
- Table 2. Major Company of Inorganic
- Table 3. Major Company of Bio-Based
- Table 4. Global Advanced Phase Change Materials (PCM) Sales by Type (2019 VS 2023 VS 2030) & (US\$ Million)
- Table 5. Global Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)
- Table 6. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Type (2019-2024)
- Table 7. Global Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)
- Table 8. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Type (2019-2024)
- Table 9. Global Advanced Phase Change Materials (PCM) Price by Type (2019-2024) & (USD/MT)
- Table 10. Global Advanced Phase Change Materials (PCM) Sales by Type (2025-2030) & (MT)
- Table 11. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Type (2025-2030)
- Table 12. Global Advanced Phase Change Materials (PCM) Sales by Type (2025-2030) & (US\$ Million)
- Table 13. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Type (2025-2030)
- Table 14. Global Advanced Phase Change Materials (PCM) Price by Type (2025-2030) & (USD/MT)
- Table 15. North America Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)
- Table 16. North America Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)
- Table 17. Europe Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)
- Table 18. Europe Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)
- Table 19. Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)



Table 20. Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)

Table 21. Latin America Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)

Table 22. Latin America Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)

Table 23. Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (MT)

Table 24. Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Type (2019-2024) & (US\$ Million)

Table 25. Advanced Phase Change Materials (PCM) Industry Trends

Table 26. Advanced Phase Change Materials (PCM) Industry Drivers

Table 27. Advanced Phase Change Materials (PCM) Industry Opportunities and Challenges

Table 28. Advanced Phase Change Materials (PCM) Industry Restraints

Table 29. Global Advanced Phase Change Materials (PCM) Sales Revenue by Company (US\$ Million) & (2019-2024)

Table 30. Global Advanced Phase Change Materials (PCM) Revenue Market Share by Company (2019-2024)

Table 31. Global Advanced Phase Change Materials (PCM) Sales by Company (2019-2024) & (MT)

Table 32. Global Advanced Phase Change Materials (PCM) Sales Share by Company (2019-2024)

Table 33. Global Advanced Phase Change Materials (PCM) Market Price by Company (2019-2024) & (USD/MT)

Table 34. Global Advanced Phase Change Materials (PCM) Industry Company Ranking, 2022 VS 2023 VS 2024

Table 35. Global Advanced Phase Change Materials (PCM) Key Company Manufacturing Sites & Headquarters

Table 36. Global Advanced Phase Change Materials (PCM) Company, Product Type & Application

Table 37. Global Advanced Phase Change Materials (PCM) Company Commercialization Time

Table 38. Global Company Market Concentration Ratio (CR5 and HHI)

Table 39. Global Advanced Phase Change Materials (PCM) by Company Type (Tier 1, Tier 2, and Tier 3) & (based on the Revenue of 2023)

Table 40. Global Advanced Phase Change Materials (PCM) Market Size Comparison by Region (US\$ Million): 2019 VS 2023 VS 2030

Table 41. Global Advanced Phase Change Materials (PCM) Sales by Region



(2019-2024) & (MT)

Table 42. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Region (2019-2024)

Table 43. Global Advanced Phase Change Materials (PCM) Sales by Region (2019-2024) & (US\$ Million)

Table 44. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Region (2019-2024)

Table 45. Global Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 46. Global Advanced Phase Change Materials (PCM) Sales by Region (2025-2030) & (MT)

Table 47. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Region (2025-2030)

Table 48. Global Advanced Phase Change Materials (PCM) Sales by Region (2025-2030) & (US\$ Million)

Table 49. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Region (2025-2030)

Table 50. Global Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2025-2030)

Table 51. Global Advanced Phase Change Materials (PCM) Sales by Application (2019 VS 2023 VS 2030) & (US\$ Million)

Table 52. Global Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 53. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Application (2019-2024)

Table 54. Global Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 55. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Application (2019-2024)

Table 56. Global Advanced Phase Change Materials (PCM) Price by Application (2019-2024) & (USD/MT)

Table 57. Global Advanced Phase Change Materials (PCM) Sales by Application (2025-2030) & (MT)

Table 58. Global Advanced Phase Change Materials (PCM) Sales Market Share in Volume by Application (2025-2030)

Table 59. Global Advanced Phase Change Materials (PCM) Sales by Application (2025-2030) & (US\$ Million)

Table 60. Global Advanced Phase Change Materials (PCM) Sales Market Share in Value by Application (2025-2030)



Table 61. Global Advanced Phase Change Materials (PCM) Price by Application (2025-2030) & (USD/MT)

Table 62. North America Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 63. North America Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 64. Europe Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 65. Europe Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 66. Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 67. Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 68. Latin America Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 69. Latin America Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 70. Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (MT)

Table 71. Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Application (2019-2024) & (US\$ Million)

Table 72. BASF Company Information

Table 73. BASF Business Overview

Table 74. BASF Advanced Phase Change Materials (PCM) Sales (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 75. BASF Advanced Phase Change Materials (PCM) Product Portfolio

Table 76. BASF Recent Development

Table 77. Honeywell Company Information

Table 78. Honeywell Business Overview

Table 79. Honeywell Advanced Phase Change Materials (PCM) Sales (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 80. Honeywell Advanced Phase Change Materials (PCM) Product Portfolio

Table 81. Honeywell Recent Development

Table 82. Cryopak Company Information

Table 83. Cryopak Business Overview

Table 84. Cryopak Advanced Phase Change Materials (PCM) Sales (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 85. Cryopak Advanced Phase Change Materials (PCM) Product Portfolio



- Table 86. Cryopak Recent Development
- Table 87. Entropy Solutions Inc. Company Information
- Table 88. Entropy Solutions Inc. Business Overview
- Table 89. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Sales (MT),
- Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 90. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Product Portfolio
- Table 91. Entropy Solutions Inc. Recent Development
- Table 92. Climator Sweden AB Company Information
- Table 93. Climator Sweden AB Business Overview
- Table 94. Climator Sweden AB Advanced Phase Change Materials (PCM) Sales (MT),
- Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 95. Climator Sweden AB Advanced Phase Change Materials (PCM) Product Portfolio
- Table 96. Climator Sweden AB Recent Development
- Table 97. Phase Change Energy Solutions Company Information
- Table 98. Phase Change Energy Solutions Business Overview
- Table 99. Phase Change Energy Solutions Advanced Phase Change Materials (PCM)
- Sales (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 100. Phase Change Energy Solutions Advanced Phase Change Materials (PCM) Product Portfolio
- Table 101. Phase Change Energy Solutions Recent Development
- Table 102. Outlast Technologies Company Information
- Table 103. Outlast Technologies Business Overview
- Table 104. Outlast Technologies Advanced Phase Change Materials (PCM) Sales (MT),
- Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 105. Outlast Technologies Advanced Phase Change Materials (PCM) Product Portfolio
- Table 106. Outlast Technologies Recent Development
- Table 107. Dow Building Solutions Company Information
- Table 108. Dow Building Solutions Business Overview
- Table 109. Dow Building Solutions Advanced Phase Change Materials (PCM) Sales
- (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 110. Dow Building Solutions Advanced Phase Change Materials (PCM) Product Portfolio
- Table 111. Dow Building Solutions Recent Development
- Table 112. Chemours Company Company Information
- Table 113. Chemours Company Business Overview
- Table 114. Chemours Company Advanced Phase Change Materials (PCM) Sales (MT),



Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 115. Chemours Company Advanced Phase Change Materials (PCM) Product Portfolio

Table 116. Chemours Company Recent Development

Table 117. PCM Energy Ltd Company Information

Table 118. PCM Energy Ltd Business Overview

Table 119. PCM Energy Ltd Advanced Phase Change Materials (PCM) Sales (MT),

Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 120. PCM Energy Ltd Advanced Phase Change Materials (PCM) Product Portfolio

Table 121. PCM Energy Ltd Recent Development

Table 122. Rubitherm Technologies GmbH Company Information

Table 123. Rubitherm Technologies GmbH Business Overview

Table 124. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM)

Sales (MT), Revenue (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 125. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Product Portfolio

Table 126. Rubitherm Technologies GmbH Recent Development

Table 127. North America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (MT): 2019 VS 2023 VS 2030

Table 128. North America Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)

Table 129. North America Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)

Table 130. North America Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030) & (MT)

Table 131. North America Advanced Phase Change Materials (PCM) Sales Market Share Forecast by Country (2025-2030)

Table 132. North America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (US\$ Million): 2019 VS 2023 VS 2030

Table 133. North America Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024) & (US\$ Million)

Table 134. North America Advanced Phase Change Materials (PCM) Market Share by Country (2019-2024)

Table 135. North America Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030) & (US\$ Million)

Table 136. North America Advanced Phase Change Materials (PCM) Market Share Forecast by Country (2025-2030)

Table 137. Europe Advanced Phase Change Materials (PCM) Market Size Growth Rate



(CAGR) by Country (MT): 2019 VS 2023 VS 2030

Table 138. Europe Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)

Table 139. Europe Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)

Table 140. Europe Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030) & (MT)

Table 141. Europe Advanced Phase Change Materials (PCM) Sales Market Share Forecast by Country (2025-2030)

Table 142. Europe Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (US\$ Million): 2019 VS 2023 VS 2030

Table 143. Europe Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024) & (US\$ Million)

Table 144. Europe Advanced Phase Change Materials (PCM) Market Share by Country (2019-2024)

Table 145. Europe Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030) & (US\$ Million)

Table 146. Europe Advanced Phase Change Materials (PCM) Market Share Forecast by Country (2025-2030)

Table 147. Asia-Pacific Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (MT): 2019 VS 2023 VS 2030

Table 148. Asia-Pacific Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)

Table 149. Asia-Pacific Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)

Table 150. Asia-Pacific Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030) & (MT)

Table 151. Asia-Pacific Advanced Phase Change Materials (PCM) Sales Market Share Forecast by Country (2025-2030)

Table 152. Asia-Pacific Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (US\$ Million): 2019 VS 2023 VS 2030

Table 153. Asia-Pacific Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024) & (US\$ Million)

Table 154. Asia-Pacific Advanced Phase Change Materials (PCM) Market Share by Country (2019-2024)

Table 155. Asia-Pacific Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030) & (US\$ Million)

Table 156. Asia-Pacific Advanced Phase Change Materials (PCM) Market Share Forecast by Country (2025-2030)



Table 157. Latin America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (MT): 2019 VS 2023 VS 2030

Table 158. Latin America Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)

Table 159. Latin America Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)

Table 160. Latin America Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030) & (MT)

Table 161. Latin America Advanced Phase Change Materials (PCM) Sales Market Share Forecast by Country (2025-2030)

Table 162. Latin America Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (US\$ Million): 2019 VS 2023 VS 2030

Table 163. Latin America Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024) & (US\$ Million)

Table 164. Latin America Advanced Phase Change Materials (PCM) Market Share by Country (2019-2024)

Table 165. Latin America Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030) & (US\$ Million)

Table 166. Latin America Advanced Phase Change Materials (PCM) Market Share Forecast by Country (2025-2030)

Table 167. Middle East and Africa Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (MT): 2019 VS 2023 VS 2030

Table 168. Middle East and Africa Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)

Table 169. Middle East and Africa Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)

Table 170. Middle East and Africa Advanced Phase Change Materials (PCM) Sales Forecast by Country (2025-2030) & (MT)

Table 171. Middle East and Africa Advanced Phase Change Materials (PCM) Sales Market Share Forecast by Country (2025-2030)

Table 172. Middle East and Africa Advanced Phase Change Materials (PCM) Market Size Growth Rate (CAGR) by Country (US\$ Million): 2019 VS 2023 VS 2030

Table 173. Middle East and Africa Advanced Phase Change Materials (PCM) Market Size by Country (2019-2024) & (US\$ Million)

Table 174. Middle East and Africa Advanced Phase Change Materials (PCM) Market Share by Country (2019-2024)

Table 175. Middle East and Africa Advanced Phase Change Materials (PCM) Market Size Forecast by Country (2025-2030) & (US\$ Million)

Table 176. Middle East and Africa Advanced Phase Change Materials (PCM) Market



Share Forecast by Country (2025-2030)

Table 177. Key Raw Materials

Table 178. Raw Materials Key Suppliers

Table 179. Advanced Phase Change Materials (PCM) Distributors List

Table 180. Advanced Phase Change Materials (PCM) Customers List

Table 181. Research Programs/Design for This Report

Table 182. Authors List of This Report

Table 183. Secondary Sources

Table 184. Primary Sources



List Of Figures

LIST OF FIGURES

Figure 1. Advanced Phase Change Materials (PCM) Product Picture

Figure 2. Global Advanced Phase Change Materials (PCM) Market Size (US\$ Million), 2019 VS 2023 VS 2030

Figure 3. Global Advanced Phase Change Materials (PCM) Market Size (2019-2030) & (US\$ Million)



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