

# Global Advanced Phase Change Materials (PCM) Market by Size, by Type, by Application, by Region, History and Forecast 2019-2030

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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 is projected to grow from US\$ million in 2024 to US\$ million by 2030, at a Compound Annual Growth Rate (CAGR) of % during the forecast period.

The US & Canada 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.

The China 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.

In terms of production side, this report researches the Advanced Phase Change Materials (PCM) production, growth rate, market share by manufacturers and by region (region level and country level), from 2019 to 2024, and forecast to 2030.

In terms of consumption side, this report focuses on the sales of Advanced Phase Change Materials (PCM) by region (region level and country level), by company, by type and by application. from 2019 to 2024 and forecast to 2030.

This report presents an overview of global market for Advanced Phase Change Materials (PCM), capacity, output, revenue and price. Analyses of the global market trends, with historic market revenue or sales data for 2019 - 2023, estimates for 2024,



and projections of CAGR through 2030.

This report researches the key producers of Advanced Phase Change Materials (PCM), also provides the consumption of main regions and countries. Of the upcoming market potential for Advanced Phase Change Materials (PCM), and key regions or countries of focus to forecast this market into various segments and sub-segments. Country specific data and market value analysis for the U.S., Canada, Mexico, Brazil, China, Japan, South Korea, Southeast Asia, India, Germany, the U.K., Italy, Middle East, Africa, and Other Countries.

This report focuses on the Advanced Phase Change Materials (PCM) sales, revenue, market share and industry ranking of main manufacturers, data from 2019 to 2024. Identification of the major stakeholders in the global Advanced Phase Change Materials (PCM) market, and analysis of their competitive landscape and market positioning based on recent developments and segmental revenues. This report will help stakeholders to understand the competitive landscape and gain more insights and position their businesses and market strategies in a better way.

This report analyzes the segments data by type and by application, sales, revenue, and price, from 2019 to 2030. Evaluation and forecast the market size for Advanced Phase Change Materials (PCM) sales, projected growth trends, production technology, application and end-user industry.

Advanced Phase Change Materials (PCM) segment by Company

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	
Advan	ced 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		
	China	
	Japan	
	South Korea	
	India	
	Australia	
	China Taiwan	
	Indonesia	
	Thailand	
	Malaysia	
Latin A	America	
	Mexico	
	Brazil	
	Argentina	

Middle East & Africa



Turkey

Saudi Arabia

UAE

### Study Objectives

- 1. To analyze and research the global status and future forecast, involving, production, value, consumption, growth rate (CAGR), market share, historical and forecast.
- 2. To present the key manufacturers, capacity, production, revenue, market share, and Recent Developments.
- 3. To split the breakdown data by regions, type, manufacturers, and Application.
- 4. To analyze the global and key regions market potential and advantage, opportunity and challenge, restraints, and risks.
- 5. To identify significant trends, drivers, influence factors in global and regions.
- 6. To analyze competitive developments such as expansions, agreements, new product launches, and acquisitions in the market.

### 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: Provides an overview of the Advanced Phase Change Materials (PCM) market, including product definition, global market growth prospects, production value, capacity, and average price forecasts (2019-2030).

Chapter 2: Analysis key trends, drivers, challenges, and opportunities within the global Advanced Phase Change Materials (PCM) industry.

Chapter 3: Detailed analysis of Advanced Phase Change Materials (PCM) market competition landscape. Including Advanced Phase Change Materials (PCM) manufacturers' output value, output and average price from 2019 to 2024, as well as competition analysis indicators such as origin, product type, application, merger and acquisition information, etc.

Chapter 4: Provides the analysis of various market segments by type, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different market segments.

Chapter 5: Provides the analysis of various market segments by application, covering the market size and development potential of each market segment, to help readers find



the blue ocean market in different downstream markets.

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

Chapter 7: Production/Production Value of Advanced Phase Change Materials (PCM) by region. It provides a quantitative analysis of the market size and development potential of each region in the next six years.

Chapter 8: Consumption of Advanced Phase Change Materials (PCM) in regional level and country level. It provides a quantitative analysis of the market size and development potential of each region and its main countries and introduces the market development, future development prospects, market space, and production of each country in the world.

Chapter 9: Analysis of industrial chain, including the upstream and downstream of the industry.

Chapter 10: 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) Production Value Estimates and Forecasts (2019-2030)
- 1.2.2 Global Advanced Phase Change Materials (PCM) Production Capacity Estimates and Forecasts (2019-2030)
- 1.2.3 Global Advanced Phase Change Materials (PCM) Production Estimates and Forecasts (2019-2030)
- 1.2.4 Global Advanced Phase Change Materials (PCM) Market Average Price (2019-2030)
- 1.3 Assumptions and Limitations
- 1.4 Study Goals and Objectives

# 2 GLOBAL ADVANCED PHASE CHANGE MATERIALS (PCM) 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 ADVANCED PHASE CHANGE MATERIALS (PCM) MARKET BY MANUFACTURERS

- 3.1 Global Advanced Phase Change Materials (PCM) Production Value by Manufacturers (2019-2024)
- 3.2 Global Advanced Phase Change Materials (PCM) Production by Manufacturers (2019-2024)
- 3.3 Global Advanced Phase Change Materials (PCM) Average Price by Manufacturers (2019-2024)
- 3.4 Global Advanced Phase Change Materials (PCM) Industry Manufacturers Ranking, 2022 VS 2023 VS 2024
- 3.5 Global Advanced Phase Change Materials (PCM) Key Manufacturers Manufacturing Sites & Headquarters
- 3.6 Global Advanced Phase Change Materials (PCM) Manufacturers, Product Type & Application



- 3.7 Global Advanced Phase Change Materials (PCM) Manufacturers 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 Production Value in 2023
  - 3.8.3 2023 Advanced Phase Change Materials (PCM) Tier 1, Tier 2, and Tier

## 4 ADVANCED PHASE CHANGE MATERIALS (PCM) MARKET BY TYPE

- 4.1 Advanced Phase Change Materials (PCM) Type Introduction
  - 4.1.1 Organic
  - 4.1.2 Inorganic
  - 4.1.3 Bio-Based
- 4.2 Global Advanced Phase Change Materials (PCM) Production by Type
- 4.2.1 Global Advanced Phase Change Materials (PCM) Production by Type (2019 VS 2023 VS 2030)
- 4.2.2 Global Advanced Phase Change Materials (PCM) Production by Type (2019-2030)
- 4.2.3 Global Advanced Phase Change Materials (PCM) Production Market Share by Type (2019-2030)
- 4.3 Global Advanced Phase Change Materials (PCM) Production Value by Type
- 4.3.1 Global Advanced Phase Change Materials (PCM) Production Value by Type (2019 VS 2023 VS 2030)
- 4.3.2 Global Advanced Phase Change Materials (PCM) Production Value by Type (2019-2030)
- 4.3.3 Global Advanced Phase Change Materials (PCM) Production Value Market Share by Type (2019-2030)

### 5 ADVANCED PHASE CHANGE MATERIALS (PCM) MARKET BY APPLICATION

- 5.1 Advanced Phase Change Materials (PCM) Application Introduction
  - 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) Production by Application
- 5.2.1 Global Advanced Phase Change Materials (PCM) Production by Application (2019 VS 2023 VS 2030)



- 5.2.2 Global Advanced Phase Change Materials (PCM) Production by Application (2019-2030)
- 5.2.3 Global Advanced Phase Change Materials (PCM) Production Market Share by Application (2019-2030)
- 5.3 Global Advanced Phase Change Materials (PCM) Production Value by Application
- 5.3.1 Global Advanced Phase Change Materials (PCM) Production Value by Application (2019 VS 2023 VS 2030)
- 5.3.2 Global Advanced Phase Change Materials (PCM) Production Value by Application (2019-2030)
- 5.3.3 Global Advanced Phase Change Materials (PCM) Production Value Market Share by Application (2019-2030)

### **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) Production, Value 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) Production, Value 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) Production, Value 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) Production,



Value 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) Production, Value 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) Production, Value 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) Production, Value 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) Production, Value 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) Production, Value 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) Production, Value 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) Production, Value 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 GLOBAL ADVANCED PHASE CHANGE MATERIALS (PCM) PRODUCTION BY REGION

- 7.1 Global Advanced Phase Change Materials (PCM) Production by Region: 2019 VS 2023 VS 2030
- 7.2 Global Advanced Phase Change Materials (PCM) Production by Region (2019-2030)
- 7.2.1 Global Advanced Phase Change Materials (PCM) Production by Region: 2019-2024
- 7.2.2 Global Advanced Phase Change Materials (PCM) Production by Region (2025-2030)
- 7.3 Global Advanced Phase Change Materials (PCM) Production by Region: 2019 VS 2023 VS 2030
- 7.4 Global Advanced Phase Change Materials (PCM) Production Value by Region (2019-2030)
- 7.4.1 Global Advanced Phase Change Materials (PCM) Production Value by Region: 2019-2024
- 7.4.2 Global Advanced Phase Change Materials (PCM) Production Value by Region



(2025-2030)

- 7.5 Global Advanced Phase Change Materials (PCM) Market Price Analysis by Region (2019-2024)
- 7.6 Regional Production Value Trends (2019-2030)
- 7.6.1 North America Advanced Phase Change Materials (PCM) Production Value (2019-2030)
- 7.6.2 Europe Advanced Phase Change Materials (PCM) Production Value (2019-2030)
- 7.6.3 Asia-Pacific Advanced Phase Change Materials (PCM) Production Value (2019-2030)
- 7.6.4 Latin America Advanced Phase Change Materials (PCM) Production Value (2019-2030)
- 7.6.5 Middle East & Africa Advanced Phase Change Materials (PCM) Production Value (2019-2030)

# 8 GLOBAL ADVANCED PHASE CHANGE MATERIALS (PCM) CONSUMPTION BY REGION

- 8.1 Global Advanced Phase Change Materials (PCM) Consumption by Region: 2019 VS 2023 VS 2030
- 8.2 Global Advanced Phase Change Materials (PCM) Consumption by Region (2019-2030)
- 8.2.1 Global Advanced Phase Change Materials (PCM) Consumption by Region (2019-2024)
- 8.2.2 Global Advanced Phase Change Materials (PCM) Consumption by Region (2025-2030)
- 8.3 North America
- 8.3.1 North America Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030
- 8.3.2 North America Advanced Phase Change Materials (PCM) Consumption by Country (2019-2030)
  - 8.3.3 U.S.
  - 8.3.4 Canada
- 8.4 Europe
- 8.4.1 Europe Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030
- 8.4.2 Europe Advanced Phase Change Materials (PCM) Consumption by Country (2019-2030)
  - 8.4.3 Germany



- 8.4.4 France
- 8.4.5 U.K.
- 8.4.6 Italy
- 8.4.7 Netherlands
- 8.5 Asia Pacific
- 8.5.1 Asia Pacific Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030
- 8.5.2 Asia Pacific Advanced Phase Change Materials (PCM) Consumption by Country (2019-2030)
  - 8.5.3 China
  - 8.5.4 Japan
- 8.5.5 South Korea
- 8.5.6 Southeast Asia
- 8.5.7 India
- 8.5.8 Australia
- 8.6 LAMEA
- 8.6.1 LAMEA Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030
- 8.6.2 LAMEA Advanced Phase Change Materials (PCM) Consumption by Country (2019-2030)
  - 8.6.3 Mexico
  - 8.6.4 Brazil
  - 8.6.5 Turkey
  - 8.6.6 GCC Countries

#### 9 VALUE CHAIN AND SALES CHANNELS ANALYSIS

- 9.1 Advanced Phase Change Materials (PCM) Value Chain Analysis
  - 9.1.1 Advanced Phase Change Materials (PCM) Key Raw Materials
  - 9.1.2 Raw Materials Key Suppliers
  - 9.1.3 Manufacturing Cost Structure
  - 9.1.4 Advanced Phase Change Materials (PCM) Production Mode & Process
- 9.2 Advanced Phase Change Materials (PCM) Sales Channels Analysis
  - 9.2.1 Direct Comparison with Distribution Share
  - 9.2.2 Advanced Phase Change Materials (PCM) Distributors
  - 9.2.3 Advanced Phase Change Materials (PCM) Customers

### 10 CONCLUDING INSIGHTS



### 11 APPENDIX

- 11.1 Reasons for Doing This Study
- 11.2 Research Methodology
- 11.3 Research Process
- 11.4 Authors List of This Report
- 11.5 Data Source
  - 11.5.1 Secondary Sources
  - 11.5.2 Primary Sources
- 11.6 Disclaimer



# **List Of Tables**

### LIST OF TABLES

- Table 1. Advanced Phase Change Materials (PCM) Industry Trends
- Table 2. Advanced Phase Change Materials (PCM) Industry Drivers
- Table 3. Advanced Phase Change Materials (PCM) Industry Opportunities and Challenges
- Table 4. Advanced Phase Change Materials (PCM) Industry Restraints
- Table 5. Global Advanced Phase Change Materials (PCM) Production Value by Manufacturers (US\$ Million) & (2019-2024)
- Table 6. Global Advanced Phase Change Materials (PCM) Production Value Market Share by Manufacturers (2019-2024)
- Table 7. Global Advanced Phase Change Materials (PCM) Production by Manufacturers (MT) & (2019-2024)
- Table 8. Global Advanced Phase Change Materials (PCM) Production Market Share by Manufacturers
- Table 9. Global Advanced Phase Change Materials (PCM) Average Price (USD/MT) of Manufacturers (2019-2024)
- Table 10. Global Advanced Phase Change Materials (PCM) Industry Manufacturers Ranking, 2022 VS 2023 VS 2024
- Table 11. Global Advanced Phase Change Materials (PCM) Industry Manufacturers Ranking, 2022 VS 2023 VS 2024
- Table 12. Global Advanced Phase Change Materials (PCM) Key Manufacturers Manufacturing Sites & Headquarters
- Table 13. Global Advanced Phase Change Materials (PCM) Manufacturers, Product Type & Application
- Table 14. Global Advanced Phase Change Materials (PCM) Manufacturers Commercialization Time
- Table 15. Global Manufacturers Market Concentration Ratio (CR5 and HHI)
- Table 16. Global Advanced Phase Change Materials (PCM) by Manufacturers Type
- (Tier 1, Tier 2, and Tier 3) & (based on the Production Value of 2023)
- Table 17. Major Manufacturers of Organic
- Table 18. Major Manufacturers of Inorganic
- Table 19. Major Manufacturers of Bio-Based
- Table 20. Global Advanced Phase Change Materials (PCM) Production by type 2019 VS 2023 VS 2030 (MT)
- Table 21. Global Advanced Phase Change Materials (PCM) Production by type (2019-2024) & (MT)



- Table 22. Global Advanced Phase Change Materials (PCM) Production by type (2025-2030) & (MT)
- Table 23. Global Advanced Phase Change Materials (PCM) Production Market Share by type (2019-2024)
- Table 24. Global Advanced Phase Change Materials (PCM) Production Market Share by type (2025-2030)
- Table 25. Global Advanced Phase Change Materials (PCM) Production Value by type 2019 VS 2023 VS 2030 (MT)
- Table 26. Global Advanced Phase Change Materials (PCM) Production Value by type (2019-2024) & (MT)
- Table 27. Global Advanced Phase Change Materials (PCM) Production Value by type (2025-2030) & (MT)
- Table 28. Global Advanced Phase Change Materials (PCM) Production Value Market Share by type (2019-2024)
- Table 29. Global Advanced Phase Change Materials (PCM) Production Value Market Share by type (2025-2030)
- Table 30. Major Manufacturers of Building & Construction
- Table 31. Major Manufacturers of Refrigeration
- Table 32. Major Manufacturers of Consumer Goods
- Table 33. Major Manufacturers of Others
- Table 34. Global Advanced Phase Change Materials (PCM) Production by application 2019 VS 2023 VS 2030 (MT)
- Table 35. Global Advanced Phase Change Materials (PCM) Production by application (2019-2024) & (MT)
- Table 36. Global Advanced Phase Change Materials (PCM) Production by application (2025-2030) & (MT)
- Table 37. Global Advanced Phase Change Materials (PCM) Production Market Share by application (2019-2024)
- Table 38. Global Advanced Phase Change Materials (PCM) Production Market Share by application (2025-2030)
- Table 39. Global Advanced Phase Change Materials (PCM) Production Value by application 2019 VS 2023 VS 2030 (MT)
- Table 40. Global Advanced Phase Change Materials (PCM) Production Value by application (2019-2024) & (MT)
- Table 41. Global Advanced Phase Change Materials (PCM) Production Value by application (2025-2030) & (MT)
- Table 42. Global Advanced Phase Change Materials (PCM) Production Value Market Share by application (2019-2024)
- Table 43. Global Advanced Phase Change Materials (PCM) Production Value Market



Share by application (2025-2030)

Table 44. BASF Company Information

Table 45. BASF Business Overview

Table 46. BASF Advanced Phase Change Materials (PCM) Production (MT), Value

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

Table 47. BASF Advanced Phase Change Materials (PCM) Product Portfolio

Table 48. BASF Recent Development

Table 49. Honeywell Company Information

Table 50. Honeywell Business Overview

Table 51. Honeywell Advanced Phase Change Materials (PCM) Production (MT), Value

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

Table 52. Honeywell Advanced Phase Change Materials (PCM) Product Portfolio

Table 53. Honeywell Recent Development

Table 54. Cryopak Company Information

Table 55. Cryopak Business Overview

Table 56. Cryopak Advanced Phase Change Materials (PCM) Production (MT), Value

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

Table 57. Cryopak Advanced Phase Change Materials (PCM) Product Portfolio

Table 58. Cryopak Recent Development

Table 59. Entropy Solutions Inc. Company Information

Table 60. Entropy Solutions Inc. Business Overview

Table 61. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Production

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

Table 62. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Product

Portfolio

Table 63. Entropy Solutions Inc. Recent Development

Table 64. Climator Sweden AB Company Information

Table 65. Climator Sweden AB Business Overview

Table 66. Climator Sweden AB Advanced Phase Change Materials (PCM) Production

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

Table 67. Climator Sweden AB Advanced Phase Change Materials (PCM) Product

Portfolio

Table 68. Climator Sweden AB Recent Development

Table 69. Phase Change Energy Solutions Company Information

Table 70. Phase Change Energy Solutions Business Overview

Table 71. Phase Change Energy Solutions Advanced Phase Change Materials (PCM)

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

Table 72. Phase Change Energy Solutions Advanced Phase Change Materials (PCM)

Product Portfolio



- Table 73. Phase Change Energy Solutions Recent Development
- Table 74. Outlast Technologies Company Information
- Table 75. Outlast Technologies Business Overview
- Table 76. Outlast Technologies Advanced Phase Change Materials (PCM) Production
- (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 77. Outlast Technologies Advanced Phase Change Materials (PCM) Product Portfolio
- Table 78. Outlast Technologies Recent Development
- Table 79. Dow Building Solutions Company Information
- Table 80. Dow Building Solutions Business Overview
- Table 81. Dow Building Solutions Advanced Phase Change Materials (PCM) Production
- (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 82. Dow Building Solutions Advanced Phase Change Materials (PCM) Product Portfolio
- Table 83. Dow Building Solutions Recent Development
- Table 84. Chemours Company Company Information
- Table 85. Chemours Company Business Overview
- Table 86. Chemours Company Advanced Phase Change Materials (PCM) Production
- (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 87. Chemours Company Advanced Phase Change Materials (PCM) Product Portfolio
- Table 88. Chemours Company Recent Development
- Table 89. PCM Energy Ltd Company Information
- Table 90. PCM Energy Ltd Business Overview
- Table 91. PCM Energy Ltd Advanced Phase Change Materials (PCM) Production (MT),
- Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 92. PCM Energy Ltd Advanced Phase Change Materials (PCM) Product Portfolio
- Table 93. PCM Energy Ltd Recent Development
- Table 94. Rubitherm Technologies GmbH Company Information
- Table 95. Rubitherm Technologies GmbH Business Overview
- Table 96. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM)
- Production (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)
- Table 97. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Product Portfolio
- Table 98. Rubitherm Technologies GmbH Recent Development
- Table 99. Global Advanced Phase Change Materials (PCM) Production by Region:
- 2019 VS 2023 VS 2030 (MT)
- Table 100. Global Advanced Phase Change Materials (PCM) Production by Region (2019-2024) & (MT)



Table 101. Global Advanced Phase Change Materials (PCM) Production Market Share by Region (2019-2024)

Table 102. Global Advanced Phase Change Materials (PCM) Production Forecast by Region (2025-2030) & (MT)

Table 103. Global Advanced Phase Change Materials (PCM) Production Market Share Forecast by Region (2025-2030)

Table 104. Global Advanced Phase Change Materials (PCM) Production Value Comparison by Region: 2019 VS 2023 VS 2030 (US\$ Million)

Table 105. Global Advanced Phase Change Materials (PCM) Production Value by Region (2019-2024) & (US\$ Million)

Table 106. Global Advanced Phase Change Materials (PCM) Production Value Forecast by Region (2025-2030) & (US\$ Million)

Table 107. Global Advanced Phase Change Materials (PCM) Production Value Share Forecast by Region: (2025-2030) & (US\$ Million)

Table 108. Global Advanced Phase Change Materials (PCM) Market Average Price (USD/MT) by Region (2019-2024)

Table 109. Global Advanced Phase Change Materials (PCM) Market Average Price (USD/MT) by Region (2025-2030)

Table 110. Global Advanced Phase Change Materials (PCM) Consumption by Region: 2019 VS 2023 VS 2030 (MT)

Table 111. Global Advanced Phase Change Materials (PCM) Consumption by Region (2019-2024) & (MT)

Table 112. Global Advanced Phase Change Materials (PCM) Consumption Market Share by Region (2019-2024)

Table 113. Global Advanced Phase Change Materials (PCM) Consumption Forecasted by Region (2025-2030) & (MT)

Table 114. Global Advanced Phase Change Materials (PCM) Consumption Forecasted Market Share by Region (2025-2030)

Table 115. North America Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030 (MT)

Table 116. North America Advanced Phase Change Materials (PCM) Consumption by Country (2019-2024) & (MT)

Table 117. North America Advanced Phase Change Materials (PCM) Consumption by Country (2025-2030) & (MT)

Table 118. Europe Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030 (MT)

Table 119. Europe Advanced Phase Change Materials (PCM) Consumption by Country (2019-2024) & (MT)

Table 120. Europe Advanced Phase Change Materials (PCM) Consumption by Country



(2025-2030) & (MT)

Table 121. Asia Pacific Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030 (MT)

Table 122. Asia Pacific Advanced Phase Change Materials (PCM) Consumption by Country (2019-2024) & (MT)

Table 123. Asia Pacific Advanced Phase Change Materials (PCM) Consumption by Country (2025-2030) & (MT)

Table 124. LAMEA Advanced Phase Change Materials (PCM) Consumption Growth Rate by Country: 2019 VS 2023 VS 2030 (MT)

Table 125. LAMEA Advanced Phase Change Materials (PCM) Consumption by Country (2019-2024) & (MT)

Table 126. LAMEA Advanced Phase Change Materials (PCM) Consumption by Country (2025-2030) & (MT)

Table 127. Key Raw Materials

Table 128. Raw Materials Key Suppliers

Table 129. Advanced Phase Change Materials (PCM) Distributors List

Table 130. Advanced Phase Change Materials (PCM) Customers List

Table 131. Research Programs/Design for This Report

Table 132. Authors List of This Report

Table 133. Secondary Sources

Table 134. 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) Production Value (US\$ Million), 2019 VS 2023 VS 2030

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

Figure 4. Global Advanced Phase Change Materials (PCM) Production Capacity (2019-2030) & (MT)

Figure 5. Global Advanced Phase Change Materials (PCM) Production (2019-2030) & (MT)

Figure 6. Global Advanced Phase Change Materials (PCM) Average Price (USD/MT) & (2019-2030)

Figure 7. Global Top 5 and 10 Advanced Phase Change Materials (PCM) Players Market Share by Production Value in 2023

Figure 8. Manufacturers Type (Tier 1, Tier 2, and Tier 3): 2019 VS 2023

Figure 9. Organic Picture

Figure 10. Inorganic Picture

Figure 11. Bio-Based Picture

Figure 12. Global Advanced Phase Change Materials (PCM) Production by Type (2019 VS 2023 VS 2030) & (MT)

Figure 13. Global Advanced Phase Change Materials (PCM) Production Market Share 2019 VS 2023 VS 2030

Figure 14. Global Advanced Phase Change Materials (PCM) Production Market Share by Type (2019-2030)

Figure 15. Global Advanced Phase Change Materials (PCM) Production Value by Type (2019 VS 2023 VS 2030) & (MT)

Figure 16. Global Advanced Phase Change Materials (PCM) Production Value Share 2019 VS 2023 VS 2030

Figure 17. Global Advanced Phase Change Materials (PCM) Production Value Share by Type (2019-2030)

Figure 18. Building & Construction Picture

Figure 19. Refrigeration Picture

Figure 20. Consumer Goods Picture

Figure 21. Others Picture

Figure 22. Global Advanced Phase Change Materials (PCM) Production by Application (2019 VS 2023 VS 2030) & (MT)



Figure 23. Global Advanced Phase Change Materials (PCM) Production Market Share 2019 VS 2023 VS 2030

Figure 24. Global Advanced Phase Change Materials (PCM) Production Market Share by Application (2019-2030)

Figure 25. Global Advanced Phase Change Materials (PCM) Production Value by Application (2019 VS 2023 VS 2030) & (MT)

Figure 26. Global Advanced Phase Change Materials (PCM) Production Value Share 2019 VS 2023 VS 2030

Figure 27. Global Advanced Phase Change Materials (PCM) Production Value Share by Application (2019-2030)

Figure 28. Global Advanced Phase Change Materials (PCM) Production by Region: 2019 VS 2023 VS 2030 (MT)

Figure 29. Global Advanced Phase Change Materials (PCM) Production Market Share by Region: 2019 VS 2023 VS 2030

Figure 30. Global Advanced Phase Change Materials (PCM) Production Value Comparison by Region: 2019 VS 2023 VS 2030 (US\$ Million)

Figure 31. Global Advanced Phase Change Materials (PCM) Production Value Share by Region: 2019 VS 2023 VS 2030

Figure 32. North America Advanced Phase Change Materials (PCM) Production Value (2019-2030) & (US\$ Million)

Figure 33. Europe Advanced Phase Change Materials (PCM) Production Value (2019-2030) & (US\$ Million)

Figure 34. Asia-Pacific Advanced Phase Change Materials (PCM) Production Value (2019-2030) & (US\$ Million)

Figure 35. Latin America Advanced Phase Change Materials (PCM) Production Value (2019-2030) & (US\$ Million)

Figure 36. Middle East & Africa Advanced Phase Change Materials (PCM) Production Value (2019-2030) & (US\$ Million)

Figure 37. North America Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 38. North America Advanced Phase Change Materials (PCM) Consumption Market Share by Country (2019-2030)

Figure 39. U.S. Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 40. Canada Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 41. Europe Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 42. Europe Advanced Phase Change Materials (PCM) Consumption Market



Share by Country (2019-2030)

Figure 43. Germany Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 44. France Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 45. U.K. Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 46. Italy Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 47. Netherlands Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 48. Asia Pacific Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 49. Asia Pacific Advanced Phase Change Materials (PCM) Consumption Market Share by Country (2019-2030)

Figure 50. China Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 51. Japan Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 52. South Korea Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 53. Southeast Asia Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 54. India Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 55. Australia Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 56. LAMEA Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 57. LAMEA Advanced Phase Change Materials (PCM) Consumption Market Share by Country (2019-2030)

Figure 58. Mexico Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 59. Brazil Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 60. Turkey Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)

Figure 61. GCC Countries Advanced Phase Change Materials (PCM) Consumption and Growth Rate (2019-2030) & (MT)



Figure 62. Advanced Phase Change Materials (PCM) Value Chain

Figure 63. Manufacturing Cost Structure

Figure 64. Advanced Phase Change Materials (PCM) Production Mode & Process

Figure 65. Direct Comparison with Distribution Share

Figure 66. Distributors Profiles

Figure 67. Years Considered

Figure 68. Research Process

Figure 69. Key Executives Interviewed



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