

# Global Advanced Phase Change Materials (PCM) Market Size, Manufacturers, Growth Analysis Industry 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 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.

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.

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.

This report presents an overview of global market for Advanced Phase Change Materials (PCM), sales, 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 sales 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

## 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

China

Japan

South Korea

India

Australia

China Taiwan

Indonesia

Thailand

Malaysia

## Latin America

Mexico

Brazil

Argentina

## Middle East & Africa

Turkey

Saudi Arabia

UAE

## Study Objectives

*Global Advanced Phase Change Materials (PCM) Market Size, Manufacturers, Growth Analysis Industry Forecast to...*

1. To analyze and research the global Advanced Phase Change Materials (PCM) status and future forecast, involving, sales, revenue, growth rate (CAGR), market share, historical and forecast.
2. To present the key manufacturers, sales, 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 Advanced Phase Change Materials (PCM) market potential and advantage, opportunity and challenge, restraints, and risks.
5. To identify Advanced Phase Change Materials (PCM) significant trends, drivers, influence factors in global and regions.
6. To analyze Advanced Phase Change Materials (PCM) 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 sales 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, sales value, sales volume, 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) manufacturers competitive landscape, price, sales and revenue market share, latest development plan, 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: Sales and value 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 market development, future development prospects, market space, and market size of each country in the world.

Chapter 7: Sales and value of Advanced Phase Change Materials (PCM) in country level. It provides sigmate data by type, and by application for each country/region.

Chapter 8: 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 9: Analysis of industrial chain, including the upstream and downstream of the industry.

Chapter 10: Concluding Insights.



## Contents

### **1 MARKET OVERVIEW**

- 1.1 Product Definition
- 1.2 Global Market Growth Prospects
  - 1.2.1 Global Advanced Phase Change Materials (PCM) Sales Value (2019-2030)
  - 1.2.2 Global Advanced Phase Change Materials (PCM) Sales Volume (2019-2030)
  - 1.2.3 Global Advanced Phase Change Materials (PCM) Sales Average Price (2019-2030)
- 1.3 Assumptions and Limitations
- 1.4 Study Goals and Objectives

### **2 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 COMPANY**

- 3.1 Global Advanced Phase Change Materials (PCM) Company Revenue Ranking in 2023
- 3.2 Global Advanced Phase Change Materials (PCM) Revenue by Company (2019-2024)
- 3.3 Global Advanced Phase Change Materials (PCM) Sales Volume by Company (2019-2024)
- 3.4 Global Advanced Phase Change Materials (PCM) Average Price by Company (2019-2024)
- 3.5 Global Advanced Phase Change Materials (PCM) Company Ranking, 2022 VS 2023 VS 2024
- 3.6 Global Advanced Phase Change Materials (PCM) Company Manufacturing Base & Headquarters
- 3.7 Global Advanced Phase Change Materials (PCM) Company, Product Type & Application
- 3.8 Global Advanced Phase Change Materials (PCM) Company Commercialization Time
- 3.9 Market Competitive Analysis

- 3.9.1 Global Advanced Phase Change Materials (PCM) Market CR5 and HHI
- 3.9.2 Global Top 5 and 10 Company Market Share by Revenue in 2023
- 3.9.3 2023 Advanced Phase Change Materials (PCM) Tier 1, Tier 2, and Tier
- 3.10 Mergers & Acquisitions, Expansion

#### **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) Sales Volume by Type
  - 4.2.1 Global Advanced Phase Change Materials (PCM) Sales Volume by Type (2019 VS 2023 VS 2030)
  - 4.2.2 Global Advanced Phase Change Materials (PCM) Sales Volume by Type (2019-2030)
  - 4.2.3 Global Advanced Phase Change Materials (PCM) Sales Volume Share by Type (2019-2030)
- 4.3 Global Advanced Phase Change Materials (PCM) Sales Value by Type
  - 4.3.1 Global Advanced Phase Change Materials (PCM) Sales Value by Type (2019 VS 2023 VS 2030)
  - 4.3.2 Global Advanced Phase Change Materials (PCM) Sales Value by Type (2019-2030)
  - 4.3.3 Global Advanced Phase Change Materials (PCM) Sales Value 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) Sales Volume by Application
  - 5.2.1 Global Advanced Phase Change Materials (PCM) Sales Volume by Application (2019 VS 2023 VS 2030)
  - 5.2.2 Global Advanced Phase Change Materials (PCM) Sales Volume by Application (2019-2030)
  - 5.2.3 Global Advanced Phase Change Materials (PCM) Sales Volume Share by

Application (2019-2030)

5.3 Global Advanced Phase Change Materials (PCM) Sales Value by Application

5.3.1 Global Advanced Phase Change Materials (PCM) Sales Value by Application (2019 VS 2023 VS 2030)

5.3.2 Global Advanced Phase Change Materials (PCM) Sales Value by Application (2019-2030)

5.3.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application (2019-2030)

## **6 ADVANCED PHASE CHANGE MATERIALS (PCM) MARKET BY REGION**

6.1 Global Advanced Phase Change Materials (PCM) Sales by Region: 2019 VS 2023 VS 2030

6.2 Global Advanced Phase Change Materials (PCM) Sales by Region (2019-2030)

6.2.1 Global Advanced Phase Change Materials (PCM) Sales by Region: 2019-2024

6.2.2 Global Advanced Phase Change Materials (PCM) Sales by Region (2025-2030)

6.3 Global Advanced Phase Change Materials (PCM) Sales Value by Region: 2019 VS 2023 VS 2030

6.4 Global Advanced Phase Change Materials (PCM) Sales Value by Region (2019-2030)

6.4.1 Global Advanced Phase Change Materials (PCM) Sales Value by Region: 2019-2024

6.4.2 Global Advanced Phase Change Materials (PCM) Sales Value by Region (2025-2030)

6.5 Global Advanced Phase Change Materials (PCM) Market Price Analysis by Region (2019-2024)

6.6 North America

6.6.1 North America Advanced Phase Change Materials (PCM) Sales Value (2019-2030)

6.6.2 North America Advanced Phase Change Materials (PCM) Sales Value Share by Country, 2023 VS 2030

6.7 Europe

6.7.1 Europe Advanced Phase Change Materials (PCM) Sales Value (2019-2030)

6.7.2 Europe Advanced Phase Change Materials (PCM) Sales Value Share by Country, 2023 VS 2030

6.8 Asia-Pacific

6.8.1 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Value (2019-2030)

6.8.2 Asia-Pacific Advanced Phase Change Materials (PCM) Sales Value Share by Country, 2023 VS 2030

## 6.9 Latin America

6.9.1 Latin America Advanced Phase Change Materials (PCM) Sales Value (2019-2030)

6.9.2 Latin America Advanced Phase Change Materials (PCM) Sales Value Share by Country, 2023 VS 2030

## 6.10 Middle East & Africa

6.10.1 Middle East & Africa Advanced Phase Change Materials (PCM) Sales Value (2019-2030)

6.10.2 Middle East & Africa Advanced Phase Change Materials (PCM) Sales Value Share by Country, 2023 VS 2030

# 7 ADVANCED PHASE CHANGE MATERIALS (PCM) MARKET BY COUNTRY

7.1 Global Advanced Phase Change Materials (PCM) Sales by Country: 2019 VS 2023 VS 2030

7.2 Global Advanced Phase Change Materials (PCM) Sales Value by Country: 2019 VS 2023 VS 2030

7.3 Global Advanced Phase Change Materials (PCM) Sales by Country (2019-2030)

7.3.1 Global Advanced Phase Change Materials (PCM) Sales by Country (2019-2024)

7.3.2 Global Advanced Phase Change Materials (PCM) Sales by Country (2025-2030)

7.4 Global Advanced Phase Change Materials (PCM) Sales Value by Country (2019-2030)

7.4.1 Global Advanced Phase Change Materials (PCM) Sales Value by Country (2019-2024)

7.4.2 Global Advanced Phase Change Materials (PCM) Sales Value by Country (2025-2030)

## 7.5 USA

7.5.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.5.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.5.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.6 Canada

7.6.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.6.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.6.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by

Application, 2023 VS 2030

7.7 Germany

7.7.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.7.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.7.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.8 France

7.8.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.8.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.8.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.9 U.K.

7.9.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.9.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.9.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.10 Italy

7.10.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.10.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.10.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.11 Netherlands

7.11.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.11.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.11.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.12 Nordic Countries

7.12.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.12.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.12.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.13 China

7.13.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.13.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.13.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.14 Japan

7.14.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.14.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.14.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.15 South Korea

7.15.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.15.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.15.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.16 Southeast Asia

7.16.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.16.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.16.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

7.17 India

7.17.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.17.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.17.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.18 Australia

7.18.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.18.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.18.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.19 Mexico

7.19.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.19.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.19.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.20 Brazil

7.20.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.20.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.20.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.21 Turkey

7.21.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.21.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.21.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.22 Saudi Arabia

7.22.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.22.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type, 2023 VS 2030

7.22.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## 7.23 UAE

7.23.1 Global Advanced Phase Change Materials (PCM) Sales Value Growth Rate (2019-2030)

7.23.2 Global Advanced Phase Change Materials (PCM) Sales Value Share by Type,

2023 VS 2030

7.23.3 Global Advanced Phase Change Materials (PCM) Sales Value Share by Application, 2023 VS 2030

## **8 COMPANY PROFILES**

### **8.1 BASF**

8.1.1 BASF Company Information

8.1.2 BASF Business Overview

8.1.3 BASF Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.1.4 BASF Advanced Phase Change Materials (PCM) Product Portfolio

8.1.5 BASF Recent Developments

### **8.2 Honeywell**

8.2.1 Honeywell Company Information

8.2.2 Honeywell Business Overview

8.2.3 Honeywell Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.2.4 Honeywell Advanced Phase Change Materials (PCM) Product Portfolio

8.2.5 Honeywell Recent Developments

### **8.3 Cryopak**

8.3.1 Cryopak Company Information

8.3.2 Cryopak Business Overview

8.3.3 Cryopak Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.3.4 Cryopak Advanced Phase Change Materials (PCM) Product Portfolio

8.3.5 Cryopak Recent Developments

### **8.4 Entropy Solutions Inc.**

8.4.1 Entropy Solutions Inc. Company Information

8.4.2 Entropy Solutions Inc. Business Overview

8.4.3 Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.4.4 Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Product Portfolio

8.4.5 Entropy Solutions Inc. Recent Developments

### **8.5 Climator Sweden AB**

8.5.1 Climator Sweden AB Company Information

8.5.2 Climator Sweden AB Business Overview

8.5.3 Climator Sweden AB Advanced Phase Change Materials (PCM) Sales, Value



and Gross Margin (2019-2024)

8.5.4 Climator Sweden AB Advanced Phase Change Materials (PCM) Product Portfolio

8.5.5 Climator Sweden AB Recent Developments

8.6 Phase Change Energy Solutions

8.6.1 Phase Change Energy Solutions Company Information

8.6.2 Phase Change Energy Solutions Business Overview

8.6.3 Phase Change Energy Solutions Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.6.4 Phase Change Energy Solutions Advanced Phase Change Materials (PCM) Product Portfolio

8.6.5 Phase Change Energy Solutions Recent Developments

8.7 Outlast Technologies

8.7.1 Outlast Technologies Company Information

8.7.2 Outlast Technologies Business Overview

8.7.3 Outlast Technologies Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.7.4 Outlast Technologies Advanced Phase Change Materials (PCM) Product Portfolio

8.7.5 Outlast Technologies Recent Developments

8.8 Dow Building Solutions

8.8.1 Dow Building Solutions Company Information

8.8.2 Dow Building Solutions Business Overview

8.8.3 Dow Building Solutions Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.8.4 Dow Building Solutions Advanced Phase Change Materials (PCM) Product Portfolio

8.8.5 Dow Building Solutions Recent Developments

8.9 Chemours Company

8.9.1 Chemours Company Company Information

8.9.2 Chemours Company Business Overview

8.9.3 Chemours Company Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.9.4 Chemours Company Advanced Phase Change Materials (PCM) Product Portfolio

8.9.5 Chemours Company Recent Developments

8.10 PCM Energy Ltd

8.10.1 PCM Energy Ltd Company Information

8.10.2 PCM Energy Ltd Business Overview

8.10.3 PCM Energy Ltd Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.10.4 PCM Energy Ltd Advanced Phase Change Materials (PCM) Product Portfolio

8.10.5 PCM Energy Ltd Recent Developments

8.11 Rubitherm Technologies GmbH

8.11.1 Rubitherm Technologies GmbH Company Information

8.11.2 Rubitherm Technologies GmbH Business Overview

8.11.3 Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Sales, Value and Gross Margin (2019-2024)

8.11.4 Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Product Portfolio

8.11.5 Rubitherm Technologies GmbH Recent Developments

## **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) Sales 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

## 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) Revenue by Company (US\$ Million) & (2019-2024)

Table 6. Global Advanced Phase Change Materials (PCM) Revenue Share by Company (2019-2024)

Table 7. Global Advanced Phase Change Materials (PCM) Sales Volume by Company (MT) & (2019-2024)

Table 8. Global Advanced Phase Change Materials (PCM) Sales Volume Share by Company (2019-2024)

Table 9. Global Advanced Phase Change Materials (PCM) Average Price (USD/MT) of Company (2019-2024)

Table 10. Global Advanced Phase Change Materials (PCM) Company Ranking, 2022 VS 2023 VS 2024 & (US\$ Million)

Table 11. Global Advanced Phase Change Materials (PCM) Key Company Manufacturing Base & Headquarters

Table 12. Global Advanced Phase Change Materials (PCM) Company, Product Type & Application

Table 13. Global Advanced Phase Change Materials (PCM) Company Commercialization Time

Table 14. Global Company Market Concentration Ratio (CR5 and HHI)

Table 15. Global Advanced Phase Change Materials (PCM) by Company Type (Tier 1, Tier 2, and Tier 3) & (Based on Revenue of 2023)

Table 16. Mergers & Acquisitions, Expansion

Table 17. Major Companies of Organic

Table 18. Major Companies of Inorganic

Table 19. Major Companies of Bio-Based

Table 20. Global Advanced Phase Change Materials (PCM) Sales Volume by Type 2019 VS 2023 VS 2030 (MT)

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

Table 22. Global Advanced Phase Change Materials (PCM) Sales Volume by Type

(2025-2030) & (MT)

Table 23. Global Advanced Phase Change Materials (PCM) Sales Volume Share by Type (2019-2024)

Table 24. Global Advanced Phase Change Materials (PCM) Sales Volume Share by Type (2025-2030)

Table 25. Global Advanced Phase Change Materials (PCM) Sales Value by Type 2019 VS 2023 VS 2030 (US\$ Million)

Table 26. Global Advanced Phase Change Materials (PCM) Sales Value by Type (2019-2024) & (US\$ Million)

Table 27. Global Advanced Phase Change Materials (PCM) Sales Value by Type (2025-2030) & (US\$ Million)

Table 28. Global Advanced Phase Change Materials (PCM) Sales Value Share by Type (2019-2024)

Table 29. Global Advanced Phase Change Materials (PCM) Sales Value Share by Type (2025-2030)

Table 30. Major Companies of Building & Construction

Table 31. Major Companies of Refrigeration

Table 32. Major Companies of Consumer Goods

Table 33. Major Companies of Others

Table 34. Global Advanced Phase Change Materials (PCM) Sales Volume by Application 2019 VS 2023 VS 2030 (MT)

Table 35. Global Advanced Phase Change Materials (PCM) Sales Volume by Application (2019-2024) & (MT)

Table 36. Global Advanced Phase Change Materials (PCM) Sales Volume by Application (2025-2030) & (MT)

Table 37. Global Advanced Phase Change Materials (PCM) Sales Volume Share by Application (2019-2024)

Table 38. Global Advanced Phase Change Materials (PCM) Sales Volume Share by Application (2025-2030)

Table 39. Global Advanced Phase Change Materials (PCM) Sales Value by Application 2019 VS 2023 VS 2030 (US\$ Million)

Table 40. Global Advanced Phase Change Materials (PCM) Sales Value by Application (2019-2024) & (US\$ Million)

Table 41. Global Advanced Phase Change Materials (PCM) Sales Value by Application (2025-2030) & (US\$ Million)

Table 42. Global Advanced Phase Change Materials (PCM) Sales Value Share by Application (2019-2024)

Table 43. Global Advanced Phase Change Materials (PCM) Sales Value Share by Application (2025-2030)

- Table 44. Global Advanced Phase Change Materials (PCM) Sales by Region: 2019 VS 2023 VS 2030 (MT)
- Table 45. Global Advanced Phase Change Materials (PCM) Sales by Region (2019-2024) & (MT)
- Table 46. Global Advanced Phase Change Materials (PCM) Sales Market Share by Region (2019-2024)
- Table 47. Global Advanced Phase Change Materials (PCM) Sales by Region (2025-2030) & (MT)
- Table 48. Global Advanced Phase Change Materials (PCM) Sales Market Share by Region (2025-2030)
- Table 49. Global Advanced Phase Change Materials (PCM) Sales Value Comparison by Region: 2019 VS 2023 VS 2030 (US\$ Million)
- Table 50. Global Advanced Phase Change Materials (PCM) Sales Value by Region (2019-2024) & (US\$ Million)
- Table 51. Global Advanced Phase Change Materials (PCM) Sales Value Share by Region (2019-2024)
- Table 52. Global Advanced Phase Change Materials (PCM) Sales Value by Region (2025-2030) & (US\$ Million)
- Table 53. Global Advanced Phase Change Materials (PCM) Sales Value Share by Region (2025-2030)
- Table 54. Global Advanced Phase Change Materials (PCM) Market Average Price (USD/MT) by Region (2019-2024)
- Table 55. Global Advanced Phase Change Materials (PCM) Market Average Price (USD/MT) by Region (2025-2030)
- Table 56. Global Advanced Phase Change Materials (PCM) Sales by Country: 2019 VS 2023 VS 2030 (MT)
- Table 57. Global Advanced Phase Change Materials (PCM) Sales Value by Country: 2019 VS 2023 VS 2030 (US\$ Million)
- Table 58. Global Advanced Phase Change Materials (PCM) Sales by Country (2019-2024) & (MT)
- Table 59. Global Advanced Phase Change Materials (PCM) Sales Market Share by Country (2019-2024)
- Table 60. Global Advanced Phase Change Materials (PCM) Sales by Country (2025-2030) & (MT)
- Table 61. Global Advanced Phase Change Materials (PCM) Sales Market Share by Country (2025-2030)
- Table 62. Global Advanced Phase Change Materials (PCM) Sales Value by Country (2019-2024) & (US\$ Million)
- Table 63. Global Advanced Phase Change Materials (PCM) Sales Value Market Share

by Country (2019-2024)

Table 64. Global Advanced Phase Change Materials (PCM) Sales Value by Country (2025-2030) & (US\$ Million)

Table 65. Global Advanced Phase Change Materials (PCM) Sales Value Market Share by Country (2025-2030)

Table 66. BASF Company Information

Table 67. BASF Business Overview

Table 68. BASF Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 69. BASF Advanced Phase Change Materials (PCM) Product Portfolio

Table 70. BASF Recent Development

Table 71. Honeywell Company Information

Table 72. Honeywell Business Overview

Table 73. Honeywell Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 74. Honeywell Advanced Phase Change Materials (PCM) Product Portfolio

Table 75. Honeywell Recent Development

Table 76. Cryopak Company Information

Table 77. Cryopak Business Overview

Table 78. Cryopak Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 79. Cryopak Advanced Phase Change Materials (PCM) Product Portfolio

Table 80. Cryopak Recent Development

Table 81. Entropy Solutions Inc. Company Information

Table 82. Entropy Solutions Inc. Business Overview

Table 83. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 84. Entropy Solutions Inc. Advanced Phase Change Materials (PCM) Product Portfolio

Table 85. Entropy Solutions Inc. Recent Development

Table 86. Climator Sweden AB Company Information

Table 87. Climator Sweden AB Business Overview

Table 88. Climator Sweden AB Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 89. Climator Sweden AB Advanced Phase Change Materials (PCM) Product Portfolio

Table 90. Climator Sweden AB Recent Development

Table 91. Phase Change Energy Solutions Company Information

Table 92. Phase Change Energy Solutions Business Overview

Table 93. Phase Change Energy Solutions Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 94. Phase Change Energy Solutions Advanced Phase Change Materials (PCM) Product Portfolio

Table 95. Phase Change Energy Solutions Recent Development

Table 96. Outlast Technologies Company Information

Table 97. Outlast Technologies Business Overview

Table 98. Outlast Technologies Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 99. Outlast Technologies Advanced Phase Change Materials (PCM) Product Portfolio

Table 100. Outlast Technologies Recent Development

Table 101. Dow Building Solutions Company Information

Table 102. Dow Building Solutions Business Overview

Table 103. Dow Building Solutions Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 104. Dow Building Solutions Advanced Phase Change Materials (PCM) Product Portfolio

Table 105. Dow Building Solutions Recent Development

Table 106. Chemours Company Company Information

Table 107. Chemours Company Business Overview

Table 108. Chemours Company Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 109. Chemours Company Advanced Phase Change Materials (PCM) Product Portfolio

Table 110. Chemours Company Recent Development

Table 111. PCM Energy Ltd Company Information

Table 112. PCM Energy Ltd Business Overview

Table 113. PCM Energy Ltd Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 114. PCM Energy Ltd Advanced Phase Change Materials (PCM) Product Portfolio

Table 115. PCM Energy Ltd Recent Development

Table 116. Rubitherm Technologies GmbH Company Information

Table 117. Rubitherm Technologies GmbH Business Overview

Table 118. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Sales (MT), Value (US\$ Million), Price (USD/MT) and Gross Margin (2019-2024)

Table 119. Rubitherm Technologies GmbH Advanced Phase Change Materials (PCM) Product Portfolio

- Table 120. Rubitherm Technologies GmbH Recent Development
- Table 121. Key Raw Materials
- Table 122. Raw Materials Key Suppliers
- Table 123. Advanced Phase Change Materials (PCM) Distributors List
- Table 124. Advanced Phase Change Materials (PCM) Customers List
- Table 125. Research Programs/Design for This Report
- Table 126. Authors List of This Report
- Table 127. Secondary Sources
- Table 128. 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) Sales Value (US\$ Million), 2019 VS 2023 VS 2030

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

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

Figure 5. Global Advanced Phase Change Materials (PCM) Sales Average Price (USD/MT) & (2019-2030)

Figure 6. Global Advanced Phase Change Materials (PCM) Company Revenue Ranking in 2023 (US\$ Million)

Figure 7. Global Top 5 and 10 Company Market Share by Revenue in 2023 (US\$ Million)

Figure 8. Company 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) Sales Volume by Type (2019 VS 2023 VS 2030) & (MT)

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

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

Figure 15. Global Advanced Phase Change Materials (PCM) Sales Value by Type (2019 VS 2023 VS 2030) & (US\$ Million)

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

Figure 17. Global Advanced Phase Change Materials (PCM) Sales 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) Sales Volume by Application (2019 VS 2023 VS 2030) & (MT)

Figure 23. Global Advanced Phase Change Materials (PCM) Sales Volume Share 2019

VS 2023 VS 2030

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

Figure 25. Global Advanced Phase Change Materials (PCM) Sales Value by Application (2019 VS 2023 VS 2030) & (US\$ Million)

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

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

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

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

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

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

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

Figure 33. North America Advanced Phase Change Materials (PCM) Sales Value Share by Country (%), 2023 VS 2030

Figure 34. Europe Advanced Phase Change Materials (PCM) Sales Value (2019-2030) & (US\$ Million)

Figure 35. Europe Advanced Phase Change Materials (PCM) Sales Value Share by Country (%), 2023 VS 2030

Figure 36. Asia-Pacific Advanced Phase Change Materials (PCM) Sales Value (2019-2030) & (US\$ Million)

Figure 37. Asia-Pacific Advanced Phase Change Materials (PCM) Sales Value Share by Country (%), 2023 VS 2030

Figure 38. Latin America Advanced Phase Change Materials (PCM) Sales Value (2019-2030) & (US\$ Million)

Figure 39. Latin America Advanced Phase Change Materials (PCM) Sales Value Share by Country (%), 2023 VS 2030

Figure 40. Middle East & Africa Advanced Phase Change Materials (PCM) Sales Value (2019-2030) & (US\$ Million)

Figure 41. Middle East & Africa Advanced Phase Change Materials (PCM) Sales Value Share by Country (%), 2023

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