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Global Phase Change Materials (PCM) for Cooling Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Phase Change Materials (PCM) for Cooling market size was valued at US$ 856 million in 2025 and is forecast to a readjusted size of US$ 1767 million by 2032 with a CAGR of 11.0% during review period.

Phase Change Materials (PCM) for Cooling are substances that absorb, store, and release large amounts of latent heat during phase transitions?typically from solid to liquid and vice versa?at specific temperatures. These materials are engineered to maintain a near-constant temperature while absorbing heat, making them ideal for thermal energy storage and temperature regulation applications. PCMs used for cooling can be organic (like paraffins or fatty acids), inorganic (such as salt hydrates), or eutectic mixtures, each offering varying thermal conductivity, stability, and energy storage capacity. They are widely utilized in passive cooling systems, cold chain logistics, HVAC systems, building insulation, electronics thermal management, and personal cooling products. Key characteristics include phase transition temperature range (commonly between 0?C and 30?C for cooling applications), high latent heat capacity (typically 150?250?kJ/kg), non-toxicity, and long cycle stability.

Phase Change Materials (PCMs) for cooling applications typically feature a phase change temperature range between -20?C and +30?C, tailored to use cases such as vaccine transport, HVAC systems, or personal cooling. These materials possess a latent heat of fusion between 150 and 250?kJ/kg, enabling efficient thermal energy storage during melting and solidification. They generally exhibit thermal conductivity between 0.2 and 0.6?W/m?K, density ranging from 800 to 1,500?kg/m?, and specific heat capacity of 1.8 to 2.5?kJ/kg?K. Most PCMs maintain stable performance over

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1,000+ thermal cycles, with a melting/freezing point hysteresis of less than 2??C, ensuring predictable energy release. Volume expansion during phase transition typically ranges from 5% to 15%, requiring compatible encapsulation. PCMs can be formulated as salt hydrates, paraffin waxes, fatty acids, or bio-based compounds, and are offered in bulk, macroencapsulated (e.g., pouches, panels), or microencapsulated (e.g., textile coatings)forms, depending on application requirements.

This report is a detailed and comprehensive analysis for global Phase Change Materials (PCM) for Cooling market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Phase Change Materials (PCM) for Cooling market size and forecasts, in consumption value ($ Million), sales quantity (Kilotons), and average selling prices (US$/Ton), 2021-2032

Global Phase Change Materials (PCM) for Cooling market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Kilotons), and average selling prices (US$/Ton), 2021-2032

Global Phase Change Materials (PCM) for Cooling market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Kilotons), and average selling prices (US$/Ton), 2021-2032

Global Phase Change Materials (PCM) for Cooling market shares of main players, shipments in revenue ($ Million), sales quantity (Kilotons), and ASP (US$/Ton), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Phase Change Materials (PCM) for Cooling

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To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Phase Change Materials (PCM) for Cooling market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Rubitherm, BASF, Outlast Technologies, Climator, PCM Products, Phase Change Energy Solutions, EMCOOL, Croda International, Entropy Solutions, Pluss Advanced Technologies, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Phase Change Materials (PCM) for Cooling market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Organic PCMs

Inorganic PCMs

Market segment by Application

Cold Chain Logistics

HVAC Systems

Battery Cooling

Others

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Major players covered

- Rubitherm
- BASF
- Outlast Technologies
- Climator
- PCM Products
- Phase Change Energy Solutions
- EMCOOL
- Croda International
- Entropy Solutions
- Pluss Advanced Technologies
- Cold Chain Technologies
- Cristopia Energy Systems
- RGEES
- Va-Q-tec
- Honeywell
- GreenTEG
- Thermavance Technologies

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Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Phase Change Materials (PCM) for Cooling product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Phase Change Materials (PCM) for Cooling, with price, sales quantity, revenue, and global market share of Phase Change Materials (PCM) for Cooling from 2021 to 2026.

Chapter 3, the Phase Change Materials (PCM) for Cooling competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Phase Change Materials (PCM) for Cooling breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and Phase Change Materials (PCM) for Cooling market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

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Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Phase Change Materials (PCM) for Cooling.

Chapter 14 and 15, to describe Phase Change Materials (PCM) for Cooling sales channel, distributors, customers, research findings and conclusion.

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Contents

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3 COMPETITIVE ENVIRONMENT: PHASE CHANGE MATERIALS (PCM) FOR COOLING BY MANUFACTURER

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4 CONSUMPTION ANALYSIS BY REGION

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List Of Tables

LIST OF TABLES

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List Of Figures

LIST OF FIGURES

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Figure 85. Research Process and Data Source

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