

Phase Change Materials (PCMs) – A Global Market Overview

“The report reviews, analyzes and projects the global market for Phase Change Materials (PCMs) for the period 2014-2023, across all major regions. The report analyzes the market for phase change material types comprise Bio-Based, Inorganic and Organic. The market for major applications of phase change materials explored in this report comprise Building & Construction, Electronics, Logistics & Cold Chains, Textiles and Others (including automotive and medical).”

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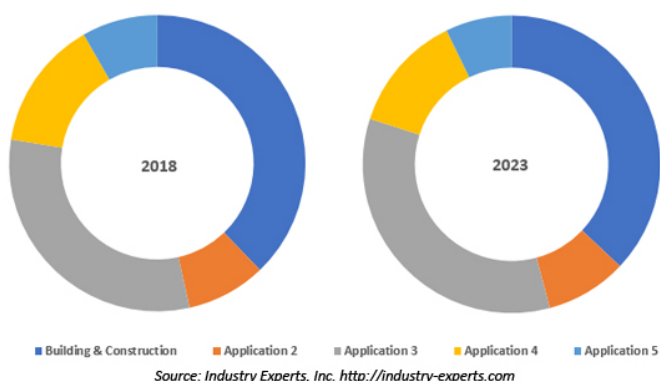
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Report Synopsis

Phase Change Materials (PCMs) are finding increasing use in logistics & cold chains, buildings, textiles and electronic applications, which are driving demand for these unique solutions. Temperature controlled packaging based on PCMs is used for transporting life-saving drugs and pharmaceuticals and perishable foods. These materials enable in maintaining the required temperatures within refrigerated trucks and containers. Electronic applications of PCMs are poised to post the second-fastest growth over the analysis period, which can be attributed to rapidly progressing technology leading to increasing power and speed of electronic devices, which, in turn, need better solutions for thermal management.

Building & Construction is estimated the largest application for PCMs with consumption of worth US\$558 million in 2018 while Logistics & Cold Chains is projected to grow faster at a CAGR of 23% during the analysis period 2017-2023 closely followed by Electronics with 21.2%.

Global Phase Change Materials Market by Application - 2018 to 2023



Research Findings & Coverage

- PCMs market is analyzed in this report with respect to material types and major application areas
- The study extensively analyzes each major application of phase change materials with a market snapshot for analysis period across the major regions

- Waste Sawdust-Based Composite Phase Change Materials Show Superior Thermal Conductivity
- Thermal Properties of Bio-based PCMs Enhanced with Exfoliated Graphite Nanoplatelets
- Introduction of Silicon Carbide in Composite PCMs for Battery Thermal Management
- Coconut Fat as a Bio-Based PCM in Building Applications
- Key business trends focusing on product innovations/developments, M&As, JVs and other recent industry developments
- Major companies profiled – 38
- The industry guide includes the contact details for 49 companies

Product Outline

The report analyzes the market for the key types of Phase Change Materials including:

- Bio-Based
- Inorganic
- Organic

The market for Application Areas of Phase Change Materials analyzed comprise the following:

- Building & Construction
- Electronics
- Logistics & Cold Chains
- Textiles
- Others

Analysis Period, Units and Growth Rates

- The report reviews, analyzes and projects the global Phase Change Materials market for the period 2014-2023 in terms of market value in US\$ and the compound annual growth rates (CAGRs) projected from 2017 through 2023

Geographic Coverage

- North America** (The United States, Canada and Mexico)
- Europe** (France, Germany, Italy, Russia, Spain, The United Kingdom and Rest of Europe)
- Asia-Pacific** (China, India, Japan, South Korea and Rest of Asia-Pacific)
- South America** (Argentina, Brazil and Rest of South America)
- Rest of World**

SAMPLE COMPANY PROFILE

COLD CHAIN TECHNOLOGIES, INC. (UNITED STATES)

135 Constitution Blvd., Franklin, MA 02038
Phone: (508) 429-1395, (800) 370-8566
Fax: (508) 429-9056
Website: www.coldchaintech.com

Business Overview

Established in 1967 and headquartered in Franklin, Massachusetts, Cold Chain Technologies (CCT) is a worldwide leader in providing single-use and reusable thermal packaging solutions for transport and distribution of temperature sensitive shipments. The company is also a leader in temperature-controlled distribution solutions for life sciences supply chain. The company's product brands include KoolTemp® GTS Pre-Qualified systems, Koolit® refrigerants, Koolit® Advanced PCM GEL. The company includes a network of over 20 manufacturing and distribution plants with a network of customer service, sales, engineering and thermal testing, R & D, and manufacturing units. The company's products and solutions are used for pharmaceutical, biotech, health care, clinical trial distribution and medical device industries. CCT helps companies meet the requirements with expertise in project management, temperature testing and thermal packaging for any shipping scenario. The company's temperature sensitive products are used for effective thermal packaging as well as optimized shipping strategies.

Product Analysis

Gel Phase Change Materials (PCMs)

Koolit® Advanced PCM Gel provides the durability and security of a PCM bottle, with the lightweight, leak-proof advantages of a gel pack. The PCM is available in mix-and-match temperature applications: 3°C, 5°C, 7°C and 17°C. The key features of the PCM include uniform thermal coverage, Leakproof, durable and tear-resistant, greater performance than PCM bottles and water-based refrigerants, cost-effective protection, with reduced shipment weight/size.

Koolit® Advanced Refrigerant PCM

Koolit® Advanced Refrigerant PCMs are non-water based phase change materials (PCMs) that freeze and melt at or near the same temperatures as needed by the products it protects. The company uses this characteristic to create super-efficient thermal packaging that results in reduced size, weight and freight costs. Koolit Refrigerant PCMs are sold as part of pre-qualified KoolTemp® GTS qualified shipping solutions and are packaged in both flexible saddlebags and hard bottles. The key features of the product include reusable, extreme hot and cold temperature protection, significant packaging and freight savings and ideal for domestic and international shipments.

Koolit® Foam Bricks

Koolit® Foam Brick refrigerant needs with an existing product or design you a customized solution

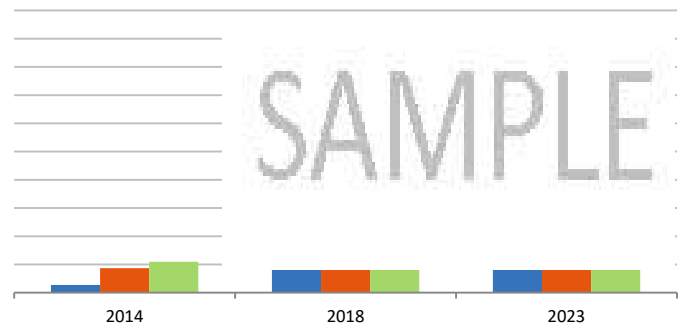
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SAMPLE TABLE/CHART

Glance at 2018 Global Phase Change Materials (PCMs) Market Share (%) by Region – North America, Europe, Asia-Pacific, South America and Rest of World



North American Phase Change Materials (PCMs) Market Analysis (2014-2023) by Material Type – Bio-Based, Inorganic and Organic in USD Million



KEY PLAYERS PROFILED

- Aavid Kunze GmbH
- Advansa BV
- AI Technology, Inc.
- Climator Sweden AB
- Cold Chain Technologies, Inc.
- Croda International PLC
- Datum Phase Change Limited
- DOW Corning Corporation
- Global E-Systems Europe B.V.
- Henkel AG & Co. KGaA
- Honeywell Electronic Materials, Inc.
- Insolcorp, LLC.
- Kaplan Energy
- Laird PLC
- Microtek Laboratories, Inc.
- Outlast Technologies LLC
- Parker Chomerics
- Phase Change Energy Solutions, Inc.
- Phase Change Material Products Limited
- PLUSS Advanced Technologies Pvt., Ltd.
- RGEES, LLC.
- Rubitherm Technologies GmbH
- Shenzhen Aochuan Technology Co., Ltd.
- Shin-Etsu Chemical Co., Ltd.

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