

# Asia-Pacific Data Center Refrigerant Market: Focus on Product, Application, and Country - Analysis and Forecast, 2023-2032

<https://marketpublishers.com/r/AAE50BBC7CABEN.html>

Date: October 2024

Pages: 0

Price: US\$ 3,250.00 (Single User License)

ID: AAE50BBC7CABEN

## Abstracts

Hard copy option is available on any of the options above at an additional charge of \$500. Please email us at [order@marketpublishers.com](mailto:order@marketpublishers.com) with your request.

This report will be delivered in 7-10 working days. Introduction to Asia-Pacific Data Center Refrigerant Market

The Asia-Pacific data center refrigerant market (excluding China) is expected to grow from \$101.7 million in 2023 to \$288.1 million by 2032, at a CAGR of 11.00% during the forecast period 2023-2032. The APAC data center refrigerant market is anticipated to develop because to the rising number of data centers and government programs encouraging energy-efficient operations. Additionally, regional financial incentives and regulatory laws are promoting the use of environmentally friendly refrigerants in data center facilities in accordance with sustainability goals.

### Market Introduction

The growing number of data centers around the area and government initiatives to encourage energy-efficient operations are expected to propel the APAC data center refrigerant market's substantial expansion. The growth of data center infrastructure brought about by digital transformation projects, cloud computing, and data-driven technologies has made effective cooling systems necessary to control the heat produced by these establishments. In order to maintain ideal temperatures and guarantee the consistent and dependable operation of data centers, refrigerants are essential.

The governments of APAC nations, such as China, Japan, and India, are enacting laws and providing financial incentives to promote the use of environmentally benign refrigerants that support the objectives of global sustainability. By encouraging the use of energy-efficient and low-GWP (Global Warming Potential) refrigerants, these programs assist data centers in lowering their environmental impact.

The need for cutting-edge cooling solutions, such as environmentally friendly and legally compatible refrigerants, is anticipated to increase as data center operators place a higher priority on sustainability. In the upcoming years, the refrigerant market is anticipated to be further driven by the APAC region's anticipated sustained investments in both new and existing data centers.

## Market Segmentation

### Segmentation 1: by Industry

IT and Telecom

Banking

Financial Services and Insurance (BFSI)

Research and Healthcare

Retail

Manufacturing

Others

### Segmentation 2: by Data Center Type

Hyperscale

Colocation

Edge Data Center

Enterprise

### Segmentation 3: by Refrigerant Type

Conventional Refrigerants

Liquid Cooling Fluids

### Segmentation 4: by Cooling Type

Air Cooling

Liquid Cooling

Free Cooling

### Segmentation 5: by Deployment

Installation/OEM

Aftermarket

### Segmentation 6: by Region

Asia-Pacific and Japan

China

How can this report add value to an organization?

**Product/ Innovation Strategy:** In the APAC data center refrigerant market, a strategic focus on innovation drives product development. Collaborate with industry leaders to introduce eco-friendly refrigerants and advanced cooling technologies, meeting evolving regulatory standards. Leverage data analytics for real-time monitoring, optimizing

cooling efficiency, and reducing environmental impact while ensuring operational excellence.

**Growth/ Marketing Strategy:** Utilize targeted marketing campaigns highlighting eco-friendly benefits and energy savings. Forge partnerships with data center operators and OEMs to expand reach and offer comprehensive solutions. Continuously innovate to stay ahead in the competitive landscape.

**Competitive Strategy:** Emphasizing differentiation and value proposition will be crucial for success in the market. Conduct thorough market analysis to identify niche segments and competitive advantages and position products accordingly. Forge alliances with key stakeholders and offer customizable solutions to meet diverse customer needs effectively.

## Contents

### Executive Summary

## 1 MARKETS

### 1.1 Industry Outlook

#### 1.1.1 Market Definition

#### 1.1.2 Data Center Trends

##### 1.1.2.1 Data Center Capacities: Current and Future

##### 1.1.2.2 Data Center Power Consumption Scenario

##### 1.1.2.3 Impact of Carbon-Neutral Data Center (CNDC) Operations on Data Center

#### Refrigerant Market

##### 1.1.2.3.1 Current and Future Scenario for CNDC

##### 1.1.2.3.2 Alternative Solutions to Current HVAC Systems Used in Data Centers

##### 1.1.2.3.3 Cost Analysis

###### 1.1.2.3.3.1 Capital Expenditure (CAPEX)

###### 1.1.2.3.3.1.1 Infrastructure Cost

###### 1.1.2.3.3.2 Operational Expenditure (OPEX)

###### 1.1.2.3.3.2.1 Energy Cost

##### 1.1.2.3.4 Key Countries to Focus

##### 1.1.2.4 Impact of United Nations Intergovernmental Panel on Climate Change on

#### Data Center Market

##### 1.1.2.4.1 Impact Assessment of United Intergovernmental Panel on Climate Change (IPCC)'s report

##### 1.1.2.5 Impact of PFAS Refrigerant Ban on the Data Center Cooling Outlook

###### 1.1.2.5.1 Alternative Cooling Solutions to PFAS Refrigerants

###### 1.1.2.5.2 Advantages and Disadvantages of Non-PFAS Refrigerants

##### 1.1.2.6 Data Center Cooling Strategies

###### 1.1.2.6.1 Upcoming Data Center Refrigerant Concepts

##### 1.1.2.7 Refrigerant Selection Criteria

##### 1.1.2.8 Other Industrial Trends

###### 1.1.2.8.1 HPC Cluster Developments

###### 1.1.2.8.2 Blockchain Initiatives

###### 1.1.2.8.3 Super Computing

###### 1.1.2.8.4 5G and 6G Developments

###### 1.1.2.8.5 Impact of Server/Rack Density

### 1.2 Ecosystem/Ongoing Programs

#### 1.2.1 Important Regulations

- 1.2.2 Government Initiatives and Impacts
- 1.3 Business Dynamics
  - 1.3.1 Business Drivers
    - 1.3.1.1 Expanding Data Center Industry
      - 1.3.1.1.1 Data Center Investment Landscape
        - 1.3.1.1.1.1 Key Regional Data Center Investment Trend (2022-2023)
    - 1.3.1.2 Sustainable Development Efforts and CSR Activities
      - 1.3.1.2.1 The Green IT Cube
    - 1.3.1.3 Growing Adoption of Alternate Cooling Solutions for Improved Water Usage Efficiency
      - 1.3.1.4 Need for High Energy Efficiency
  - 1.3.2 Business Challenges
    - 1.3.2.1 Phasing out of PFAS Refrigerants
    - 1.3.2.2 Intense Market Competition from Diverse Cooling Technology
    - 1.3.2.3 Rapid Adoption of Refrigerants over Air Cooling Driven by its Advantages
      - 1.3.2.3.1 Leading Hyperscale Data Centre Operators to Have a Huge Impact on Market Adoption
  - 1.3.3 Business Opportunities
    - 1.3.3.1 AI and Neural Network Implementation to Optimize Cooling
    - 1.3.3.2 Growing Traction for Indirect Thermosyphon Cooling
    - 1.3.3.3 Increase in Investments toward Data Center Cooling Innovations
    - 1.3.3.4 Growing Utilization of Advanced Refrigerants to Meet Environmental Targets
    - 1.3.3.5 Resurgence of Air-Cooled Chillers
- 1.4 Supply Chain Analysis
- 1.5 Pricing Analysis

## **2 REGIONS**

- 2.1 Data Center Outlook
- 2.2 China
- 2.3 Asia Pacific and Japan
  - 2.3.1 Japan
  - 2.3.2 Australia
  - 2.3.3 India
  - 2.3.4 Singapore
  - 2.3.5 Rest of Asia Pacific

## **3 MARKETS - COMPETITIVE BENCHMARKING & COMPANY PROFILES**

- 3.1 Competitive Benchmarking
- 3.2 Company Profiles
  - 3.2.1 DAIKIN INDUSTRIES, Ltd.
    - 3.2.1.1 Company Overview
    - 3.2.1.2 Product Portfolio
    - 3.2.1.3 Customer Profile
      - 3.2.1.3.1 Target Customer Segments
      - 3.2.1.3.2 Key Clients
    - 3.2.1.4 Analyst View
      - 3.2.1.4.1 Regions of Growth:

## **4 RESEARCH METHODOLOGY**

- 4.1 Data Sources
  - 4.1.1 Primary Data Sources
  - 4.1.2 Secondary Data Sources
  - 4.1.3 Data Triangulation
- 4.2 Market Estimation and Forecast
  - 4.2.1 Factors for Data Prediction and Modelling

## List Of Figures

### LIST OF FIGURES

Figure 1: Properties of Hydrogen, Fluorine, and Chlorine Refrigerants

Figure 2: Phase-Out Schedules for HCFCs and HFCs

Figure 3: Asia-Pacific Data Center Refrigerant Market, \$Million, 2022-2032

Figure 4: Asia-Pacific Data Center Refrigerant Market (by Industry), \$Million, 2022 and 2032

Figure 5: Asia-Pacific Data Center Refrigerant Market (by Data Center Type), \$Million, 2022 and 2032

Figure 6: Asia-Pacific Data Center Refrigerant Market (by Refrigerant Type), \$Million, 2022 and 2032

Figure 7: Asia-Pacific Data Center Refrigerant Market (by Cooling Type), \$Million, 2022 and 2032

Figure 8: Asia-Pacific Data Center Refrigerant Market (by Deployment), \$Million, 2022 and 2032

Figure 9: Data Center Refrigerant Market (by Region), 2022

Figure 10: Scope Definition

Figure 11: Hyperscale Data Center Capacity (by Region), MW, 2021

Figure 12: Anticipated Energy Consumption, by Data Center Types, TWh, 2023

Figure 13: Power Flows in a typical Data Center:

Figure 14: Pathway to Carbon Neutrality in Data Centers

Figure 15: Key Factors for Assessing Infrastructure Cost in a Data Center Project

Figure 16: CAPEX Comparison: Traditional Data Centers (TDC) Vs Carbon Neutral Data Centers (CNDC)

Figure 17: Key Factors for Assessing Energy Cost in Data Center Project

Figure 18: OPEX Comparison: Traditional Data Centers (TDC) Vs Carbon Neutral Data Centers (CNDC):

Figure 19: Major Countries' Share of Total Installed Renewable Capacity, 2021

Figure 20: Trend in Industrial Refrigeration

Figure 21: Estimated Capital Expense for Various Data Center Cooling Technologies

Figure 22: Some Criteria Followed by Data Centers while Choosing Refrigerants

Figure 23: GWP and ODP of Most Common Refrigerants in Data Centers

Figure 24: Estimated Worldwide 5G Adoption as a Share of Total Mobile Connections (Excluding IoT)

Figure 25: Share of Data Center (by Country), 2022

Figure 26: Water Utility and Wastewater Cost Comparison in Data Centers, 2021

Figure 27: Cooling Efficiency and Water Usage of Data Center Cooling Technologies



- Figure 28: Energy Distribution in a Typical Data Center, 2022
- Figure 29: Evolution of Refrigerants from 1830 and Future Anticipations
- Figure 30: Data Center Web Traffic, Zettabytes per Year, 2016-2021
- Figure 31: Data Center pPue Analysis
- Figure 32: Supply Chain Analysis of Data Center Refrigerant Market
- Figure 33: Competitive Benchmarking Matrix
- Figure 34: Data Center Refrigerant Market: Research Methodology
- Figure 35: Data Triangulation
- Figure 36: Top-Down and Bottom-Up Approach
- Figure 37: Assumptions and Limitations

## List Of Tables

### LIST OF TABLES

Table 1: Advantages and Disadvantages of Non-PFAS Refrigerants

Table 2: Regulations Impacting the Data Center Refrigerant Market

Table 3: Government Initiatives and Impacts

Table 4: Recent Developments by Leading Companies toward Data Center Cooling, 2019-2023

Table 5: Key Companies and Developments toward Neural Networks in Data Centers

Table 6: Key Companies Exploring Indirect Thermosyphon Cooling

Table 7: Data Center Refrigerant Pricing

Table 8: Data Center Refrigerant Market (by Region), \$Million, 2022-2032

Table 9: DAIKIN INDUSTRIES, Ltd.: Product Portfolio

## I would like to order

Product name: Asia-Pacific Data Center Refrigerant Market: Focus on Product, Application, and Country  
- Analysis and Forecast, 2023-2032

Product link: <https://marketpublishers.com/r/AAE50BBC7CABEN.html>

Price: US\$ 3,250.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer  
Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click  
button on product page <https://marketpublishers.com/r/AAE50BBC7CABEN.html>