

Refrigerant Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Type (Fluorocarbons, Hydrocarbons, Inorganic Refrigerants, Others), By Application (Refrigeration System, Chillers, Air Conditioning Systems, Others), By Company, By Geography, Forecast & Opportunities, 2028

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Abstracts

The Global Refrigerant Market was valued at USD 5.71 billion in 2022 and is projected to experience strong growth in the forecast period, with a Compound Annual Growth Rate (CAGR) of 5.33% through 2028 and is expected to reach at USD 7.65 billion by 2028. Refrigerants are fluid mixtures used in heat pump or refrigeration cycles to act as coolants. During the refrigeration cycle, they undergo a phase change from liquid to gas. They are chosen for their non-corrosive nature, high heat vaporization, moderate density in liquid form, and high density in gaseous form. Various chemicals, such as hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), and other inorganic compounds, are utilized as refrigerants.

The demand for air conditioners has surged due to urbanization and improvements in lifestyle, thereby driving the growth of the refrigerant market. Technological advancements and the widespread use of freezing techniques in the food and transportation industries also contribute to this growth. The production of automobiles, which extensively use refrigerants in air conditioning systems, further boosts the demand for refrigerants. Moreover, the increasing production of electric vehicles plays a significant role in energy conservation and fuels the refrigerant market. The commercial sector has also witnessed substantial growth worldwide, with the proliferation of offices, shopping malls, and other infrastructure. These establishments are equipped with

heating, ventilation, and air conditioning (HVAC) systems, making refrigerants a crucial component. Thus, the rapid expansion of the commercial sector drives the growth of the refrigerant market.

The rise in living standards and per capita income in India has led to changes in individual preferences. The country is experiencing significant development, accompanied by an increased purchase of health and wellness food products, including organic food that requires cold storage, such as peas, corn, and packaged frozen food items like dairy, baby food, and confectionery products. This trend further contributes to the growth of the refrigerant market. The increasing demand for packaged frozen food presents lucrative opportunities for market expansion.

Key Market Drivers

Growing Demand for Refrigerants in the Pharmaceutical Industry

The pharmaceutical industry relies heavily on refrigeration and cooling systems to maintain the quality and effectiveness of temperature-sensitive products. Refrigerants play a crucial role in meeting stringent regulatory guidelines and ensuring the integrity of vaccines, medications, biologics, and other pharmaceutical products. The distribution of vaccines, especially those requiring ultra-low temperatures, has gained prominence due to global vaccination efforts. The COVID-19 pandemic has highlighted the critical importance of refrigerants in maintaining the cold chain and preserving vaccine efficacy during transport and storage. Moreover, the pharmaceutical industry is witnessing a surge in the development and production of biologics and specialty drugs, which require precise temperature control throughout their lifecycle.

Growth in Technological Advancements

Technological advancements are optimizing cooling system designs and components, resulting in enhanced energy efficiency. Improved compressor technologies, advanced heat exchangers, and optimized system controls contribute to systems that deliver equivalent or superior cooling performance while consuming less energy. Intelligent sensors, real-time monitoring, and data analytics enable remote diagnostics, predictive maintenance, and system performance optimization. Cryogenic technologies and emerging applications such as magnetic refrigeration are advancing cooling technology. Innovative refrigerant blending techniques are generating solutions with improved properties and efficiency.

Key Market Challenges

Flammability and Safety Concerns

The transition to more environmentally friendly refrigerants introduces challenges related to flammability and safety. Many alternative refrigerants possess varying degrees of flammability, requiring adjustments to equipment, components, and system designs to ensure safe operation. Specialized training is required for technicians and operators handling systems with flammable refrigerants.

Transition to Low-GWP Alternatives

Transitioning to low-GWP refrigerants requires careful consideration of technical compatibility, availability, and training. Retrofitting or replacing systems with new refrigerants can be complex and costly, and skilled personnel are needed to manage these transitions.

Key Market Trends

Growing Demand for Natural Refrigerants

The demand for natural refrigerants is driven by their low or zero global warming potential (GWP) and environmental benefits. Natural refrigerants are gaining prominence as alternatives to high-GWP synthetic refrigerants due to regulatory changes and environmental concerns. They offer energy efficiency and improved system performance.

Segmental Insights

Type Insights

In 2022, the fluorocarbons segment dominated the refrigerant market, with halocarbons like HFCs and HCFCs being widely used in refrigeration and air conditioning systems.

Application Insights

The refrigeration system segment dominated the market in 2022, driven by the widespread use of refrigeration and cooling appliances in residential, commercial, and industrial settings.

Regional Insights

The Asia-Pacific region, particularly China and India, dominates the refrigerant market due to rapid urbanization, economic growth, and increased demand for refrigerants in various sectors.

Key Market Players

Honeywell International Inc.

Daikin Industries Ltd

Arkema S.A.

Dongyue Group

The Chemours Company

Mexichem SAB de CV

Sinochem Group

Linde Group

SRF Limited

Gujarat Fluorochemicals Limited

Report Scope:

In this report, the Global Refrigerant Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Refrigerant Market, By Type:

Fluorocarbons

Hydrocarbons

Inorganic Refrigerants

Others

Refrigerant Market, By Application:

Refrigeration System

Chillers

Air Conditioning Systems

Others

Global Refrigerant Market, By region:

North America

United States

Canada

Mexico

Asia-Pacific

China

India

South Korea

Australia

Japan

Europe

Germany

France

United Kingdom

Spain

Italy

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Refrigerant Market.

Available Customizations:

Global Refrigerant Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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