

Fire Fighting Chemicals Market Report by Type (Dry Chemical, Wet Chemicals, Dry Powder, Foam Based), Chemicals (Monoammonium Phosphate, Halon, Carbon Dioxide, Potassium Bicarbonate, Potassium Citrate, Sodium Chloride, and Others), Application (Portable Fire Extinguishers, Automatic Fire Sprinklers, Fire Retardant Bulkhead, Fire Dampers, and Others), and Region 2024-2032

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Report description:

The global fire fighting chemicals market size reached US\$ 2.7 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 3.6 Billion by 2032, exhibiting a growth rate (CAGR) of 3.4% during 2024-2032. The increasing construction of residential and commercial buildings, rising need for effective fire suppression solutions to protect densely populated areas, and the growing evolution of fire suppression technologies are some of the major factors propelling the market.

Fire fighting chemicals are specialized compounds designed to suppress, control, or prevent fires by interfering with the combustion process. They possess high heat resistance, non-flammability, rapid heat absorption, and the ability to disrupt chemical reactions that sustain fire. They are available in easily deployable formats, such as portable fire extinguishers, which enable quick action during fire emergencies. They aid in reducing the risk of ignition and slowing down fire propagation. They are widely used in various commercial spaces, including offices, retail stores, and warehouses, to safeguard property and occupants.

Rapid urbanization and increasing construction of residential and commercial buildings are catalyzing the demand for fire fighting chemicals. Additionally, the rising need for effective fire suppression solutions to protect densely populated areas, commercial establishments, and critical infrastructure projects from potential fire-related hazards is favoring the market growth. Apart from this, the increasing reliance of companies on biodegradable and non-toxic fire suppressing chemicals to minimize ecological footprint and ensure effective fire containment is offering a favorable market outlook. Furthermore, various leading manufacturers

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are investing in formulating compounds that offer enhanced extinguishing properties, longer shelf life, and compatibility with various fire hazards. Moreover, the increasing utilization of these chemicals in aviation and automotive industries to ensure the safety of passengers, crew, and cargo is driving their adoption.

Fire Fighting Chemicals Market Trends/Drivers:

Technological advancements in fire suppression solutions

The evolution of fire suppression technologies represents one of the major factors influencing the market positively. Additionally, rapid advancements in materials science, chemistry, and engineering are promoting the development of innovative fire fighting chemicals that offer superior extinguishing capabilities with minimal adverse environmental impacts. Apart from this, the increasing use of water-based fire fighting chemicals across various industries on account of their effectiveness in cooling and suppressing fires without leaving harmful residues is favoring the market growth. Apart from this, the emergence of smart fire suppression systems equipped with sensors, actuators, and real-time data analytics is attracting a wider consumer base.

Growing awareness about industrial hazards and risk mitigation

Additionally, the expansion of industries across the globe and rising incidences of potential fire hazards, including flammable liquids, gases, and electrical equipment, are catalyzing the demand for fire fighting chemicals. Apart from this, the growing consciousness among companies about the benefits of a proactive approach to fire safety is driving the demand for efficient fire fighting chemicals to save human lives, protect valuable assets, and prevent production disruptions. Furthermore, strategic collaborations between fire fighting chemical manufacturers and industrial players to develop tailored solutions that address specific risk profiles are favoring the market growth.

Implementation of fire safety regulations and standards

The implementation of various stringent regulations and standards across industries and regions is contributing to the market growth. Additionally, the governing authorities and the regulatory bodies are undertaking various initiatives to spread awareness about the importance of fire prevention and containment, in several sectors, such as manufacturing, energy, and transportation. These regulations mandate the implementation of advanced fire suppression technologies, including the use of fire fighting chemicals to ensure the safety of personnel, assets, and the environment. Apart from this, various leading companies are continuously investing in advanced fire fighting chemicals that offer enhanced extinguishing capabilities and minimal environmental impact.

Fire Fighting Chemicals Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global fire fighting chemicals market report, along with forecasts at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on type, chemicals and application.

Breakup by Type:

- Dry Chemicals
- Wet Chemicals
- Dry Powder
- Foam Based

Dry chemicals dominate the market

The report has provided a detailed breakup and analysis of the market based on the type. This includes dry chemicals, wet chemicals, dry powder, and foam based. According to the report, dry chemicals represent the largest market segment due to their compatibility with a wide range of fire classes. Dry chemical agents are very effective in combating class A, B, and C fires, which involve ordinary combustibles, flammable liquids, and electrical equipment. Apart from this, they possess a non-conductive nature, which makes them suitable for extinguishing electrical fires. They help form a barrier that prevents the flow of electricity and ensure the safe suppression of electrical equipment without the risk of electrocution. Furthermore, dry chemicals leave minimal residue after extinguishing fires, which helps minimize the cleanup process and reduces the potential damage caused by the suppression. Moreover, these chemicals are relatively easy to store and transport due to their solid or powder form.

Breakup by Chemicals:

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- Monoammonium Phosphate
- Halon
- Carbon Dioxide
- Potassium Bicarbonate
- Potassium Citrate
- Sodium Chloride
- Others

A detailed breakup and analysis of the market based on the chemicals has also been provided in the report. This includes monoammonium phosphate, halon, carbon dioxide, potassium bicarbonate, potassium citrate, sodium chloride, and others. Monoammonium phosphate is a dry chemical compound widely used in fire extinguishers due to its effective suppression capabilities across multiple fire classes. It offers versatility and helps form a barrier that separates fuel and oxygen and prevents combustion.

Halon chemicals are potent fire suppressants characterized by their exceptional efficacy in extinguishing fires. They can interrupt the chemical chain reaction and prevent fire combustion.

Carbon dioxide (CO₂) is a colorless, odorless gas compound produced through various natural processes and human activities, including respiration, combustion, and industrial processes. It is widely used in electrical fires and confined spaces due to its non-conductive and inert properties. Additionally, it is easily deployable and leaves no residue, which makes it an ideal choice for minimizing damage in sensitive areas.

Potassium bicarbonate is widely used in class K fire extinguishers for suppressing kitchen fires involving grease and cooking oils. Its alkaline nature helps emulsify the grease, forms a soapy layer that seals the surface, and efficiently extinguishes the fire. Potassium citrate is utilized to manage kidney stones and urinary tract infections due to its ability to raise urine pH and prevent stone formation. Additionally, it finds applications in the food and beverage (F&B) industry to enhance flavors and as a buffering agent to regulate acidity.

Sodium chloride, also known as regular table salt, is utilized in certain fire extinguishers, especially those designed for Class D fires involving flammable metals. It helps in forming a crust on the surface of the metal, preventing further combustion and effectively suppressing the fire.

Breakup by Application:

- Portable Fire Extinguishers
- Automatic Fire Sprinklers
- Fire Retardant Bulkhead
- Fire Dampers
- Others

Portable fire extinguishers hold the largest market share

The report has provided a detailed breakup and analysis of the market based on the application. This includes portable fire extinguishers, automatic fire sprinklers, fire retardant bulkhead, fire dampers, and others. According to the report, portable fire extinguishers represented the largest segment as they provide immediate access to fire suppression tools. Additionally, their compact size and ease of deployment allow for swift action in the initial stages of a fire outbreak and aid in minimizing potential damage and enhancing overall safety. Apart from this, they are more cost-effective to manufacture, install, and maintain as compared to larger fixed fire suppression systems. Furthermore, the user-friendly design includes clear operating instructions and visual indicators, which are promoting the adoption of portable fire extinguishers across residential and commercial sectors. Moreover, many jurisdictions and safety standards require the presence of portable fire extinguishers in commercial buildings, public spaces, and residential properties.

Breakup by Region:

- North America

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- o United States
- o Canada
- Asia-Pacific
- o China
- o Japan
- o India
- o South Korea
- o Australia
- o Indonesia
- o Others
- Europe
- o Germany
- o France
- o United Kingdom
- o Italy
- o Spain
- o Russia
- o Others
- Latin America
- o Brazil
- o Mexico
- o Others
- Middle East and Africa

North America exhibits a clear dominance, accounting for the largest fire fighting chemicals market share

The market research report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, North America accounted for the largest market share due to the presence of a robust infrastructure and advanced manufacturing capabilities in the region. Additionally, North America has well-established chemical production facilities, which enable the timely and efficient creation of firefighting chemicals in large quantities and allow the manufacturers to respond swiftly to market demands and provide a steady supply of products. Apart from this, the region has a robust network of research institutions, universities, and private companies dedicated to advancing firefighting technology. Furthermore, the implementation of rigorous safety protocols by the governing authorities and regulatory bodies in the region promotes the use of high-quality, certified firefighting chemicals. Moreover, the efficient logistics infrastructure in North America ensures the timely delivery of firefighting chemicals to various end-users, such as industrial facilities, commercial buildings, and residential areas.

Competitive Landscape:

Companies are continuously investing in research and development (R&D) activities to develop innovative and environmentally friendly chemicals that offer superior fire suppression capabilities and minimize potential negative impacts on the environment. Additionally, they are diversifying their product portfolios and offering specialized firefighting chemicals tailored for various industries, including industrial, commercial, and residential sectors, addressing different fire risks and requirements. Apart from this, they are conducting training programs for end-users and emergency responders to ensure the safe and efficient utilization of their products. Moreover, various leading companies are focusing on sustainable manufacturing processes, exploring biodegradable chemicals, and minimizing the carbon footprint of their operations to align with global sustainability goals and promote environmental health.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major

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companies have also been provided. Some of the key players in the market include:

- Angus Fire
- DIC Corporation
- Fire Safety Devices Pvt. Ltd.
- Foamtech Antifire Company
- Johnson Controls International plc
- Linde plc
- Orchidee Europe
- Perimeter Solutions
- Safequip Pty Ltd
- Solvay S.A

Recent Developments:

- In October 2022, Johnson Controls, the global leader for smart, healthy and sustainable buildings, acquired Rescue Air Systems, a leading provider of firefighter air replenishment systems (FARS) that enable firefighters to refill breathing air bottles within a building during emergencies. The provision of air replenishment systems expands the robust fire suppression products portfolio of Johnson Controls.
- In June 2022, Perimeter Solutions announced the launch of SOLBERG? VERSAGARD? multipurpose fluorine-free foam concentrate. The foam concentrate is designed for extinguishing and securing both Class B (hydrocarbon fuel and polar solvent fuel) and deep-seated Class A Fires.

Key Questions Answered in This Report

1. What was the size of the global fire fighting chemicals market in 2023?
2. What is the expected growth rate of the global fire fighting chemicals market during 2024-2032?
3. What are the key factors driving the global fire fighting chemicals market?
4. What has been the impact of COVID-19 on the global fire fighting chemicals market?
5. What is the breakup of the global fire fighting chemicals market based on the type?
6. What is the breakup of the global fire fighting chemicals market based on the application?
7. What are the key regions in the global fire fighting chemicals market?
8. Who are the key players/companies in the global fire fighting chemicals market?

Table of Contents:

- 1 Preface
- 2 Scope and Methodology
 - 2.1 Objectives of the Study
 - 2.2 Stakeholders
 - 2.3 Data Sources
 - 2.3.1 Primary Sources
 - 2.3.2 Secondary Sources
 - 2.4 Market Estimation
 - 2.4.1 Bottom-Up Approach
 - 2.4.2 Top-Down Approach
 - 2.5 Forecasting Methodology
- 3 Executive Summary
- 4 Introduction
 - 4.1 Overview
 - 4.2 Key Industry Trends

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5 Global Fire Fighting Chemicals Market

5.1 Market Overview

5.2 Market Performance

5.3 Impact of COVID-19

5.4 Market Forecast

6 Market Breakup by Type

6.1 Dry Chemicals

6.1.1 Market Trends

6.1.2 Market Forecast

6.2 Wet Chemicals

6.2.1 Market Trends

6.2.2 Market Forecast

6.3 Dry Powder

6.3.1 Market Trends

6.3.2 Market Forecast

6.4 Foam Based

6.4.1 Market Trends

6.4.2 Market Forecast

7 Market Breakup by Chemicals

7.1 Monoammonium Phosphate

7.1.1 Market Trends

7.1.2 Market Forecast

7.2 Halon

7.2.1 Market Trends

7.2.2 Market Forecast

7.3 Carbon Dioxide

7.3.1 Market Trends

7.3.2 Market Forecast

7.4 Potassium Bicarbonate

7.4.1 Market Trends

7.4.2 Market Forecast

7.5 Potassium Citrate

7.5.1 Market Trends

7.5.2 Market Forecast

7.6 Sodium Chloride

7.6.1 Market Trends

7.6.2 Market Forecast

7.7 Others

7.7.1 Market Trends

7.7.2 Market Forecast

8 Market Breakup by Application

8.1 Portable Fire Extinguishers

8.1.1 Market Trends

8.1.2 Market Forecast

8.2 Automatic Fire Sprinklers

8.2.1 Market Trends

8.2.2 Market Forecast

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- 8.3 Fire Retardant Bulkhead
 - 8.3.1 Market Trends
 - 8.3.2 Market Forecast
- 8.4 Fire Dampers
 - 8.4.1 Market Trends
 - 8.4.2 Market Forecast
- 8.5 Others
 - 8.5.1 Market Trends
 - 8.5.2 Market Forecast
- 9 Market Breakup by Region
 - 9.1 North America
 - 9.1.1 United States
 - 9.1.1.1 Market Trends
 - 9.1.1.2 Market Forecast
 - 9.1.2 Canada
 - 9.1.2.1 Market Trends
 - 9.1.2.2 Market Forecast
 - 9.2 Asia-Pacific
 - 9.2.1 China
 - 9.2.1.1 Market Trends
 - 9.2.1.2 Market Forecast
 - 9.2.2 Japan
 - 9.2.2.1 Market Trends
 - 9.2.2.2 Market Forecast
 - 9.2.3 India
 - 9.2.3.1 Market Trends
 - 9.2.3.2 Market Forecast
 - 9.2.4 South Korea
 - 9.2.4.1 Market Trends
 - 9.2.4.2 Market Forecast
 - 9.2.5 Australia
 - 9.2.5.1 Market Trends
 - 9.2.5.2 Market Forecast
 - 9.2.6 Indonesia
 - 9.2.6.1 Market Trends
 - 9.2.6.2 Market Forecast
 - 9.2.7 Others
 - 9.2.7.1 Market Trends
 - 9.2.7.2 Market Forecast
 - 9.3 Europe
 - 9.3.1 Germany
 - 9.3.1.1 Market Trends
 - 9.3.1.2 Market Forecast
 - 9.3.2 France
 - 9.3.2.1 Market Trends
 - 9.3.2.2 Market Forecast
 - 9.3.3 United Kingdom

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- 9.3.3.1 Market Trends
- 9.3.3.2 Market Forecast
- 9.3.4 Italy
 - 9.3.4.1 Market Trends
 - 9.3.4.2 Market Forecast
- 9.3.5 Spain
 - 9.3.5.1 Market Trends
 - 9.3.5.2 Market Forecast
- 9.3.6 Russia
 - 9.3.6.1 Market Trends
 - 9.3.6.2 Market Forecast
- 9.3.7 Others
 - 9.3.7.1 Market Trends
 - 9.3.7.2 Market Forecast
- 9.4 Latin America
 - 9.4.1 Brazil
 - 9.4.1.1 Market Trends
 - 9.4.1.2 Market Forecast
 - 9.4.2 Mexico
 - 9.4.2.1 Market Trends
 - 9.4.2.2 Market Forecast
 - 9.4.3 Others
 - 9.4.3.1 Market Trends
 - 9.4.3.2 Market Forecast
- 9.5 Middle East and Africa
 - 9.5.1 Market Trends
 - 9.5.2 Market Breakup by Country
 - 9.5.3 Market Forecast
- 10 SWOT Analysis
 - 10.1 Overview
 - 10.2 Strengths
 - 10.3 Weaknesses
 - 10.4 Opportunities
 - 10.5 Threats
- 11 Value Chain Analysis
- 12 Porters Five Forces Analysis
 - 12.1 Overview
 - 12.2 Bargaining Power of Buyers
 - 12.3 Bargaining Power of Suppliers
 - 12.4 Degree of Competition
 - 12.5 Threat of New Entrants
 - 12.6 Threat of Substitutes
- 13 Price Analysis
- 14 Competitive Landscape
 - 14.1 Market Structure
 - 14.2 Key Players
 - 14.3 Profiles of Key Players

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- 14.3.1 Angus Fire
 - 14.3.1.1 Company Overview
 - 14.3.1.2 Product Portfolio
- 14.3.2 DIC Corporation
 - 14.3.2.1 Company Overview
 - 14.3.2.2 Product Portfolio
 - 14.3.2.3 Financials
 - 14.3.2.4 SWOT Analysis
- 14.3.3 Fire Safety Devices Pvt. Ltd.
 - 14.3.3.1 Company Overview
 - 14.3.3.2 Product Portfolio
- 14.3.4 Foamtech Antifire Company
 - 14.3.4.1 Company Overview
 - 14.3.4.2 Product Portfolio
- 14.3.5 Johnson Controls International plc
 - 14.3.5.1 Company Overview
 - 14.3.5.2 Product Portfolio
 - 14.3.5.3 Financials
 - 14.3.5.4 SWOT Analysis
- 14.3.6 Linde plc
 - 14.3.6.1 Company Overview
 - 14.3.6.2 Product Portfolio
 - 14.3.6.3 Financials
- 14.3.7 Orchidee Europe
 - 14.3.7.1 Company Overview
 - 14.3.7.2 Product Portfolio
- 14.3.8 Perimeter Solutions
 - 14.3.8.1 Company Overview
 - 14.3.8.2 Product Portfolio
- 14.3.9 Safequip Pty Ltd
 - 14.3.9.1 Company Overview
 - 14.3.9.2 Product Portfolio
- 14.3.10 Solvay S.A.
 - 14.3.10.1 Company Overview
 - 14.3.10.2 Product Portfolio
 - 14.3.10.3 Financials
 - 14.3.10.4 SWOT Analysis

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