

 Flame Retardants Market Report by Type (Alumina Trihydrate, Brominated Flame Retardants, Antimony Trioxide, Phosphorus Flame Retardants, and Others),
Application (Unsaturated Polyester Resins, Epoxy Resins, PVC, Rubber, Polyolefins, and Others), End Use Industry (Construction, Wires and Cables, Automotive and Transportation, Electrical and Electronics, and Others), and Region 2023-2028

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#### **Report description:**

The global flame retardants market size reached US\$ 9.2 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 13.5 Billion by 2028, exhibiting a growth rate (CAGR) of 6.60% during 2022-2028. The increasing use of flame retardants in the aerospace industry, rising emphasis on fire safety regulations and standards across various industries, and the introduction of bio-based flame retardants derived from renewable sources are some of the major factors propelling the market.

Flame retardants are chemical substances or materials designed to inhibit or slow down the spread of fire. They are capable of withstanding high temperatures without undergoing combustion themselves and help enhance the fire resistance of various products and materials by reducing their flammability. They aid in extending the functional life of materials and products by reducing fire-related damage. They protect electronic devices, such as computers and TVs, from overheating and ignition. They are widely used in construction materials like insulation, wiring, and paints to enhance fire safety in buildings.

The rising awareness among people and businesses about the importance of fire safety is encouraging them to make investments in fire-resistant materials and products. Additionally, the increasing use of flame retardants in the aerospace industry to meet stringent safety standards for aircraft interiors, including cabin materials, wiring, and insulation is creating a positive market outlook. Apart from this, the rise of electric vehicles (EVs) is offering new opportunities for flame retardants, as the lithium-ion batteries in these automobiles require fire-resistant materials to prevent thermal runaway incidents. Furthermore, the textile

industry is increasingly adopting flame retardant fabrics for applications in workwear, home textiles, and public spaces, enhancing fire safety.

Flame Retardants Market Trends/Drivers: Growing emphasis on fire safety regulations

The increasing emphasis on fire safety regulations and standards across various industries represents one of the key factors positively influencing the market. Additionally, the rising use of flame retardants in the automotive industry to produce interior components, such as seats, dashboards, and wiring harnesses, to prevent fires in the event of accidents is offering a favorable market outlook. Apart from this, the increasing reliance of the electronics industry on flame retardants to protect devices and prevent electrical fires is supporting the market growth. Moreover, the governing authorities and regulatory bodies worldwide are implementing stringent safety standards to reduce the risk of fires and protect lives and property.

## Rising demand from several industries

The escalating demand for fire retardants from different industry verticals, such as construction, automotive, and electronics to enhance safety and meet regulatory requirements is influencing the market positively. Additionally, rapid urbanization and infrastructure development across the globe are driving the demand for flame retardants in insulation, roofing, and cladding to minimize the risk of fires in residential, commercial, and industrial buildings. Apart from this, the leading automakers are increasingly incorporating flame-retardant materials into vehicle interiors and electrical systems to improve driver and passenger safety. Moreover, the increasing adoption of fire retardants in consumer electronics, such as smartphones, laptops, and other mobile devices is propelling the market growth.

## Technological advancements

Continuous advancement in flame retardant technologies is the other major factor contributing to the market growth. Additionally, the rising focus on developing flame retardants that are environmentally friendly and less toxic is offering a favorable market outlook. Apart from this, the introduction of bio-based flame retardants derived from renewable sources is attracting a wider consumer base. Furthermore, various researchers and manufacturers are developing innovative flame retardant solutions that are more effective, environmentally friendly, and versatile. Moreover, the increasing use of nanoscale flame retardant additives to minimize the use of chemicals and promote environmental health is strengthening the growth of the market.

# Flame Retardants Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global flame retardants market report, along with forecasts at the global, regional, and country levels for 2023-2028. Our report has categorized the market based on type, application and end use industry.

Breakup by Type:

Alumina Trihydrate Brominated Flame Retardants Antimony Trioxide Phosphorus Flame Retardants Others

Brominated flame retardants dominate the market

The report has provided a detailed breakup and analysis of the market based on the type. This includes alumina trihydrate, brominated flame retardants, antimony trioxide, phosphorus flame retardants, and others. According to the report, brominated flame retardants represented the largest segment due to their exceptional effectiveness in preventing and delaying the spread of fires. Additionally, they are highly efficient at extinguishing flames, preventing ignition, and ensuring the safety of individuals and businesses. Apart from this, they can be incorporated into plastics, foams, textiles, and coatings, which make them suitable for various industrial applications. Furthermore, they provide extended protection against fires, ensuring that products remain fire-resistant throughout their lifespan. Moreover, their effectiveness at lower concentrations as compared to alternative flame retardants allows manufacturers to achieve the required level of fire safety without significantly increasing production costs.

Breakup by Application:

Unsaturated Polyester Resins Epoxy Resins PVC Rubber Polyolefins Others

Epoxy resins represent the largest market segment

The report has provided a detailed breakup and analysis of the market based on the application. This includes unsaturated polyester resins, epoxy resins, PVC, rubber, polyolefins, and others. According to the report, epoxy resins account for the largest market share as they possess exceptional flame retardant properties. Additionally, they undergo a chemical transformation that promotes the formation of a char layer when exposed to fire and high temperatures. Apart from this, their intrinsic ability to resist flames and slow down the spread of fire makes epoxy resins highly effective in enhancing fire safety. Furthermore, epoxy resins can be formulated to suit various materials, making them adaptable for different industries and products. Moreover, they remain effective for extended periods, ensuring that the fire protection they provide lasts throughout the lifespan of the product. Besides this, they have a relatively low environmental impact compared to certain alternatives.

Breakup by End Use Industry:

Construction Wires and Cables Automotive and Transportation Electrical and Electronics Others

Electrical and electronics hold the largest share in the market

A detailed breakup and analysis of the market based on the end use industry has also been provided in the report. This includes construction, wires and cables, automotive and transportation, electrical and electronics, and others. According to the report, electrical and electronics accounted for the largest market share as they are constructed from a wide range of materials, including plastics, printed circuit boards (PCBs), and insulation materials. Flame retardants are employed to enhance the fire resistance of these materials, protecting the electronic components and preventing fires from spreading within the device. Apart from this, they are prone to high fire risks due to the presence of electrical currents and potential overheating. Flame retardants are engineered to suppress fires quickly, preventing damage to the device itself and potential fire hazards in the surrounding environment. Moreover, they help prevent short circuits from escalating into full-blown fires by interrupting the ignition process and reducing

the combustion rate.

Breakup by Region:

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

Asia Pacific exhibits a clear dominance, accounting for the largest flame retardants 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, Asia Pacific accounted for the largest market share due to rapid urbanization and infrastructure development. The construction of residential and commercial buildings, transportation networks, and industrial complexes requires the incorporation of fire-resistant materials. Flame retardants are essential in meeting the stringent safety standards in these projects, thus driving their widespread use. Additionally, the high concentration of electronic manufacturing in the region drives the demand for flame retardants. Apart from this, the easy availability of key raw material sources, including chemicals required for flame retardant production supports the market growth. Moreover, the expansion of various industries and increasing cases of fire accidents in the Asia Pacific is catalyzing the demand for flame retardants.

#### Competitive Landscape:

Companies are investing significantly in research and development (R&D) activities to introduce more advanced product variants. They are actively exploring innovative flame retardant formulations, including eco-friendly and nanotechnology-based solutions, to improve fire safety and meet evolving regulatory requirements. Additionally, they are diversifying their product portfolios to offer a wide range of flame retardant solutions tailored to specific industries and applications. This includes flame retardants for

textiles, construction materials, electronics, and automotive components, among others. Moreover, many companies are forming strategic partnerships with research institutions, universities, and other businesses to leverage expertise and share resources for the development of new flame retardant technologies.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

Almatis GmbH BASF SE Borealis GmbH (OMV Aktiengesellschaft) Budenheim Iberica S.L.U Campine NV Clariant AG Dover Chemical Corporation (ICC Industries Inc.) Dow Inc. ICL Group Ltd Lanxess AG Otsuka Chemical Co. Ltd. RTP Company (Miller Waste Mills Inc.)

#### Recent Developments:

In December 2021, Clariant AG announced the construction of its first flame retardants production facility in China. In July 2022, BASF SE and THOR GmbH announced their collaboration to offer customers and end-users synergistic benefits by combining BASF's halogen-free flame retardant Flamestab? with THOR's phosphonates AFLAMMIT? technologies for challenging flame resistance applications.

In September 2022, Lanxess AG developed a non-halogen flame retardant that is designed primarily for use in glass fiber-reinforced plastics used to manufacture products for the electrical and electronics industry.

#### Key Questions Answered in This Report

- 1. What was the size of the global flame retardants market in 2022?
- 2. What is the expected growth rate of the global flame retardants market during 2023-2028?
- 3. What are the key factors driving the global flame retardants market?
- 4. What has been the impact of COVID-19 on the global flame retardants market?
- 5. What is the breakup of the global flame retardants market based on the type?
- 6. What is the breakup of the global flame retardants market based on the application?
- 7. What is the breakup of the global flame retardants market based on the end use industry?
- 8. What are the key regions in the global flame retardants market?
- 9. Who are the key players/companies in the global flame retardants 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

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- 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
- 5 Global Flame Retardants 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 Alumina Trihydrate
    - 6.1.1 Market Trends
  - 6.1.2 Market Forecast
  - 6.2 Brominated Flame Retardants
    - 6.2.1 Market Trends
    - 6.2.2 Market Forecast
  - 6.3 Antimony Trioxide
    - 6.3.1 Market Trends
    - 6.3.2 Market Forecast
  - 6.4 Phosphorus Flame Retardants
    - 6.4.1 Market Trends
    - 6.4.2 Market Forecast
  - 6.5 Others
    - 6.5.1 Market Trends
    - 6.5.2 Market Forecast
- 7 Market Breakup by Application
  - 7.1 Unsaturated Polyester Resins
    - 7.1.1 Market Trends
    - 7.1.2 Market Forecast
  - 7.2 Epoxy Resins
    - 7.2.1 Market Trends
    - 7.2.2 Market Forecast
  - 7.3 PVC
    - 7.3.1 Market Trends
    - 7.3.2 Market Forecast
  - 7.4 Rubber
    - 7.4.1 Market Trends
    - 7.4.2 Market Forecast
  - 7.5 Polyolefins
    - 7.5.1 Market Trends
    - 7.5.2 Market Forecast
  - 7.6 Others
    - 7.6.1 Market Trends

7.6.2 Market Forecast

- 8 Market Breakup by End Use Industry
  - 8.1 Construction
    - 8.1.1 Market Trends
    - 8.1.2 Market Forecast
  - 8.2 Wires and Cables
    - 8.2.1 Market Trends
    - 8.2.2 Market Forecast
  - 8.3 Automotive and Transportation
    - 8.3.1 Market Trends
    - 8.3.2 Market Forecast
  - 8.4 Electrical and Electronics
    - 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 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
    - 14.3.1 Almatis GmbH
      - 14.3.1.1 Company Overview
      - 14.3.1.2 Product Portfolio
    - 14.3.2 BASF SE
      - 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 Borealis GmbH (OMV Aktiengesellschaft)
      - 14.3.3.1 Company Overview
      - 14.3.3.2 Product Portfolio
      - 14.3.3.3 SWOT Analysis
    - 14.3.4 Budenheim Iberica S.L.U
      - 14.3.4.1 Company Overview
      - 14.3.4.2 Product Portfolio
    - 14.3.5 Campine NV
      - 14.3.5.1 Company Overview
      - 14.3.5.2 Product Portfolio
      - 14.3.5.3 Financials
    - 14.3.6 Clariant AG
      - 14.3.6.1 Company Overview
      - 14.3.6.2 Product Portfolio
      - 14.3.6.3 Financials
    - 14.3.7 Dover Chemical Corporation (ICC Industries Inc.)
    - 14.3.7.1 Company Overview
    - 14.3.7.2 Product Portfolio
    - 14.3.8 Dow Inc.
      - 14.3.8.1 Company Overview
      - 14.3.8.2 Product Portfolio
      - 14.3.8.3 Financials
      - 14.3.8.4 SWOT Analysis
    - 14.3.9 ICL Group Ltd
      - 14.3.9.1 Company Overview
      - 14.3.9.2 Product Portfolio
      - 14.3.9.3 Financials
    - 14.3.9.4 SWOT Analysis
    - 14.3.10 Lanxess AG
      - 14.3.10.1 Company Overview
      - 14.3.10.2 Product Portfolio

14.3.10.3 Financials

14.3.10.4 SWOT Analysis

14.3.11 Otsuka Chemical Co. Ltd.

14.3.11.1 Company Overview

14.3.11.2 Product Portfolio

14.3.11.3 Financials

14.3.11.4 SWOT Analysis

14.3.12 RTP Company (Miller Waste Mills Inc.)

14.3.12.1 Company Overview

14.3.12.2 Product Portfolio



 Flame Retardants Market Report by Type (Alumina Trihydrate, Brominated Flame Retardants, Antimony Trioxide, Phosphorus Flame Retardants, and Others),
Application (Unsaturated Polyester Resins, Epoxy Resins, PVC, Rubber, Polyolefins, and Others), End Use Industry (Construction, Wires and Cables, Automotive and Transportation, Electrical and Electronics, and Others), and Region 2023-2028

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