

Silicones Market Report by Product Type (Elastomers, Fluids, Gels, Resins), Application (Industrial Processes, Construction Materials, Home and Personal Care, Transportation, Energy, Healthcare, Electronics, and Others), and Region 2024-2032

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Abstracts

The global silicones market size reached US\$ 14.5 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 22.7 Billion by 2032, exhibiting a growth rate (CAGR) of 4.9% during 2024-2032. The significant growth in the construction industry, rising product utilization in the cosmetic and personal care industry, and extensive research and development (R&D) activities are some of the major factors propelling the silicones market.

Silicones refers to synthetic polymers composed of repeating silicon-oxygen units with attached organic groups that exhibit unique properties. It includes elastomers, gels, fluids, greases, resins, sealants, adhesives, and emulsions. They are widely used in automobiles, electronic assemblies, construction activities, medical implants, wound dressings, cosmetics, personal care products, aircraft, and solar panels. Silicones exhibit exceptional thermal stability, chemical resistance, electrical insulation, and physical properties, such as viscosity, elasticity, and surface interactions. They are also inert, non-toxic, biocompatible, and offer long service life in demanding and heavy load conditions.

The rising product utilization in the manufacturing of automotive parts, such as gaskets, o-rings, seals, engine components, lighting systems, airbags, and emission systems, to provide insulation, reduce friction, minimize overheating, maintain structural integrity, and prevent the ingress of fluids and contaminants is proving an impetus to the market growth. Furthermore, the increasing product demand in the healthcare and medical

sector to produce catheters, pacemakers lead, wound-care products, and implants, due to their excellent biocompatibility and durability, is contributing to the market growth. Apart from this, the growing product adoption in the electronics industry as adhesives, sealants, and conformal coatings to protect electronic devices from dust, moisture, and vibrations is positively influencing the market growth. Moreover, the increasing product utilization in the aerospace industry as a sealing and bonding material in aircraft engines, windows, and structural components is favoring the market growth. Other factors, including rapid industrialization activities, increasing product utilization in the power generation industry, and growing demand for personal protective equipment (PPE), are anticipated to drive the market growth.

Silicones Market Trends/Drivers:

The significant growth in the construction industry

Silicones find numerous applications in the construction industry due to their versatility and unique properties that enhance building performance, provide durability, and increase aesthetic appeal. In line with this, silicones are used as adhesives and sealants for waterproofing and sealing applications in windows, doors, and facades. Furthermore, they are used in structural glazing applications to bond glass panels with the building's structural frames without using mechanical fixing. Apart from this, silicones find extensive applications in expansion joints to accommodate movements caused by temperature variations, seismic activities, and structural settling. Moreover, the widespread product utilization in roofing systems as coatings and membranes to provide ultraviolet (UV) resistance and prevent leaks. Additionally, silicones aid in sealing joints in drywall systems, providing acoustic insulation, and enhancing the durability and aesthetics of interior surfaces, which is favoring the market growth.

The rising product utilization in the cosmetics and personal care industry

Silicones are widely used in various makeup products, such as foundations, primers, concealers, and blushes to create a smooth finish, reduce fine lines, and improve the adherence of pigments to the skin. Furthermore, in the increasing product utilization in manufacturing skin and hair care products that enhance the application and absorption of active ingredients and act as an emollient, forming a protective barrier on the skin that aids in retaining moisture, improving skin smoothness, and providing a soft and velvety feel. Apart from this, silicones find extensive applications in antiperspirants, deodorants, and fragrances to facilitate the slow release of fragrance molecules and enhance the longevity and diffusion of scents. Besides this, silicones are also used in body lotions, creams, bath oils, and shower gels to improve product texture and

enhance their moisturizing properties.

Extensive research and development (R&D) activities

The field of silicones has witnessed several notable innovations leading to the development of new products and applications. In line with this, the development of self-healing silicones that can repair themselves when damaged or cut, thus improving durability and service life, is positively influencing the market growth. Furthermore, the utilization of three-dimensional (3D) printing to create highly complex and customized silicone-based objects and prototypes is facilitating the market growth. Moreover, the introduction of shape-memory silicones that can change shapes when subjected to certain stimuli, such as light and heat, is strengthening the market growth. Besides this, the recent development of biobased silicones that are derived from sustainable sources, such as plant-based feedstocks, thus reducing adverse environmental impacts, is providing a thrust to the market growth.

Silicones Industry Segmentation:

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

Breakup by Product Type:

- Elastomers
- Fluids
- Gels
- Resins

Elastomers dominate the silicones market

The report has provided a detailed breakup and analysis of the silicones market based on the product type. This includes elastomers, fluids, gels, and resins. According to the report, elastomers represented the largest market segment.

Elastomers hold a majority share in the silicones market owing to their exceptional flexibility and elasticity, which allows them to stretch and return to their original shape without permanent deformation. They exhibit excellent resistance to heat, oil, solvents, acids, and bases, which makes them ideal candidates for applications in automotive

engines, industrial machinery, aerospace, chemical processing, and electrical systems. Furthermore, elastomers have low permeability to gases and liquids, making them effective sealing agents under high pressure and vacuum conditions. Apart from this, they are easy to process and can be molded into different forms and shapes based on industry-specific requirements, which is contributing to the market growth.

Breakup by Application:

- Industrial Processes
- Construction Materials
- Home and Personal Care
- Transportation
- Energy
- Healthcare
- Electronics
- Others

Industrial processes represent the leading application segment

The report has provided a detailed breakup and analysis of the silicones market based on the application. This includes industrial processes, construction materials, home and personal care, transportation, energy, healthcare, electronics, and others. According to the report, industrial processes represented the largest market segment.

Silicones are widely used in various industrial processes, such as sealing, lubrication, insulation, coating, and bonding, as they exhibit a high degree of versatility and can be formulated into various forms, such as fluids, elastomers, resins, and gels. Furthermore, they offer high resistance to chemicals and temperatures while maintaining their performance and stability. Moreover, their high dielectric strength and excellent electrical insulation properties make them ideal for electronics applications, such as cables, connectors, and insulators. Apart from this, silicones form strong bonds between different substrates, such as metals, plastics, glass, and ceramics. As a result, silicones are widely used in electronic assembly lines, construction activities, and automotive manufacturing.

Breakup by Region:

- North America
- Europe

Asia Pacific

Latin America

Middle East and Africa

Asia Pacific exhibits a clear dominance in the market, accounting for the largest silicones market share

The report has also provided a comprehensive analysis of all the major regional markets, which includes North America, Europe, Asia Pacific, Latin America, and Middle East and Africa. According to the report, Asia Pacific represented the largest market for silicones.

The Asia Pacific region is dominating the silicones market due to increasing product demand from various industries, such as consumer goods, automotive, electronics, aerospace, healthcare, and packaging. In addition to this, the implementation of supportive policies by regional governments to promote industrialization activities to boost economic growth is providing an impetus to the market growth. Moreover, Asia Pacific is becoming a manufacturing hub for various industries owing to the presence of a skilled labor force, favorable regulations, and competitive pricing, which, in turn, is facilitating the demand for silicones in various manufacturing activities. Apart from this, the growing product utilization in the construction industry due to the rapid urbanization activities and increasing demand for multiple infrastructures, such as roads, railway stations, airports, and bridges, is positively influencing the market growth.

Competitive Landscape:

Several top companies are significantly investing in research and development (R&D) activities and focusing on the development of new silicone-based products with improved properties and functionality to meet growing consumer demands, which is supporting the market growth. Along with this, the increasing emphasis by several manufacturers on product diversification to expand the customer base, enter emerging markets, and reduce dependency on specific sectors is acting as another growth-inducing factor. Moreover, several key players are engaged in strategic partnerships and acquisitions to expand their portfolios, increase market penetration, and get access to new technologies and distribution channels. Apart from this, the rising focus on promotional and marketing initiatives to improve brand visibility and increase awareness about products and services is creating a positive outlook for the market growth. Additionally, several top companies are incorporating sustainable practices to meet regulatory requirements and attract environmentally conscious customers.

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

Dow Chemical Company

Wacker Chemie AG

Shin-Etsu Chemical Co., Ltd.

Momentive Performance Materials Inc.

Elkem ASA

Recent Developments:

In November 2021, Dow Chemical Company announced its plan to introduce world's first commercially available carbon-neutral silicones to be used for structural glazing, insulating glass, and weather sealing applications.

In March 2023, Wacker Chemie AG announced its plan to expand its production and cartridge filling capacities for silicone sealants at its N?nchritz facility, in response to rising silicone sealants demand for various applications in doors, windows, kitchens, bath-rooms and walls.

In March 2023, Shin-Etsu Chemical Co., Ltd. developed a silicone rubber that can be used as an optimal insulation covering material for onboard high-voltage cables in automobiles.

Key Questions Answered in This Report

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

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 Properties
- 4.3 Key Industry Trends

5 GLOBAL SILICONES MARKET

- 5.1 Market Overview
- 5.2 Market Performance
 - 5.2.1 Volume Trends
 - 5.2.2 Value Trends
- 5.3 Impact of COVID-19
- 5.4 Market Breakup by Product Type
- 5.5 Market Breakup by Application
- 5.6 Market Breakup by Region
- 5.7 Market Forecast
- 5.8 SWOT Analysis
 - 5.8.1 Overview

- 5.8.2 Strengths
- 5.8.3 Weaknesses
- 5.8.4 Opportunities
- 5.8.5 Threats
- 5.9 Value Chain Analysis
 - 5.9.1 Overview
 - 5.9.2 Research and Development
 - 5.9.3 Raw Material Procurement
 - 5.9.4 Manufacturing
 - 5.9.5 Marketing
 - 5.9.6 Distribution
 - 5.9.7 End-Use
- 5.10 Porters Five Forces Analysis
 - 5.10.1 Overview
 - 5.10.2 Bargaining Power of Buyers
 - 5.10.3 Bargaining Power of Suppliers
 - 5.10.4 Degree of Competition
 - 5.10.5 Threat of New Entrants
 - 5.10.6 Threat of Substitutes
- 5.11 Price Analysis
 - 5.11.1 Price Trends
 - 5.11.2 Price Indicators
 - 5.11.3 Margins Analysis

6 MARKET BREAKUP BY PRODUCT TYPE

- 6.1 Elastomers
 - 6.1.1 Market Trends
 - 6.1.2 Market Forecast
- 6.2 Fluids
 - 6.2.1 Market Trends
 - 6.2.2 Market Forecast
- 6.3 Gels
 - 6.3.1 Market Trends
 - 6.3.2 Market Forecast
- 6.4 Resins
 - 6.4.1 Market Trends
 - 6.4.2 Market Forecast

7 MARKET BREAKUP BY APPLICATION

7.1 Industrial Processes

7.1.1 Market Trends

7.1.2 Market Forecast

7.2 Construction Materials

7.2.1 Market Trends

7.2.2 Market Forecast

7.3 Home and Personal Care

7.3.1 Market Trends

7.3.2 Market Forecast

7.4 Transportation

7.4.1 Market Trends

7.4.2 Market Forecast

7.5 Energy

7.5.1 Market Trends

7.5.2 Market Forecast

7.6 Healthcare

7.6.1 Market Trends

7.6.2 Market Forecast

7.7 Electronics

7.7.1 Market Trends

7.7.2 Market Forecast

7.8 Others

7.8.1 Market Trends

7.8.2 Market Forecast

8 MARKET BREAKUP BY REGION

8.1 North America

8.1.1 Market Trends

8.1.2 Market Forecast

8.2 Europe

8.2.1 Market Trends

8.2.2 Market Forecast

8.3 Asia Pacific

8.3.1 Market Trends

8.3.2 Market Forecast

8.4 Latin America

- 8.4.1 Market Trends
- 8.4.2 Market Forecast
- 8.5 Middle East and Africa
 - 8.5.1 Market Trends
 - 8.5.2 Market Forecast

9 FEEDSTOCK ANALYSIS

- 9.1 Supply and Demand of Key Feedstock
 - 9.1.1 Global Silicon Metal Market
 - 9.1.1.1 Market Performance
 - 9.1.1.2 Price Trends
 - 9.1.1.3 Market Forecast
 - 9.1.1.4 Market Breakup by Region
 - 9.1.1.5 Market Breakup by End Use
 - 9.1.1.6 Key Suppliers

10 SILICONES MANUFACTURING PROCESS

- 10.1 Product Overview
- 10.2 Raw Material Requirements
- 10.3 Manufacturing Process
- 10.4 Key Success and Risk Factors

11 COMPETITIVE LANDSCAPE

- 11.1 Market Structure
- 11.2 Key Players
- 11.3 Profiles of Key Players
 - 11.3.1 Dow Chemical Company
 - 11.3.1.1 Company Overview
 - 11.3.1.2 Description
 - 11.3.1.3 Product Portfolio
 - 11.3.1.4 Financials
 - 11.3.2 Wacker Chemie AG
 - 11.3.2.1 Company Overview
 - 11.3.2.2 Description
 - 11.3.2.3 Product Portfolio
 - 11.3.2.4 Financials

11.3.2.5 SWOT Analysis

11.3.3 Shin-Etsu Chemical Co., Ltd.

11.3.3.1 Company Overview

11.3.3.2 Description

11.3.3.3 Product Portfolio

11.3.3.4 Financials

11.3.3.5 SWOT Analysis

11.3.4 Momentive Performance Materials Inc.

11.3.4.1 Company Overview

11.3.4.2 Description

11.3.4.3 Product Portfolio

11.3.4.4 Financials

11.3.4.5 SWOT Analysis

11.3.5 Elkem ASA

11.3.5.1 Company Overview

11.3.5.2 Description

11.3.5.3 Product Portfolio

11.3.5.4 Financials

List Of Tables

LIST OF TABLES

Table 1: Silicones: General Properties

Table 2: Global: Silicones Market: Key Industry Highlights, 2023 and 2032

Table 3: Global: Silicones Market Forecast: Breakup by Product Type (in Million Tons), 2024-2032

Table 4: Global: Silicones Market Forecast: Breakup by Application (in Million Tons), 2024-2032

Table 5: Global: Silicones Market Forecast: Breakup by Region (in Million Tons), 2024-2032

Table 6: Silicones: Raw Material Requirements

Table 7: Global: Silicones Market Structure

Table 8: Global: Silicones Market: Key Players

List Of Figures

LIST OF FIGURES

- Figure 1: Global: Silicones Market: Major Drivers and Challenges
- Figure 2: Global: Silicones Market: Sales Volume (in Million Tons), 2018-2023
- Figure 3: Global: Silicones Market: Sales Value (in Billion US\$), 2018-2023
- Figure 4: Global: Silicones Market: Breakup by Product Type (in %), 2023
- Figure 5: Global: Silicones Market: Breakup by Application (in %), 2023
- Figure 6: Global: Silicones Market: Breakup by Region (in %), 2023
- Figure 7: Global: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032
- Figure 8: Global: Silicones Market Forecast: Sales Value (in Billion US\$), 2024-2032
- Figure 9: Global: Silicones Industry: SWOT Analysis
- Figure 10: Global: Silicones Industry: Value Chain Analysis
- Figure 11: Global: Silicones Industry: Porter's Five Forces Analysis
- Figure 12: Global: Silicones Market: Average Prices D5 Price Trends (in US\$/MT)
- Figure 13: Global: Silicones Market: Average Prices Emulsion Price Trends (in US\$/MT)
- Figure 14: Silicones Price Structure Analysis
- Figure 15: Silicones Price Structure Analysis (in %)
- Figure 16: Global: Elastomers Market: Sales Volume (in Million Tons), 2018 & 2023
- Figure 17: Global: Elastomers Market Forecast: Sales Volume (in Million Tons), 2024-2032
- Figure 18: Global: Fluids Market: Sales Volume (in Million Tons), 2018 & 2023
- Figure 19: Global: Fluids Market Forecast: Sales Volume (in Million Tons), 2024-2032
- Figure 20: Global: Gels Market: Sales Volume (in Million Tons), 2018 & 2023
- Figure 21: Global: Gels Market Forecast: Sales Volume (in Million Tons), 2024-2032
- Figure 22: Global: Resins Market: Sales Volume (in Million Tons), 2018 & 2023
- Figure 23: Global: Resins Market Forecast: Sales Volume (in Million Tons), 2024-2032
- Figure 24: Global: Silicones Market (Applications in Industrial Processes): Sales Volume (in Million Tons), 2018 & 2023
- Figure 25: Global: Silicones Market Forecast (Applications in Industrial Processes): Sales Volume (in Million Tons), 2024-2032
- Figure 26: Global: Silicones Market (Applications in Construction Materials): Sales Volume (in Million Tons), 2018 & 2023
- Figure 27: Global: Silicones Market Forecast (Applications in Construction Materials): Sales Volume (in Million Tons), 2024-2032
- Figure 28: Global: Silicones Market (Applications in Home and Personal Care): Sales Volume (in Million Tons), 2018 & 2023
- Figure 29: Global: Silicones Market Forecast (Applications in Home and Personal Care):

Sales Volume (in Million Tons), 2024-2032

Figure 30: Global: Silicones Market (Applications in Transportation): Sales Volume (in Million Tons), 2018 & 2023

Figure 31: Global: Silicones Market Forecast (Applications in Transportation): Sales Volume (in Million Tons), 2024-2032

Figure 32: Global: Silicones Market (Applications in Energy): Sales Volume (in Million Tons), 2018 & 2023

Figure 33: Global: Silicones Market Forecast (Applications in Energy): Sales Volume (in Million Tons), 2024-2032

Figure 34: Global: Silicones Market (Applications in Healthcare): Sales Volume (in Million Tons), 2018 & 2023

Figure 35: Global: Silicones Market Forecast (Applications in Healthcare): Sales Volume (in Million Tons), 2024-2032

Figure 36: Global: Silicones Market (Applications in Electronics): Sales Volume (in Million Tons), 2018 & 2023

Figure 37: Global: Silicones Market Forecast (Applications in Electronics): Sales Volume (in Million Tons), 2024-2032

Figure 38: Global: Silicones Market (Other Applications): Sales Volume (in Million Tons), 2018 & 2023

Figure 39: Global: Silicones Market Forecast (Other Applications): Sales Volume (in Million Tons), 2024-2032

Figure 40: North America: Silicones Market: Sales Volume (in Million Tons), 2018 & 2023

Figure 41: North America: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032

Figure 42: Europe: Silicones Market: Sales Volume (in Million Tons), 2018 & 2023

Figure 43: Europe: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032

Figure 44: Asia Pacific: Silicones Market: Sales Volume (in Million Tons), 2018 & 2023

Figure 45: Asia Pacific: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032

Figure 46: Latin America: Silicones Market: Sales Volume (in Million Tons), 2018 & 2023

Figure 47: Latin America: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032

Figure 48: Middle East and Africa: Silicones Market: Sales Volume (in Million Tons), 2018 & 2023

Figure 49: Middle East and Africa: Silicones Market Forecast: Sales Volume (in Million Tons), 2024-2032

Figure 50: Global: Silicon Metal Market: Consumption Volume (in Million Tons), 2018-2023

Figure 51: Global: Silicon Metal Market: Average Prices (in US\$/Ton), 2018-2023

Figure 52: Global: Silicon Metal Market Forecast: Consumption Volume (in Million Tons), 2024-2032

Figure 53: Global: Silicon Metal Market: Breakup by Region (in %)

Figure 54: Global: Silicon Metal Market: Breakup by End-Use (in %)

Figure 55: Silicones Manufacturing: Process Flow

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