

# Silicates and Silicas

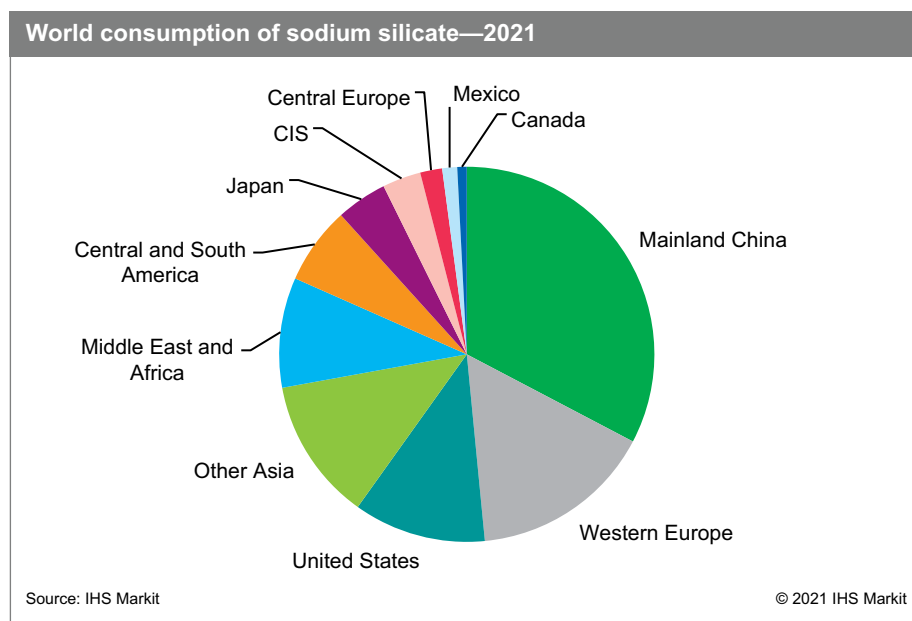
December 2021

## Abstract

This report covers the markets for silicates and silicas. Specifically, it covers the silicates of sodium, calcium, zirconium, potassium, magnesium, and ethyl silicate. It also covers the specialty silicas of precipitated silica, colloidal silica, silica gel, fumed silica, and fused silica.

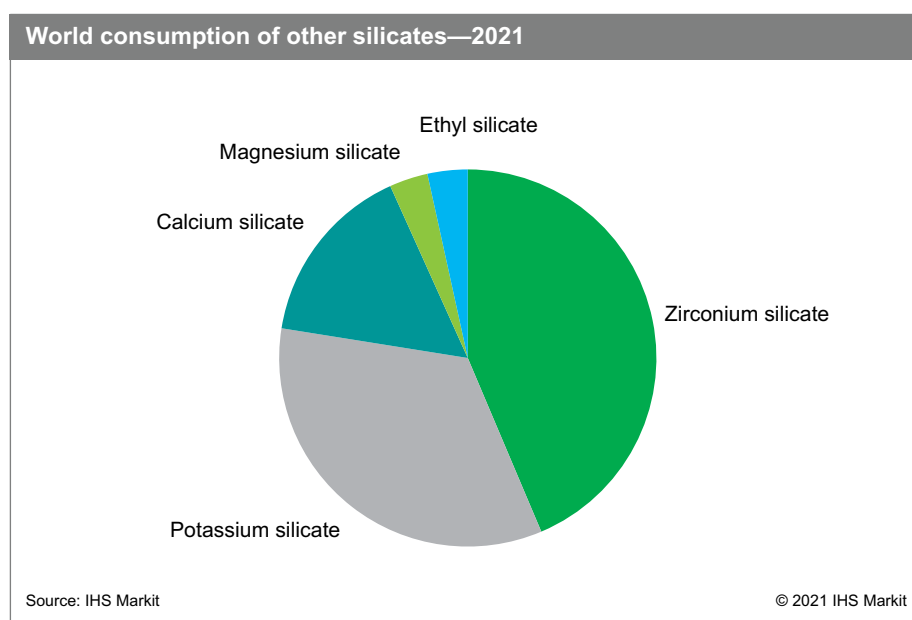
Sodium silicates account for 92% of the global consumption of silicates. Laundry detergents represent the largest single market for sodium silicates in most regions for direct use and indirect use. Another important direct-use market is in pulp and paper, where sodium silicate is used primarily to stabilize hydrogen peroxide in pulp bleaching and for deinking of recycled paper. Precipitated silicas account for about 62% of the global consumption of silicas.

The following charts show world consumption of silicates:



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World consumption of sodium silicate is forecast to grow by 1.8% annually during 2021–26. Mainland China is the leading consumer, accounting for about 33% of total world consumption, followed by Western Europe, the United States, and Other Asia. In addition to a variety of direct uses, sodium silicate is consumed in the downstream production of derivative silicates, silicas, and aluminosilicates, including zeolites. These derivatives account for a substantial percentage of total sodium silicate consumption.

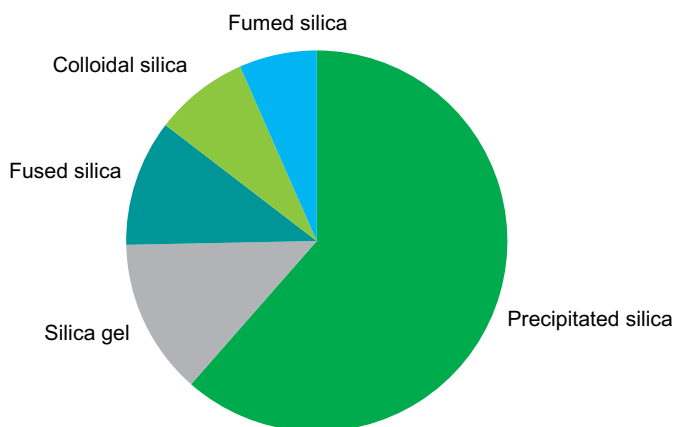
World consumption of potassium silicate is forecast to grow at an average rate of 1.8% annually in 2021–26. Other Asia is the leading consumer, accounting for 26% of total world consumption, followed by mainland China with about 24%, Central and South America with almost 24%, and Western Europe with almost 13%. Potassium silicate is used as a binder in welding rods and in several other markets. It is also used as a detergent builder in both consumer and industrial and institutional (I&I) products, and in various water-based coatings for the construction industry.

World consumption of calcium silicate is forecast to grow by about 1.4% annually during 2021–26. Mainland China, where calcium silicate is used as a compounding additive in plastics and rubbers, is by far the leading consuming region with 35% of world consumption. Calcium silicates are amorphous, water-insoluble powders precipitated from sodium silicate solutions, which function as specialty carriers (especially of oils), flow-control agents, and fillers.

World consumption of zirconium silicate is forecast to grow by 1.8% annually during 2021–26. Mainland China is the leading consuming region, accounting for almost 90% of total world demand. Zirconium silicate is used in the manufacture of refractory materials where resistance to corrosion by alkali materials is necessary. It is also used in ceramics, ceramic glazes, and enamels.

The following chart shows world consumption of specialty silicas:

World consumption of specialty silicas—2021



Source: IHS Markit

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Precipitated silica is the driving force for specialty silicas and demand is driven by the “green revolution” to meet environmental and legislative regulations to improve automotive fuel efficiency. It is forecast to grow by 2.5% annually in 2021–26. Mainland China is the leading consuming region, followed by Other Asia and Western Europe.

Colloidal silica (silica sol), which has a much smaller particle size and a lower tendency to clump, is being adopted in chemical mechanical planarization (CMP) slurries, a reason for its accelerating growth. Its consumption is also growing in pulp and paper mills as part of a retention/drainage aid system with a polymer. Growth is forecast at about 2.3% annually over the next five years. The leading growth market is in the electronics/semiconductor industry as a polishing agent.

Silica gel is a major driver for specialty silica growth, primarily owing to mainland China’s growing demand for adsorbents and desiccants. Mainland China is the largest consumer of silica gel, followed by Other Asia. Use in cosmetics and cat litter has reached maturity in developed markets. Global consumption is forecast to grow by 3% annually in 2021–26.

Fumed silica consumption is projected to grow globally by 2.3% per year during 2021–26. Mainland China will be the fastest growing region during the forecast period, with growth expected to be over 4% in the next five years. Silicone elastomer production is projected to account for almost three-quarters of consumption in 2021.

**For more detailed information, see the table of contents, shown below.**

**IHS Markit’s Chemical Economics Handbook – *Silicates and Silicas*** is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including



Global summary;  
regional coverage



Producers with  
annual capacities  
and plant sites



Production figures  
and trends



Consumption and  
forecasts by end use  
application



Manufacturing  
processes and  
environmental issues



Trade – imports  
and exports

## Key benefits

**IHS Markit's Chemical Economics Handbook – *Silicates and Silicas*** has been compiled using primary interviews with key suppliers and organizations, and leading representatives from the industry in combination with IHS Markit's unparalleled access to upstream and downstream market intelligence and expert insights into industry dynamics, trade, and economics.

This report can help you

- Identify trends and driving forces influencing chemical markets
- Forecast and plan for future demand
- Understand the impact of competing materials
- Identify and evaluate potential customers and competitors
- Evaluate producers
- Track changing prices and trade movements
- Analyze the impact of feedstocks, regulations, and other factors on chemical profitability

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