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# Silicon: United States

March 2022



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# About This Report

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## Scope

This report forecasts to 2022 and 2026 US silicon demand and production in metric tons of silicon content. Total demand is segmented by product in terms of:

- silicon metal
- ferrosilicon
- other silicon alloys such as magnesium-ferrosilicon, silicon carbide, and silvery pig iron

Total demand is also segmented by application as follows:

- steel
- cast irons
- aluminum and other alloys
- silicones and other applications such as silanes, fumed silica, and miscellaneous chemicals

To illustrate historical trends, total demand, total production, and the various segments are provided in annual series from 2011 to 2021.

Semiconductor and solar grades of silicon are excluded from the scope of this report. Further, silicon carbide for abrasive or refractory uses is omitted.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading companies, are covered in this report. A full outline of report items by page is available in the Table of Contents.

## Sources

*Silicon: United States* (FF65024) represents the synthesis and analysis of data from various secondary, macroeconomic, and demographic sources, such as:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- intergovernmental and non-governmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

## Industry Codes

**Table 8 | NAICS & SIC Codes Related to Silicon**

| NAICS/SCIAN 2017<br>North American Industry Classification System |   | SIC<br>Standard Industrial Classification |  |
|---|---|---|--|
| 327992  | Ground or Treated Mineral and Earth Manufacturing | 3295                                      | Minerals and Earths, Ground or Otherwise Treated |
| 331110  | Iron and Steel Mills and Ferroalloy Manufacturing | 3313                                      | Electrometallurgical Products, Except Steel      |

Source: US Census Bureau

## Freedonia Methodology

The Freedonia Group, a subsidiary of MarketResearch.com, has been in business for more than 30 years and in that time has developed a comprehensive approach to data analysis that takes into account the variety of industries covered and the evolving needs of our customers.

Every industry presents different challenges in market sizing and forecasting, and this requires flexibility in methodology and approach. Freedonia methodology integrates a variety of quantitative and qualitative techniques to present the best overall picture of a market's current position as well as its future outlook: When published data are available, we make sure they are correct and representative of reality. We understand that published data often have flaws either in scope or quality, and adjustments are made accordingly. Where no data are available, we use various methodologies to develop market sizing (both top-down and bottom-up) and then triangulate those results to come up with the most accurate data series possible. Regardless of approach, we also talk to industry participants to verify both historical perspective and future growth opportunities.

Methods used in the preparation of Freedonia market research include, but are not limited to, the following activities: comprehensive data mining and evaluation, primary research, consensus forecasting and analysis, ratio analysis using key indicators, regression analysis, end use growth indices and intensity factors, purchase power parity adjustments for global data, consumer and end user surveys, market share and corporate sales analysis, product lifespan analysis, product or market life cycle analysis, graphical data modeling, long-term historical trend analysis, bottom-up and top-down demand modeling, and comparative market size ranking.

Freedonia quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or  $r^2$ . The most stable data series relative to the trend carries an  $r^2$  value of

1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

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## Resources

### The Freedonia Group

#### Freedonia Industry Studies

*Fencing*

*Global Silicones*

*Hand Tools*

*Pipe Products & Markets*

#### Freedonia Focus Reports

*Aluminum: United States*

*Computers & Peripherals: United States*

*Construction: United States*

*Metal Services: United States*

*Mining & Quarrying: United States*

*Motor Vehicles: United States*

*Photovoltaic Solar Power: United States*

*Rubber Processing Chemicals: United States*

*Semiconductors: United States*

*Silicones: United States*

*Steel Mill Products: United States*

#### Freedonia Custom Research

### Trade Publications

*American Metal Market*

*Chemical & Engineering News*

*Chemical Week*

*ICIS Chemical Business*

*Industrial Minerals*

*Modern Metals*

*Plastics News*

*Rubber News*

### Agencies & Associations

The Aluminum Association

American Chemistry Council

American Iron and Steel Institute

Association for Iron & Steel Technology

Occupational Safety & Health Administration  
SPI: The Plastics Industry Trade Association  
Steel Manufacturers Association  
United States Census Bureau  
United States Geological Survey  
United State International Trade Commission