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# Titanium:

## United States

March 2018



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# About This Report

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## Scope & Method

This report forecasts to 2022 US demand for titanium mineral concentrates, titanium dioxide (TiO<sub>2</sub>) pigments, and titanium metal in metric tons and nominal US dollars at the manufacturer level. Total demand for titanium mineral concentrates in metric tons represents TiO<sub>2</sub> content and is segmented by application in terms of:

- TiO<sub>2</sub> pigments
- other applications such as metal sponge

Demand for TiO<sub>2</sub> pigment in metric tons is segmented by application as follows:

- paint
- plastic
- paper
- other applications such as ceramics, food coloring, and ink

Paint refers to both architectural paint and industrial and manufacturing coatings.

Demand for titanium metal in metric tons – including both metal sponge and scrap – is segmented by application as follows:

- aerospace
- industrial and other applications, such as automotive, chemicals, and construction

To illustrate historical trends, total demand for titanium mineral concentrates, TiO<sub>2</sub> pigment, and titanium metal in volume and value terms, and the various segments in volume terms are provided in annual series from 2007 to 2017.

This report 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.

## About This Report

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

## Sources

*Titanium: United States* (FF65014) is based represents the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources including:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- national, regional, and international 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 10 | Industry Codes Related to Titanium

NAICS/SCIAN 2007		SIC	
North American Industry Classification System		Standard Industrial Classification	
212299	All Other Metal Ore Mining	1099	Miscellaneous Metal Ores, NEC
325131	Inorganic Dye and Pigment Manufacturing	2816	Inorganic Pigments
331419	Primary Smelting and Refining of Nonferrous Metal (except Copper and Aluminum)	3339	Primary Smelting and Refining of Nonferrous Metals, Except Copper and Aluminum
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	3356	Rolling, Drawing, and Extruding of Nonferrous Metals, Except Copper and Aluminum

Source: US Census Bureau

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## Resources

### The Freedonia Group

#### Freedonia Industry Studies

*Liquid-Applied Roof Coatings in the US*, November 2017

*Global 3D Printing Markets*, October 2017

*Medical Implants in the US*, November 2016

*World Kaolin*, September 2016

*World Abrasives*, June 2016

*Industrial Fasteners*, May 2016

#### Freedonia Focus Reports

*Industrial Castings: United States*

*Mining & Quarrying: United States*

*Paper & Paperboard: United States*

*Pigments: United States*

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### Trade Publications

*American Metal Market*

*Aviation Week*

*Chemical Week*

*Coatings World*

*Defense Daily Network*

*ICIS Chemical Business*

*Metal Center News*

*PCI Magazine*

### Agencies & Associations

Aerospace Industries Association

Defense Advanced Research Projects Agency

The Institute of Materials, Minerals and Mining

International Titanium Association

US Department of Commerce

Bureau of Economic Analysis

US Census Bureau

US Geological Survey

US International Trade Commission