TITANIUM AND TITANIUM DIOXIDE[1]

(Data in metric tons unless otherwise specified)

Domestic Production and Use: The United States did not produce titanium sponge metal in 2025. The last domestic sponge plant closed in 2024. The facility was in Utah and had an estimated capacity of 500 tons per year of sponge that was further refined for use in electronics. A second sponge facility in Henderson, NV, with an estimated capacity of 12,600 tons per year has been idled since 2020 owing to market conditions. A third facility in Rowley, UT, with an estimated capacity of 10,900 tons per year has remained idle since 2016.

Although detailed 2025 consumption data were withheld to avoid disclosing proprietary data, the majority of titanium metal was used in aerospace applications, and the remainder was used in armor, chemical processing, marine hardware, medical implants, power generation, and other applications. The customs value of imported sponge was about $460 million, a 3% increase compared with $447 million in 2024.

In 2025, titanium dioxide (TiO_2) pigment production, by four companies operating five facilities in four States, was valued at an estimated $3 billion. The leading uses of TiO_2 pigment were, in descending order, paints (including lacquers and varnishes), plastics, and paper. Other uses of TiO_2 pigment included catalysts, ceramics, coated fabrics and textiles, floor coverings, printing ink, and roofing granules.

Salient Statistics—United States:	**2021**	**2022**	**2023**	**2024**	**2025[e]**
Titanium sponge metal:					
Production	W	W	W	W	—
Imports for consumption[e]	16,000	30,900	40,300	39,800	44,000
Exports	117	105	247	70	63
Consumption, apparent[2]	[3]15,900	[3]30,800	[3]40,100	[3]39,800	44,000
Consumption, reported	W	W	W	W	W
Price, dollars per kilogram[4]	11.10	11.10	12.30	13.30	12
Stocks, industry, yearend[e]	W	W	W	W	W
Employment, number[e]	20	20	20	10	—
Net import reliance[5] as a percentage of apparent consumption	>95	>95	>95	>95	100
TiO_2 pigment:					
Production	1,150,000	1,150,000	910,000	940,000	1,000,000
Imports for consumption	251,000	265,000	228,000	236,000	230,000
Exports	494,000	378,000	288,000	358,000	330,000
Consumption, apparent[2]	907,000	1,040,000	850,000	818,000	900,000
Price, dollars per metric ton[4]	2,920	3,450	3,240	3,170	3,200
Employment, number[e]	3,200	3,200	3,200	3,200	3,000
Net import reliance[5] as a percentage of apparent consumption	E	E	E	E	E

Recycling: Owing to limited responses from voluntary surveys, consumption data for titanium scrap metal for the titanium metal industry were withheld. Consumption data for titanium scrap for the steel, superalloy, and other industries were not available.

Import Sources (2021–24): Sponge metal: Japan, 77%; Saudi Arabia, 13%; Kazakhstan, 8%; and other, 2%. TiO_2 pigment: Canada, 45%; China, 11%; Germany, 7%; Mexico, 7%; and other, 30%.

Tariff: Item	**Number**	**Normal Trade Relations 12–31–25**
Titanium oxides (unfinished TiO_2 pigments)	2823.00.0000	5.5% ad valorem.
TiO_2 pigments, 80% or more TiO_2	3206.11.0000	6% ad valorem.
TiO_2 pigments, other	3206.19.0000	6% ad valorem.
Ferrotitanium and ferrosilicon titanium	7202.91.0000	3.7% ad valorem.
Unwrought titanium metal	8108.20.0000	15% ad valorem.
Titanium waste and scrap metal	8108.30.0000	Free.
Other titanium metal articles	8108.90.3000	5.5% ad valorem.
Wrought titanium metal	8108.90.6000	15% ad valorem.

Depletion Allowance: Not applicable.

Prepared by **Samantha M. Ewing [(703) 648–6183, sewing@usgs.gov]**

Government Stockpile:[6]

Material	FY 2025 Potential acquisitions	FY 2025 Potential disposals	FY 2026 Potential acquisitions	FY 2026 Potential disposals
Titanium	15,000	—	NA	NA
Titanium alloys	—	136	NA	NA

Events, Trends, and Issues: U.S. producers of titanium ingot and downstream products were reliant on imports of titanium sponge and scrap. U.S. imports of titanium sponge were an estimated 44,000 tons in 2025, exceeding the historical high of 40,300 tons imported in 2023. Japan (73%), Kazakhstan (13%), and Saudi Arabia (13%) were the leading import sources for titanium sponge in 2025 through July.

With funding support from the U.S. Government, a company in Virginia began commercial production of titanium powder from titanium scrap metal in late 2024. In 2025, the company was scaling up production capacity and aimed to achieve 1,400 tons per year in 2027 with potential for future expansion.

U.S. imports of titanium scrap were estimated to be 32,000 tons in 2025. The United Kingdom (19%), France and Japan (10% each), and Germany, the Republic of Korea, and Singapore (9% each), were the leading import sources for titanium waste and scrap in 2025 through July. Through July 2025, the average duty-paid unit value of scrap imports was about $7.70 per kilogram compared with the annual average price of $8.50 per kilogram in 2024.

Domestic production of TiO_2 pigment in 2025 was an estimated 1,000,000 tons. Although heavily reliant on imports of titanium mineral concentrates, the United States was a net exporter of TiO_2 pigments.

World Sponge Metal Production and Sponge and Pigment Capacity: Significant revisions were made to the 2024 sponge production for Kazakhstan and Russia based on company, Government, and news reports.

	Sponge production[e] 2024	Sponge production[e] 2025	Capacity, 2025[e, 7] Sponge	Capacity, 2025[e, 7] Pigment
United States	W	—	—	1,360,000
Australia	—	—	—	260,000
Canada	—	—	—	108,000
China	256,000	260,000	320,000	6,000,000
Germany	—	—	—	339,000
India	300	300	500	91,000
Japan	57,000	53,000	65,200	322,000
Kazakhstan	19,000	16,000	26,000	—
Mexico	—	—	—	350,000
Russia	33,000	25,000	46,500	55,000
Saudi Arabia	14,000	12,000	15,600	200,000
Ukraine	—	—	—	122,000
United Kingdom	—	—	—	165,000
Other countries	—	—	—	540,000
World total (rounded)	[8]380,000	370,000	470,000	9,900,000

World Resources:[9] Resources of titanium minerals are discussed in the Titanium Mineral Concentrates chapter.

Substitutes: Few materials possess titanium metal's strength-to-weight ratio and corrosion resistance. In high-strength applications, titanium competes with aluminum, composites, intermetallics, steel, and superalloys. Aluminum, nickel, specialty steels, and zirconium alloys may be substituted for titanium for applications that require corrosion resistance. Ground calcium carbonate, precipitated calcium carbonate, kaolin, and talc compete with TiO_2 as a white pigment.

[e]Estimated. E Net exporter. NA Not available. W Withheld to avoid disclosing company proprietary data. — Zero.

[1]See also the Titanium Mineral Concentrates chapter.

[2]Defined as production + imports – exports.

[3]Excludes domestic production of sponge in Utah.

[4]Landed duty-paid value based on U.S. imports for consumption.

[5]Defined as imports – exports.

[6]See Appendix B for definitions. For fiscal year 2026, the Annual Materials Plan was not released.

[7]Yearend operating capacity.

[8]Excludes U.S. production.

[9]See Appendix C for resource and reserve definitions and information concerning data sources.