TITANIUM MINERAL CONCENTRATES[1]

[Data in thousand metric tons, titanium dioxide (TiO_2) content, unless otherwise specified]

Domestic Production and Use: In 2025, one company recovered ilmenite and rutile concentrates from its surface-mining operations near Nahunta, GA, and Starke, FL. A second company produced a mixed heavy-mineral concentrate from a mining operation in California. A third company began commercial production of ilmenite at a mine in Stony Creek, VA. Abrasive sands, monazite, and zircon were coproducts of domestic titanium minerals mining operations. Based on trade data through July, the estimated value of titanium mineral and synthetic concentrates imported into the United States in 2025 was $720 million. More than 95% of titanium mineral concentrates were consumed by domestic TiO_2 pigment producers. The remainder was used in welding-rod coatings and for manufacturing carbides, chemicals, and titanium metal.

Salient Statistics—United States:	2021	2022	2023	2024	2025[e]
Production[2]	100	200	100	100	100
Imports for consumption	969	952	638	658	730
Exports, all forms[e]	20	110	40	5	10
Consumption, apparent[2, 3]	1,000	1,000	700	800	900
Price, dollars per metric ton:					
Rutile, bulk, minimum 95% TiO_2, free on board (f.o.b.) Australia[4]	1,300	1,470	1,460	1,300	1,140
Ilmenite and leucoxene, bulk, f.o.b. Australia[5]	595	530	389	497	400
Ilmenite, average unit value of imports[6]	240	285	365	330	300
Slag, 80%–95% TiO_2, average unit value of imports[6]	774	867	1,050	970	880
Employment, mine and mill, number	340	420	440	460	490
Net import reliance[7] as a percentage of apparent consumption	90	81	86	87	88

Recycling: None.

Import Sources (2021–24): South Africa, 26%; Canada, 16%; Madagascar, 16%; Mozambique, 13%; and other, 29%.

Tariff: Item	Number	Normal Trade Relations 12–31–25
Synthetic rutile	2614.00.3000	Free.
Ilmenite and ilmenite sand	2614.00.6020	Free.
Rutile concentrate	2614.00.6040	Free.
Titanium slag	2620.99.5000	Free.

Depletion Allowance: Ilmenite and rutile, 22% (domestic), 14% (foreign).

Government Stockpile: None.

Events, Trends, and Issues: Consumption of titanium mineral concentrates is closely tied to production of TiO_2 pigments that are primarily used in paint, paper, and plastics. Demand for these primary uses is related to changes in the gross domestic product. Although inventory changes were not included in the apparent consumption calculation, domestic apparent consumption of titanium mineral concentrates in 2025 was estimated to have increased 10% from that in 2024 owing mostly to an estimated 12% increase in imports.

As of July 2025, United States imports of titanium slag were predominantly from South Africa (65%), Norway (24%), and Canada (10%). Mozambique (44%), Madagascar (35%), Ukraine (11%), and Senegal (9%) were leading sources of ilmenite, and Australia (51%), South Africa (20%), Sierra Leone (18%), and Canada (11%) were the leading sources of rutile. Imports of synthetic rutile were predominantly from Sierra Leone (78%) and China (21%).

In 2025, China continued to be the leading producer and consumer of titanium mineral concentrates, accounting for approximately one-third of global production of ilmenite. Mozambique and South Africa were the second- and third-ranked producers of titanium mineral concentrates. China's imports of titanium mineral concentrates for the year through September were 3.8 million tons in gross weight, a 5% increase compared with those in the same period in 2024. Mozambique (47%), Australia (17%), and Norway (7%) were the leading sources of titanium mineral concentrates to China.

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TITANIUM MINERAL CONCENTRATES

World Mine Production and Reserves: Significant revisions were made to 2024 production for Australia, Madagascar, Sierra Leone, Ukraine, the United States, and "Other countries" based on company reports, Government reports, news, or trade data. Reserves for Australia, Canada, Kenya, South Africa, Ukraine, and "Other countries" were revised based on company and Government reports.

	Mine production[e]		Reserves[8]
	2024	2025	
Ilmenite:			
United States[2, 9]	100	100	2,000
Australia	600	780	[10]170,000
Canada[11]	360	360	50,000
China	3,040	3,200	110,000
India	230	240	15,000
Madagascar[11]	300	300	30,000
Mozambique	1,930	1,900	NA
Norway	432	390	37,000
Senegal	345	370	NA
South Africa[11]	1,260	1,300	28,000
Ukraine	286	200	5,900
Other countries	332	230	46,000
World total (ilmenite, rounded)[9]	9,210	9,400	>490,000
Rutile:			
United States	([9])	([9])	([9])
Australia	200	200	[10]35,000
India	12	13	670
Kenya	41	—	—
Mozambique	9	10	720
Sierra Leone	80	110	2,900
South Africa	102	100	6,200
Ukraine	9	10	2,500
Other countries	10	9	>540
World total (rutile, rounded)[9]	460	450	>49,000
World total (ilmenite and rutile, rounded)	9,680	9,800	>540,000

World Resources:[8] Ilmenite accounts for about 90% of the world's consumption of titanium minerals. World resources of anatase, ilmenite, and rutile total more than 2 billion tons.

Substitutes: Ilmenite, leucoxene, rutile, slag, and synthetic rutile compete as feedstock sources for producing TiO_2 pigment, titanium metal, and welding-rod coatings.

[e]Estimated. NA Not available. — Zero.

[1]See also the Titanium and Titanium Dioxide chapter.

[2]Rounded to the nearest 100,000 tons to avoid disclosing company proprietary data.

[3]Defined as production + imports – exports.

[4]Source: Fastmarkets IM; annual average.

[5]Source: Zen Innovations AG, Global Trade Tracker.

[6]Landed duty-paid unit value based on U.S. imports for consumption. Source: U.S. Census Bureau.

[7]Defined as imports – exports.

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

[9]United States rutile production and reserves data are included with ilmenite.

[10]For Australia, Joint Ore Reserves Committee-compliant or equivalent reserves were estimated to be 45 million tons for ilmenite and 12 million tons for rutile, respectively, TiO_2 content.

[11]Mine production of titaniferous magnetite is primarily used to produce titaniferous slag.