

Mineral Industry Surveys

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TITANIUM IN THE FIRST QUARTER 2023

In the first quarter of 2023, U.S. imports of titanium mineral concentrates, excluding titaniferous iron ore, totaled 236,000 metric tons (t) (gross weight) and included ilmenite (133,000 t), rutile (71,600 t), and titanium slag (32,000 t). Imports of slag and rutile decreased by 61% and 14%, respectively, compared with the prior period. Meanwhile, imports of ilmenite increased by 3% (table 4). Exports of all forms of titanium mineral concentrates in the first quarter of 2023 were 56,600 t, an 11% decrease compared with the prior period (table 2).

Imports of all forms of titanium pigment in the first quarter of 2023 were 111,000 t compared with 128,000 t in the prior quarter (table 5). Exports of all forms of titanium pigment were 65,900 t compared with 64,700 t in the prior quarter (table 2).

In the first quarter of 2023, total imports of titanium metal, excluding ferrotitanium, were 19,700 t and were primarily in the form of sponge (53%) and waste and scrap (31%). Imports of sponge increased by 3% while imports of scrap decreased by 9% compared with those in the prior quarter. Imports of ingot, powder, and other unwrought products increased by about seven-fold (table 3). Exports of all forms of titanium metal in the first quarter of 2023 were 9,440 t, a 21% increase compared with those in the prior quarter (table 1).

Industry participation is key to the publication of aggregated totals of domestic titanium statistics. In the first quarter of 2023, domestic production, consumption, shipments, and stocks of sponge, ingot, slab, and mill products were withheld to avoid disclosing company proprietary data owing to limited responses (table 1).

The U.S. Geological Survey's (USGS) National Minerals Information Center canvasses the nonfuel mining and mineral processing industry in the United States for data on mineral production, consumption, recycling, stocks, and shipments.

Reporting is voluntary, and the USGS greatly appreciates the data provided by companies participating in the surveys throughout the United States. The data that companies provide are the foundation upon which the USGS builds its minerals information publications. Unless authorization is granted for release, the data furnished are aggregated to avoid disclosing company proprietary data and are treated as confidential by the Department of the Interior.

Companies may report on a monthly, quarterly, semiannual, and (or) annual basis, depending on the frequency of the surveys. Canvass forms are mailed shortly after the end of the reporting period and are requested to be returned within about 15 to 30 days. In addition to reporting by paper canvass forms, companies can electronically submit data to contribute to this valuable effort. Companies already registered with the USGS can sign up to report electronically by selecting the "Sign up" link at <https://mids.er.usgs.gov>. To notify the USGS of a new operation, or for further information on registering for electronic submissions, visit <https://mids.er.usgs.gov>. The USGS titanium metal quarterly survey has a canvas code of G37. For more information on how to participate in the titanium surveys, please contact Joseph Gambogi using the contact information listed above.

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/national-minerals-information-center/minerals-information-publication-list-services>.

TABLE 1
COMPONENTS OF U.S. TITANIUM METAL SUPPLY AND DEMAND¹

(Metric tons)

	2022					2023 1st quarter
	1st quarter	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	
Production:						
Sponge	W	W	W	W	W	W
Ingot	W	W	W	W	W	W
Mill products	W	W	W	W	W	W
Exports:						
Waste and scrap	1,970	1,940	2,540	2,030	8,460	2,690
Sponge	79	5	9	12	105	33
Ingot	792	1,370	732	749	3,640	1,540
Other unwrought	398	393	258	444	1,490	500
Bar, rod, profiles, wire	1,350	1,530	1,860	1,780	6,530	2,100
Bloom, sheet bar, slab	468	436	488	397	1,790	438
Other wrought	1,740	2,210	2,170	2,380	8,510	2,130
Total	6,810	7,890	8,050	7,800	30,500	9,440
Imports:						
Waste and scrap	3,400 ^r	4,340 ^r	4,880	6,630	19,300	6,020
Sponge ²	6,620 ^r	6,490 ^r	7,670	10,100	30,900 ^r	10,400
Ingot	482 ^r	45 ^r	94 ^r	113	733 ^r	740
Powder	28	51	75	41	194	69
Other unwrought	358 ^r	186	202 ^r	101	847 ^r	900
Wrought	3,460	1,380	1,180	993	7,010	1,340
Castings	14	5	11 ^r	7	38 ^r	7
Other	253 ^r	282 ^r	160	165 ^r	861 ^r	213
Total	14,600 ^r	12,800 ^r	14,300 ^r	18,200	59,800 ^r	19,700
Stocks, end of period:						
Sponge, industry	W	W	W	W	W	W
Scrap	W	W	W	W	W	W
Ingot	W	W	W	W	W	W
Consumption:						
Sponge	W	W	W	W	W	W
Scrap	W	W	W	W	W	W
Ingot	W	W	W	W	W	W
Shipments:						
Ingot and slab (producer net shipments)	W	W	W	W	W	W
Mill products (net shipments):						
Forging and extrusion billet	W	W	W	W	W	W
Other	W	W	W	W	W	W
Total	W	W	W	W	W	W
Castings	W	W	W	W	W	W
Receipts, scrap:						
Home	W	W	W	W	W	W
Purchased	W	W	W	W	W	W
Total	W	W	W	W	W	W

^rRevised. W Withheld to avoid disclosing company proprietary data.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Estimated by the U.S. Geological Survey.

TABLE 2
U.S. EXPORTS OF TITANIUM PRODUCTS¹

(Metric tons)

	HTS ² Code	2022				1st quarter–	2023
		1st quarter	2d quarter	3d quarter	4th quarter	4th quarter	1st quarter
Metal:							
Waste and scrap	8108.30.0000	1,970	1,940	2,540	2,000	8,460	2,690
Unwrought:							
Sponge	8108.20.0010	79	5	9	12	105	33
Ingot	8108.20.0030	792	1,370	732	749	3,640	1,540
Other	8108.20.0090	398	393	258	444	1,490	500
Wrought:							
Bar, rod, profiles, wire	8108.90.6031	1,350	1,530	1,860	1,780	6,530	2,100
Bloom, sheet bar, slab	8108.90.6020	468	436	488	397	1,790	438
Other	8108.90.8000	1,740	2,210	2,170	2,380	8,510	2,130
Ferrotitanium and ferrosilicon titanium	7202.91.0000	313	397	466	496	1,670	316
Ores and concentrates	2614.00.0000	65,600	60,900	75,100	63,300	265,000	56,600
Pigment:							
80% or more titanium dioxide	3206.11.0000	96,700	102,000	94,300	60,200	354,000	59,900
Other titanium dioxide	3206.19.0000	3,120	3,680	3,230	2,470	12,500	3,040
Unfinished titanium dioxide ³	2823.00.0000	3,520	3,280	2,480	2,050	11,300	2,950

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Harmonized Tariff Schedule of the United States.

³Unmixed and not surface treated.

Source: U.S. Census Bureau.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL¹

(Metric tons)

	HTS ² Code	2022					2023
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter
Waste and scrap:	8108.30.0000						
Canada		451	354	491	515	1,810	495
China		151	158	264 ^r	157	731 ^r	218
France		442 ^r	384	557	659	2,040 ^r	867
Germany		599 ^r	689 ^r	498	662	2,450 ^r	661
Italy		186	366	342	460	1,350	349
Japan		216	491	492	1,140	2,340	831
Korea, Republic of		367	313	212	276	1,170	167
Mexico		165	313	531	642	1,650	407
Poland		45	140	180	220	585	203
Singapore		52	146	156	165	519	210
United Kingdom		469 ^r	686	686	998	2,840 ^r	1,120
Other		261	299	469	741 ^r	1,770	486
Total		3,400 ^r	4,340 ^r	4,880	6,630	19,300	6,020
Unwrought:							
Sponge:	8108.20.0010						
China		(3) ^r	-- ^r	-- ^r	6	6 ^r	56
Japan		6,270	5,710 ^r	5,120	8,120	25,200 ^r	8,330
Kazakhstan ^e		300	422 ^r	1,240	1,160 ^r	3,120 ^r	1,070
Russia		32	37	35	--	104	--
Saudi Arabia		18	234	1,260	792	2,300	936
Ukraine		--	9	--	--	9	--
Other		(3)	71 ^r	17 ^r	17 ^r	106 ^r	21
Total		6,620 ^r	6,490 ^r	7,670	10,100	30,900 ^r	10,400
Ingot:	8108.20.0030						
Kazakhstan		65	14 ^r	94 ^r	107	281 ^r	605
Russia		388	30	--	5	423	135
Other		29 ^r	--	--	--	29 ^r	(3)
Total		482 ^r	45 ^r	94 ^r	113	733 ^r	740
Powder	8108.20.0015	28	51	75	41	194	69
Other	8108.20.0095	358	186	202	101	847	900
Wrought:							
Bar, rod, profiles, wire	8108.90.6031	873	522	494 ^r	333	2,220	806
Bloom, sheet bar, slab	8108.90.6020	1,740	334	35	49	2,160	64
Plate, sheet, strip, foil	8108.90.6045	659	361	296 ^r	294	1,610 ^r	268
Tube and pipe	8108.90.6060	61	61	179	147	449	58
Other	8108.90.6075	128	100	177	169	574	149
Total		3,460	1,380	1,180	993	7,010	1,340
Other articles of titanium:							
Castings	8108.90.3030	14	5	11 ^r	7	38 ^r	7
Other	8108.90.3060	253 ^r	282 ^r	160	165 ^r	861 ^r	213
Ferrotitanium and ferrosilicon titanium	7202.91.0000	534	1,140	1,230	731	3,630	490

^eEstimated. ^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Harmonized Tariff Schedule of the United States.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM CONCENTRATES¹

(Metric tons)

	HTS ² Code	2022				1st quarter–	2023
		1st quarter	2d quarter	3d quarter	4th quarter	4th quarter	1st quarter
Ilmenite:	2614.00.6020						
Madagascar		93,000	35,000	59,400	90,000	277,000	15,000
Mozambique		--	69,900	50,100	22,600	143,000	65,000
Senegal		45,000	9,000	29,000	8,000	91,100	20,000
Ukraine		10,200	--	--	7,700	17,900	20,000
Other		--	40	40	--	80	12,600
Total		148,000	114,000	139,000	128,000	529,000	133,000
Titanium slag:	2620.99.5000						
Canada		6,130	319	47,000	31,600	85,100	17,000
France		--	--	15,000	--	15,000	--
Norway		--	17,500	15,000	15,000	47,500	--
South Africa		48,000	46,000	58,900	35,100	188,000	15,000
Other		--	--	--	195	195	--
Total		54,100	63,800	136,000	82,000	336,000	32,000
Rutile:	2614.00.6040						
Australia		12,700	35,300	19,100	23,700	90,800	14,500
Canada		2,020	--	5,360	10,000	17,400	--
Kenya		5,000	3,060	371	20,300	28,700	12,000
South Africa		47,400	62,300	28,900	29,300	168,000	44,700
Spain		(3)	1	13,800	(3)	13,800	1
Ukraine		13,500	150	20,300	57	34,000	308
Other		45	352	4	78	479	1
Total		80,600	101,000	87,900	83,500	353,000	71,600
Synthetic rutile:	2614.00.3000						
Australia		205	100	--	--	305	--
Sierra Leone		--	1	--	84	85	--
Other		--	--	17	--	17	--
Total		205	101	17	84	408	--
Titaniferous iron ore, Canada ⁴	2614.00.6020	22	--	--	24	46	7,510

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Harmonized Tariff Schedule of the United States.

³Less than ½ unit.

⁴Includes materials consumed for purposes other than the production of titanium commodities, principally heavy aggregate and steel-furnace flux. Titaniferous iron ore from Canada is classified as ilmenite under the Harmonized Tariff Schedule of the United States and is not included in the previous ilmenite totals.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM PIGMENT¹

(Metric tons)

	HTS ² Code	2022				1st quarter–	2023
		1st quarter	2d quarter	3d quarter	4th quarter	4th quarter	1st quarter
80% or more titanium dioxide:	3206.11.0000						
Australia		2,560	3,060	3,230	5,760	14,600	390
Belgium		1,710	1,540	2,920	3,700	9,880	1,100
Canada		24,500	29,800	25,500	18,800	98,600	22,100
China		4,170	5,560	4,930	2,700	17,400	4,680
Czechia		1,180	1,770	1,290	1,970	6,210	1,020
Germany		3,470	3,440	3,020	4,410	14,300	1,580
Italy		1,420	1,110	1,940	1,400	5,870	556
Japan		1,180	1,470	1,520	1,330	5,510	782
Mexico		879	2,790	6,240	3,420	13,300	9,920
Norway		1,260	1,080	1,500	2,600	6,430	942
Spain		2,240	1,820	3,000	5,870	12,900	2,410
United Kingdom		751	676	2,780	3,190	7,400	474
Other		2,210 ^r	2,510 ^r	2,930 ^r	1,540 ^r	9,190 ^r	1,720
Total		47,500	56,600	60,800	56,700	222,000	47,700
Other titanium dioxide:	3206.19.0000						
Canada		3,120	3,190	3,610	3,180	13,100	3,550
China		297	160	255	136	847	237
France		2	8	11	182	203	381
India		128	182	242	135	687	342
Italy		255	468	459	86	1,270	217
Mexico		191	292	220	204	907	152
Other		331 ^r	603 ^r	475 ^r	349 ^r	1,760 ^r	419
Total		4,320	4,900	5,280	4,270	18,800	5,300
Unfinished titanium dioxide: ³	2823.00.0000						
Canada		304	945	432	333	2,010	203
China		1,530	2,870	2,190	1,640	8,230	2,530
France		1,010	1,110	1,590	1,970	5,680	1,190
Germany		641	740	777	819	2,980	161
India		545	1,110	745	417	2,820	234
Japan		68	118	172	232	591	87
Korea, Republic of		280	198	292	226	996	238
Other		276	369	251	99	995	171
Total		4,660	7,460	6,440	5,740	24,300	4,820
Grand total		56,500	69,000	72,500	66,700	265,000	57,800

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Harmonized Tariff Schedule of the United States.

³Unmixed and not surface treated.

Source: U.S. Census Bureau.

TABLE 6
AVERAGE PRICES FOR TITANIUM MATERIALS

		2022				2023
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter
Concentrate:						
Ilmenite, CIF, China ¹	dollars per metric ton	380 º	410 º	431 º	415 º	408
Titanium slag, import ²						
Canada	do.	946 º	2,770	1,030	1,060	1,160
Norway	do.	NA	867 º	1,060	1,040	NA
South Africa	do.	756 º	734 º	698 º	858 º	793
Rutile, natural: ¹						
Bagged, f.o.b. Australian ports	do.	1,720 º	2,170 º	2,250 º	2,200 º	2,200
Bulk, f.o.b. Australian ports	do.	1,450 º	1,460 º	1,480 º	1,490 º	1,500
Metal:						
Sponge metal, Japan, import ²	dollars per kilogram	10.70 º	10.40 º	11.40 º	11.40	11.30
Titanium mill products	producer price index ³	178	181 º	196 º	200 º	206
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	1.98 º	3.25 º	3.25 º	3.18 º	2.25
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	4.70 º	7.50 º	5.43 º	3.94 º	3.10
Pigment:						
Titanium dioxide pigment, import ²	dollars per metric ton	3,320 º	3,380 º	3,520 º	3,560	3,320

do. Ditto. ¹Revised. NA Not available.

¹Source: Fastmarkets IM.

²Unit value based on landed-duty-paid U.S. imports for consumption.

³June 1982=100. Source: U.S. Department of Labor, Bureau of Labor Statistics.

⁴Source: S&P Global Platts Metals Week.