

Mineral Industry Surveys

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TITANIUM IN THE THIRD QUARTER 2023

In the third quarter of 2023, U.S. imports of titanium mineral concentrates, excluding titaniferous iron ore, totaled 134,000 metric tons (t) (gross weight) and included ilmenite (58,800 t), rutile (17,900 t), synthetic rutile (160 t) and titanium slag (56,900 t). Imports of rutile, ilmenite, and slag decreased by 81%, 44%, and 28%, respectively, compared with those in the second quarter of 2023. There were no imports of synthetic rutile in the first half of 2023 (table 4).

Exports of all forms of titanium mineral concentrates in the third quarter of 2023 were 18,100 t, a 55% decrease compared with that in the prior period (table 2).

Imports of all forms of titanium pigment in the third quarter of 2023 were 59,400 t a 3% increase compared with those in the second quarter of 2023 (table 5). Exports of all forms of titanium pigment were 74,900 t a slight increase compared with those in the prior quarter (table 2).

In the third quarter of 2023, total imports of titanium metal, excluding ferrotitanium, were 18,500 t and were primarily in the form of sponge (55%) and waste and scrap (37%). Imports of waste and scrap were unchanged while imports of sponge decreased by 3% compared with those in the prior quarter. Imports of ingot, powder, and other unwrought products decreased by 82% (table 3). Exports of all forms of titanium metal in the third quarter of 2023 were 8,940 t, unchanged 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 third 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			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Production:							
Sponge	W	W	W	W	W	W	W
Ingot	W	W	W	W	W	W	W
Mill products	W	W	W	W	W	W	W
Exports:							
Waste and scrap	2,610	2,050	8,610	2,690	2,070	2,290	7,050
Sponge	9	12	105	33	121	23	178
Ingot	732	749	3,630	1,540	1,060	1,200	3,810
Other unwrought	258	444	1,490	500	677	464	1,640
Bar, rod, profiles, wire	1,860	1,780	6,510	2,100	2,130	2,030	6,250
Bloom, sheet bar, slab	488	397	1,790	438	589	644	1,670
Other wrought	2,180	2,390 ^r	8,520	2,130	2,350	2,300	6,780
Total	8,130	7,820 ^r	30,700	9,440	8,990	8,940	27,400
Imports:							
Waste and scrap	4,880	6,630	19,300	6,020	6,990	6,910	19,900
Sponge ²	7,670	10,100	30,900	10,400	10,400	10,100	31,000
Ingot	94	113	733	740	661	65	1,470
Powder	75	41	194	69	75	79	222
Other unwrought	202	101	847	900	128	14	1,040
Wrought	1,180	993	7,010	1,340	1,280	1,100	3,720
Castings	11	7	38	7	12	33	53
Other	160	165	861	213	219	113	545
Total	14,300	18,200	59,800	19,700	19,800	18,500	57,900
Stocks, end of period:							
Sponge, industry	W	W	W	W	W	W	W
Scrap	W	W	W	W	W	W	W
Ingot	W	W	W	W	W	W	W
Consumption:							
Sponge	W	W	W	W	W	W	W
Scrap	W	W	W	W	W	W	W
Ingot	W	W	W	W	W	W	W
Shipments:							
Ingot and slab (producer net shipments)	W	W	W	W	W	W	W
Mill products (net shipments):							
Forging and extrusion billet	W	W	W	W	W	W	W
Other	W	W	W	W	W	W	W
Total	W	W	W	W	W	W	W
Castings	W	W	W	W	W	W	W
Receipts, scrap:							
Home	W	W	W	W	W	W	W
Purchased	W	W	W	W	W	W	W
Total	W	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			2023			
		3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Metal:								
Waste and scrap	8108.30.0000	2,610	2,050	8,610	2,690	2,070	2,290	7,050
Unwrought:								
Sponge	8108.20.0010	9	12	105	33	121	23	178
Ingot	8108.20.0030	732	749	3,630	1,540	1,060	1,200	3,810
Other	8108.20.0090	258	444	1,490	500	677	464	1,640
Wrought:								
Bar, rod, profiles, wire	8108.90.6031	1,860	1,780	6,510	2,100	2,130	2,030	6,250
Bloom, sheet bar, slab	8108.90.6020	488	397	1,790	438	589	644	1,670
Other	8108.90.8000	2,180	2,390	8,520	2,130	2,350	2,300	6,780
Ferrotitanium and ferrosilicon titanium	7202.91.0000	466	496	1,670	316	331	251	898
Ores and concentrates	2614.00.0000	75,100	63,300	262,000	56,600	40,400	18,100	115,000
Pigment:								
80% or more titanium dioxide	3206.11.0000	98,300	59,600	354,000	59,900	68,100	69,400	197,000
Other titanium dioxide	3206.19.0000	3,270	2,470	12,500	3,040	2,640	2,610	8,300
Unfinished titanium dioxide ³	2823.00.0000	2,520	2,070	11,400	2,950	2,880	2,960	8,790

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			
		3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Waste and scrap:	8108.30.0000							
Canada		491	515	1,810	495	731	552	1,780
China		264	157	731	218	222	141	581
France		557	659	2,040	867	800	718	2,380
Germany		498	662	2,450	661	878	1,060	2,600
Italy		342	460	1,350	349	305	269	923
Japan		492	1,140	2,340	831	765	923	2,520
Korea, Republic of		212	276	1,170	167	296	574	1,040
Mexico		531	642	1,650	407	550	369	1,330
Poland		180	220	585	203	281	280	764
Singapore		156	165	519	210	273	216	699
United Kingdom		686	998	2,840	1,120	967	1,050	3,140
Other		469	741	1,770	486	922	759	2,170
Total		4,880	6,630	19,300	6,020	6,990	6,910	19,900
Unwrought:								
Sponge:	8108.20.0010							
China		--	6	6	56	20	21	97
Japan		5,120	8,120	25,200	8,330	7,850	7,530	23,700
Kazakhstan ^e		1,240	1,160	3,120	1,070	738	791	2,600
Russia		35	--	104	--	--	--	--
Saudi Arabia		1,260	792	2,300	936	1,780	1,780	4,500
Ukraine		--	--	9	--	--	--	--
Other		17	17	106	21	20	17	59
Total		7,670	10,100	30,900	10,400	10,400	10,100	31,000
Ingot:	8108.20.0030							
Kazakhstan		94	107	281	605	652	65	1,320
Russia		--	5	423	135	8	--	144
Other		--	--	29	(3)	(3)	--	(3)
Total		94	113	733	740	661	65	1,470
Powder	8108.20.0015	75	41	194	69	75	79	222
Other	8108.20.0095	202	101	847	900	128	14	1,040
Wrought:								
Bar, rod, profiles, wire	8108.90.6031	494	333	2,220	806	587	444	1,840
Bloom, sheet bar, slab	8108.90.6020	35	49	2,160	64	3	5	73
Plate, sheet, strip, foil	8108.90.6045	296	294	1,610	268	475	412	1,150
Tube and pipe	8108.90.6060	179	147	449	58	63	61	181
Other	8108.90.6075	177	169	574	149	151	178	478
Total		1,180	993	7,010	1,340	1,280	1,100	3,720
Other articles of titanium:								
Castings	8108.90.3030	11	7	38	7	12	33	53
Other	8108.90.3060	160	165	861	213	219	113	545
Ferrotitanium and ferrosilicon titanium	7202.91.0000	1,240	731	3,630	490	1,050	953	2,490

^eEstimated. -- 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			2023			
		3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Ilmenite:	2614.00.6020							
Madagascar		59,400	90,000	277,000	15,000	40,000	12,500	67,500
Mozambique		50,100	22,600	143,000	65,000	44,000	30,000	139,000
Senegal		29,000	8,000	91,100	20,000	20,000	10,000	50,000
Ukraine		--	7,700	17,900	20,000	--	--	20,000
Other		40	--	80	12,600	230	6,300	19,100
Total		139,000	128,000	529,000	133,000	104,000	58,800	296,000
Titanium slag:	2620.99.5000							
Canada		47,000	31,600	85,100	17,000	47,000	33,400	97,400
Norway		15,000	15,000	47,500	--	15,000	--	15,000
South Africa		58,900	35,100	188,000	15,000	17,600	23,500	56,100
Other		15,000	195	15,200	--	--	--	--
Total		136,000	82,000	336,000	32,000	79,600	56,900	169,000
Rutile:	2614.00.6040							
Australia		19,100	23,700	109,000	14,500	33,900	10,100	58,500
Kenya		371	20,300	28,700	12,000	--	10	12,000
South Africa		28,900	29,300	168,000	44,700	58,800	7,770	111,000
Ukraine		20,300	57	34,000	308	--	--	308
Other		19,200 ^r	10,100 ^r	31,700 ^r	1	81 ^r	98	180
Total		87,900	83,500	371,000	71,600	92,700	17,900	182,000
Synthetic rutile:	2614.00.3000							
Australia		--	--	305	--	--	160	160
Other		17	84 ^r	102 ^r	--	--	--	--
Total		17	84	408	--	--	160	160
Titaniferous iron ore, Canada ⁴	2614.00.6020	--	24	46	7,510	22	--	7,530

^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.

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			2023			
		3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
80% or more titanium dioxide:	3206.11.0000							
Australia		3,230	5,760	14,600	390	1,740	1,020	3,150
Belgium		2,920	3,700	9,880	1,100	573	700	2,370
Canada		25,500	18,800	98,700	22,100	21,700	24,200	68,000
China		4,940	2,720	17,400	4,680	5,490	5,310	15,500
Czechia		1,290	1,970	6,210	1,020	859	843	2,720
Germany		3,020	4,410	14,400	1,580	2,200	2,320	6,100
Japan		1,520	1,340	5,510	782	1,190	1,370	3,340
Mexico		6,330	3,420	13,300	9,920	8,850	9,400	28,200
Spain		3,000	5,870	12,900	2,410	2,280	2,020	6,710
United Kingdom		2,780	3,190	7,400	474	542	486	1,500
Other		6,360 ^r	5,530 ^r	21,400 ^r	3,220 ^r	2,770 ^r	2,660	8,640
Total		60,800	56,700	222,000	47,700	48,200	50,300	146,000
Other titanium dioxide:	3206.19.0000							
Canada		3,620	3,180	13,100	3,550	3,370	3,760	10,700
China		255	136	856	237	190	166	594
France		11	182	204	381	182	5	568
India		242	135	687	342	200	297	839
Italy		459	86	1,270	217	200	160	576
Mexico		220	204	907	152	127	231	510
Other		475	349	1,760	419	336	355	1,110
Total		5,280	4,270	18,800	5,300	4,600	4,980	14,900
Unfinished titanium dioxide: ³	2823.00.0000							
Canada		432	333	2,010	203	204	186	593
China		2,200	1,640	8,240	2,530	2,310	1,680	6,520
France		1,590	1,970	5,680	1,190	501	852	2,540
Germany		757	819	2,960	161	688	327	1,180
India		745	417	2,820	234	561	489	1,280
Korea, Republic of		292	226	996	238	464	291	993
Other		421 ^r	332 ^r	1,590 ^r	258 ^r	207 ^r	323	788
Total		6,440	5,740	24,300	4,820	4,930	4,140	13,900
Grand total		72,500	66,700	265,000	57,800	57,700	59,400	175,000

^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	2d quarter	3rd quarter
Concentrate:								
Ilmenite, CIF, China ¹	dollars per metric ton	380	410	431	415	408	404	385
Titanium slag, import ²								
Canada	do.	946	2,770	1,040	1,060	1,160	1,190	1,130
Norway	do.	NA	867	NA	1,040	NA	1,000	NA
South Africa	do.	756	734	717	858	793	901	982
Rutile, natural: ¹								
Bagged, f.o.b. Australian ports	do.	1,720	2,170	2,250	2,200	2,200	2,200	2,200
Bulk, f.o.b. Australian ports	do.	1,450	1,460	1,480	1,490	1,500	1,480	1,480
Metal:								
Sponge metal, Japan, import ²	dollars per kilogram	10.70	10.70	11.40	11.50 [†]	11.30	12.20	12.90
Titanium mill products	producer price index ³	178	181	196	200	206	208	209
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	1.98	3.25	3.25	3.18	2.25	2.25	2.25
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	4.70	7.50	5.43	3.94	3.10	3.45	4.32
Pigment, titanium dioxide pigment, import ²	dollars per metric ton	3,320	3,380	3,520	3,560	3,320	3,310	3,170

[†]Revised. do. Ditto. 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.