

Mineral Industry Surveys

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TITANIUM IN THE THIRD QUARTER 2022

In the third quarter, U.S. imports of titanium mineral concentrates, excluding titaniferous iron ore, totaled 362,000 metric tons (t) (gross weight) and included ilmenite (139,000 t), rutile (87,900 t), synthetic rutile (17 t), and titanium slag (136,000 t) (table 4). Exports of all forms of titanium mineral concentrates were 75,100 t (table 2).

Imports of all forms of titanium pigment were 139,000 t compared with 131,000 t in the prior quarter (table 5). Exports of all forms of titanium pigment were 100,000 t compared with 109,000 t in the prior quarter (table 2).

Total imports of titanium metal, excluding ferrotitanium, were 14,200 t and were primarily in the form of sponge (54%) and waste and scrap (34%). Imports of sponge and scrap increased by 14% and 13%, respectively, compared with the prior quarter (table 3).

Exports of all forms of titanium metal were 8,050 t, a slight increase compared with the prior quarter (table 2). The net increase in imports of sponge and scrap was expected to result in increased production of titanium ingot and mill products.

Industry participation is key to the publication of aggregated totals of domestic titanium statistics. In the third quarter of 2022, 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 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)

	2021			2022			
	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	2,470 ^r	2,520	10,400	1,970	1,940	2,540	6,460
Sponge	32	27	117	79	5	9	92
Ingot	634	871	2,580	792	1,370	732	2,900
Other unwrought	802	439	2,030	398	393	258	1,050
Bar, rod, profiles, wire	1,180 ^r	1,210	4,210	1,350	1,530	1,860	4,750
Bloom, sheet bar, slab	328	358	1,700	468	436	488	1,390
Other wrought	1,480	1,840	6,190	1,740	2,210	2,170	6,130
Total	6,940	7,260	27,200	6,810	7,890	8,050	22,800
Imports:							
Waste and scrap	2,710	2,640	10,600	3,430	4,320	4,880	12,600
Sponge ²	3,430	5,380	16,000	6,630	6,720	7,670	21,000
Ingot	341	266	875	453	30	14	498
Powder	59	51	214	28	51	75	154
Other unwrought	330	593	1,270	357	186	203	746
Wrought	2,290	1,880	7,310	3,460	1,380	1,180	6,020
Castings	6	20	44	14	5	10	30
Other	157	168	580	283	296	160	739
Total	9,320	11,000	36,900	14,700	13,000	14,200	41,800
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

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	2021			2022			
		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	2,470 ^r	2,520	10,400	1,970	1,940	2,540	6,460
Unwrought:								
Sponge	8108.20.0010	32	27	117	79	5	9	92
Ingot	8108.20.0030	634	871	2,580	792	1,370	732	2,900
Other	8108.20.0090	802	439	2,030	398	393	258	1,050
Wrought:								
Bar, rod, profiles, wire	8108.90.6031	1,180 ^r	1,210	4,210	1,350	1,530	1,860	4,750
Bloom, sheet bar, slab	8108.90.6020	328	358	1,700	468	436	488	1,390
Other	8108.90.8000	1,480	1,840	6,190	1,740	2,210	2,170	6,130
Ferrotitanium and ferrosilicon titanium	7202.91.0000	206	331	1,280	313	397	466	1,180
Ores and concentrates	2614.00.0000	3,360	46,500	54,100	65,600	60,900	75,100	202,000
Pigment:								
80% or more titanium dioxide	3206.11.0000	115,000	103,000	466,000	96,700	102,000	94,300	293,000
Other titanium dioxide	3206.19.0000	3,080	2,800 ^r	13,000	3,120	3,680	3,230	10,000
Unfinished titanium dioxide ³	2823.00.0000	3,430	3,540	15,600	3,520	3,280	2,480	9,270

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

(Metric tons)

	HTS ² Code	2021			2022			
		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		328	381	1,460	451	354	491	1,300
China		3	6	47	151	158	269	579
France		217	308	1,160	457	384	557	1,400
Germany		573	665	2,210	629	671	498	1,800
Italy		99	114	449	186	366	342	894
Japan		235	191	857	216	491	492	1,200
Korea, Republic of		376	103	755	367	313	212	892
Mexico		172	229	766	165	313	531	1,010
Poland		8	18	153	45	140	180	364
Singapore		67	60	238	52	146	156	354
United Kingdom		312	385	1,500	453	686	686	1,830
Other		322	182	1,040	261	299	469	1,030
Total		2,710	2,640	10,600	3,430	4,320	4,880	12,600
Unwrought:								
Sponge:	8108.20.0010							
China		(3)	--	14	3	2	2	6
Germany		17	34	85	--	89	17	106
Japan		3,050	4,180	13,900	6,270	5,860	5,120	17,300
Kazakhstan ⁶		329	1,120	1,770	300	454	1,240	1,990
Russia		8	44	94	32	37	35	104
Saudi Arabia		18	--	18	18	234	1,260	1,510
Other		-- ^r	(3) ^r	71 ^r	(3)	43 ^r	--	44
Total		3,430	5,380	16,000	6,630	6,720	7,670	21,000
Ingot:	8108.20.0030							
Kazakhstan		144	116	260	65	--	14	79
Russia		196	151	614	388	30	--	418
Other		1	--	1	--	--	--	--
Total		341	266	875	453	30	14	498
Powder	8108.20.0015	59	51	214	28	51	75	154
Other	8108.20.0095	330	593	1,270	357	186	203	746
Wrought:								
Bar, rod, profiles, wire	8108.90.6031	599	507	2,160	873	522	495	1,890
Bloom, sheet bar, slab	8108.90.6020	1,060	627	2,180	1,740	334	35	2,110
Plate, sheet, strip, foil	8108.90.6045	489	549	2,270	659	361	291	1,310
Tube and pipe	8108.90.6060	102	70	281	61	61	179	302
Other	8108.90.6075	43	126	407	128	100	177	405
Total		2,290	1,880	7,310	3,460	1,380	1,180	6,020
Other articles of titanium:								
Castings	8108.90.3030	6	20	44	14	5	10	30
Other	8108.90.3060	157	168	580	283	296	160	739
Ferrotitanium and ferrosilicon titanium	7202.91.0000	1,010	569	4,150	534	1,140	1,230	2,900

⁶Estimated. ^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	2021			2022			
		3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Ilmenite:	2614.00.6020							
Madagascar		59,000	64,100	291,000	93,000	35,000	59,400	187,000
Mozambique		104,000	40,600	232,000	--	69,900	50,100	120,000
Senegal		20,800	29,000	88,800	45,000	9,000 ^r	29,000	83,100
Ukraine		20,300	--	20,300	10,200	--	--	10,200
Other		(3)	40	41	-- ^r	40	40	80
Total		204,000	134,000	632,000	148,000 ^r	114,000	139,000	401,000
Titanium slag:	2620.99.5000							
Canada		52,300	48,300	131,000	6,130	319	47,000	53,500
France		--	--	--	--	--	15,000	15,000
Norway		20,900	17,500	57,500	--	17,500	15,000	32,500
South Africa		39,500	17,300	151,000	48,000	46,000	58,900	153,000
Total		113,000	83,000	339,000	54,100	63,800	136,000	254,000
Rutile:	2614.00.6040							
Australia		46,500	5,100	127,000	12,700	35,300	19,100	67,000
Canada		11	35,700	48,900	2,020	--	5,360	7,370
Kenya		10,200	--	20,200	5,000	3,060	371	8,430
South Africa		35,500	27,900	123,000	47,400	62,300	28,900	139,000
Spain		(3)	1	139	(3)	1	13,800	13,800
Ukraine		278	376	1,660	13,500	150	20,300	34,000
Other		4 ^r	10 ^r	74 ^r	45 ^r	352 ^r	4	401
Total		92,500	69,000	320,000	80,600	101,000	87,900	270,000
Synthetic rutile:	2614.00.3000							
Australia		--	100	100	205	100	--	305
Germany		--	--	--	--	--	11	11
Netherlands		--	300	307	--	--	6	6
Sierra Leone		100	--	260	--	1	--	1
South Africa		95	--	95	--	--	--	--
Ukraine		--	200	227	--	--	--	--
Total		195	601	990	205	101	17	324
Titaniferous iron ore, Canada ⁴	2614.00.6020	--	8,810	13,500	22	--	--	22

^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.

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	2021			2022			
		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		4,390 ^r	3,690	12,600	2,560	3,060	3,230	8,850
Belgium		1,940	2,720	9,020	1,710	1,540	2,920	6,170
Canada		24,300	22,100	102,000	24,500	29,800	25,500	79,800
China		2,720	2,610	15,400	4,170	5,560	4,930	14,700
Czechia		1,450	1,820	5,840	1,180	1,770	1,290	4,240
Germany		6,020	4,430	22,000	3,470	3,440	3,020	9,930
Italy		1,760	1,760	6,790	1,420	1,110	1,940	4,470
Mexico		1,680	1,480	4,220	879	2,790	6,240	9,910
Spain		2,320	1,920	8,820	2,240	1,820	3,000	7,070
United Kingdom		880	1,060	3,430	751	676	2,780	4,210
Other		6,050 ^r	4,510 ^r	20,300 ^r	4,650 ^r	5,060 ^r	5,950	15,700
Total		53,600	48,100	210,000	47,500	56,600	60,800	165,000
Other titanium dioxide:	3206.19.0000							
Canada		3,270	2,980	13,300	3,120	3,190	3,610	9,910
China		453	534	1,570	297	160	255	712
Italy		277	278	1,060 ^r	255	468	459	1,180
Mexico		127	92	527	191	292	220	703
Other		293	316	1,210	462	793	728	1,980
Total		4,420	4,200	17,600	4,320	4,900	5,280	14,500
Unfinished titanium dioxide: ³	2823.00.0000							
Canada		1,470	316	4,180	304	945	432	1,680
China		1,950	3,070	7,200	1,530	2,870	2,190	6,590
France		669	794	2,060	1,010	1,110	1,590	3,710
Germany		719	1,130 ^r	3,360	641	740	777	2,160
India		741	493	2,600	545	1,110	745	2,400
Korea, Republic of		770	471	2,200	280	198	292	771
Other		515	439	1,880	344	488	422	1,250
Total		6,830	6,720	23,500	4,660	7,460	6,440	18,600
Grand total		64,800	59,100	251,000	56,500	69,000	72,500	198,000

^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
PRICES FOR TITANIUM MATERIALS

(End of period)

		2021				2022		
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter	2d quarter	3d quarter
Concentrate:								
Ilmenite, CIF, China ¹	dollars per metric ton	260–270	280–290	290–310	360–400	360–400	410–470	380–470
Titanium slag, import ²								
Canada	do.	1,100	1,200	1,020	870	950	NA	1,030
Norway	do.	NA	730	800	780	NA	870	1,060
South Africa	do.	510	540	780	790	760	810	740
Rutile, natural: ¹								
Bagged, f.o.b. Australian ports	do.	1,300–1,400	1,400–1,500	1,450–1,500	1,450–1,550	1,700–2,000	2,200–2,300	2,000–2,400
Bulk, f.o.b. Australian ports	do.	1,200–1,300	1,350–1,450	1,350–1,450	1,400–1,500	1,400–1,500	1,450–1,500	1,450–1,500
Metal:								
Sponge metal, Japan, import ²	dollars per kilogram	11.10	11.70	11.50	11.60	10.90	10.70	11.60
Titanium mill products	producer price index ³	168	168	169	171	178	183	197
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	1.50–1.90	1.50–1.90	1.50–1.90	1.50–1.90	3.00–3.50	3.00–3.50	3.00–3.40
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	4.00–4.30	4.00–4.30	4.00–4.30	4.00–4.30	7.00–8.00	7.00–8.00	8.00–9.00
Pigment:								
Titanium dioxide pigment, import ²	dollars per metric ton	2,740	2,890	3,030	3,240	3,390	3,430	3,600

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.