

Mineral Industry Surveys

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TITANIUM IN THE THIRD QUARTER 2012

Titanium mill product shipments in the third quarter of 2012 were 10,100 metric tons (t), unchanged from revised shipment totals in the previous quarter. Ingot production increased by 5%, and ingot shipments increased by 10%. Receipts of titanium scrap were 11,000 t, unchanged compared with receipts from the previous quarter.

In the third quarter, approximately 73% of mill products and castings was produced for commercial and military aerospace

applications. Other applications for titanium mill products and castings included, in descending order, industrial, medical, other commercial, nonaerospace military, and consumer. Data for titanium metal products are developed by the USGS from a voluntary survey of domestic operations. Data for nonrespondents were estimated based on previously reported data.

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

(Metric tons)

	2011			2012			
	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	15,200	16,800	60,300	17,400	16,500 ^r	17,800	51,700
Mill products	11,300	9,720	40,500	10,000 ^r	10,200	10,700	31,000
Exports:							
Waste and scrap	1,310	1,380	5,150	2,270	2,900	1,990	7,150
Sponge	36	116	256	209	344	517	1,070
Ingot	29	157	252	317	935	1,380	2,630
Other unwrought	182	599	923	26	38	36	100
Bar, rod, profiles, wire	861	1,300	4,060	1,010	858	891	2,760
Billet	938	892	3,500	1,040	1,040	816	2,890
Bloom, sheet bar, slab	390	562	1,560	663	599	387	1,650
Other wrought	4,490	4,160	15,600	3,830	3,250	2,950	10,000
Total	8,240	9,170	31,300	9,360	9,950	8,970	28,300
Imports:							
Waste and scrap	3,430	3,880	13,900	4,000	3,950	3,440	11,400
Sponge ²	8,730	9,960	33,800	8,900	9,060	8,870	26,800
Ingot	115	239	655	221	147	55	423
Powder	21	2	52	3	21	6	30
Other unwrought	23	86	208	186	114	48	347
Wrought	1,460	1,360	6,190	1,650	1,640	1,540	4,830
Castings	12	3	51	5	7	6	17
Other	151	101	574	136	155	83	374
Total	13,900	15,600	55,400	15,100	15,100	14,100	44,200
Stocks, end of period:							
Sponge, industry	5,000	10,800	10,800	12,100	14,800	14,500	14,500
Scrap	11,300	12,900	12,900	13,500	13,100	12,700	12,700
Ingot	3,000	3,850	3,850	3,390	3,400	3,330	3,330
Consumption:							
Sponge	12,100	11,700	48,400	8,470	7,890	7,680	24,000
Scrap	9,320	7,850	30,900	8,610	8,660	10,200	27,500
Ingot	15,800	15,400	55,900	15,400 ^r	14,100	13,900	43,500
Shipments:							
Ingot and slab (producer net shipments)	4,390	3,770	15,400	4,440 ^r	4,840 ^r	5,430 ^r	14,700
Mill products (net shipments):							
Forging and extrusion billet	4,580	4,110	16,800	4,190	4,600 ^r	4,350	13,100
Other	6,550	5,620	28,700	5,750 ^r	5,550 ^r	6,300	17,600
Total	11,100	9,720	45,500	9,930 ^r	10,100 ^r	10,600	30,700
Castings	W	W	W	W	W	W	W
Receipts, scrap:							
Home	4,140	5,200	12,300 ³	7,050 ^r	4,530 ^r	3,690	15,300
Purchased	7,290	6,170	21,200 ³	6,510 ^r	6,280 ^r	7,290	20,100
Total	11,400	11,400	40,200	13,600 ^r	10,800 ^r	11,000	35,400

^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.

³Data for second, third, and fourth quarter.

TABLE 2
U.S. EXPORTS OF TITANIUM PRODUCTS¹

(Metric tons)

	2011			2012			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Metal:							
Waste and scrap	1,310	1,380	5,150	2,270	2,900	1,990	7,150
Unwrought:							
Sponge	36	116	256	209	344	517	1,070
Ingot	29	157	252	317	935	1,380	2,630
Other unwrought	182	599	923	26	38	36	100
Wrought:							
Bar, rod, profiles, wire	861	1,300	4,060	1,010	858	891	2,760
Billet	938	892	3,500	1,040	1,040	816	2,890
Bloom, sheet bar, slab	390	562	1,560	663	599	387	1,650
Other	4,490	4,160	15,600	3,830	3,250	2,950	10,000
Ferrotitanium and ferrosilicon titanium	895	664	3,210	760	1,080	1,060	2,900
Ores and concentrates	8,540	2,900	26,600	3,460	6,390	17,100	27,000
Pigment:							
80% or more titanium dioxide	204,000	179,000	741,000	178,000	145,000	151,000	474,000
Other titanium dioxide	10,400	8,110	40,000	9,260	10,600	9,180	29,000
Unfinished titanium dioxide ²	1,830	1,460	7,160	1,230	777	1,590	3,600

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

²Unmixed and not surface treated.

Source: U.S. Census Bureau.

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

(Metric tons)

	2011			2012			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Waste and scrap:							
Canada	132	240	738	206	206	156	568
France	447	469	1,790	490	540	400	1,430
Germany	492	498	1,930	649	557	598	1,800
Israel	173	101	523	102	115	109	325
Italy	83	77	329	121	94	12	227
Japan	418	642	2,260	607	554	479	1,640
Korea, Republic of	280	185	655	133	313	140	586
Mexico	82	96	369	104	137	150	391
Singapore	52	57	179	65	24	46	135
Sweden	--	--	--	138	36	93	266
Taiwan	114	144	813	136	101	98	335
United Kingdom	840	918	2,820	915	967	855	2,740
Other	312 ^r	457 ^r	1,520 ^r	337 ^r	305 ^r	305	947
Total	3,430	3,880	13,900	4,000	3,950	3,440	11,400
Unwrought:							
Sponge:							
China	1,550	2,210	5,860	1,470	892	908	3,270
Japan	3,690	4,620	16,100	4,370	4,930	5,130	14,400
Kazakhstan ^c	2,660	2,000	8,610	2,420	2,150	2,060	6,620
Ukraine	485	775	1,950	440	434	307	1,180
Other ²	356	363	1,270	199	663	469	1,330
Total	8,730	9,960	33,800	8,900	9,060	8,870	26,800
Ingot:							
Germany	48	98	344	59	30	20	109
Russia	67	141	302	162	117	35	314
Other	--	--	9	--	--	--	--
Total	115	239	655	221	147	55	423
Powder	21	2	52	3	21	6	30
Other	23	86	208	186	114	48	347
Wrought:							
Bar, rod, profiles, wire	438	385	1,710	505	500	374	1,380
Billet	257	186	885	256	257	282	794
Bloom, sheet bar, slab	4	11	30	4	15	1	20
Plate, sheet, strip, foil	588	591	2,910	751	647	742	2,140
Tube and pipe	127	124	440	92	83	42	214
Other	47	67	218	42	140	100	283
Total	1,460	1,360	6,190	1,650	1,640	1,540	4,830
Other articles of titanium:							
Castings	12	3	51	5	7	6	17
Other	151	101	574	136	155	83	374
Ferrotitanium and ferrosilicon titanium	544	419	2,070	660	767	505	1,930

^cEstimated. ^rRevised. -- Zero.

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

²All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

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

(Metric tons)

	2011			2012			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
Ilmenite:							
Australia	77,500	55,600	244,000	99,000	38,200	62,300	200,000
Mozambique	25,000	31,000	114,000	32,800	20,000	25,000	77,800
Ukraine	--	--	10,000	--	--	--	--
Other ²	--	--	9,340	9,750	9,970	--	19,700
Total	103,000	86,600	377,000	142,000	68,200	87,300	297,000
Titanium slag:							
Canada	32,200	81,100	191,000	77,100	59,000	101,000	238,000
South Africa	79,000	93,900	323,000	98,500	83,100	25,400	207,000
Other ²	--	--	--	--	1	--	1
Total	111,000	175,000	513,000	176,000	142,000	127,000	445,000
Rutile:							
Australia	34,300	16,100	106,000	49,500	22,700	33,600	106,000
South Africa	22,900	39,000	133,000	24,700	41,600	30,500	96,800
Other ²	613	13,900	23,600	540	5,030	4,610	10,200
Total	57,800	69,000	262,000	74,800	69,300	68,700	213,000
Synthetic rutile:							
Australia	26,800	16,000	112,000	40,100	10,200	35,000	85,400
Other ²	1,260	4,900	6,960	3,040	199	434	3,680
Total	28,100	20,900	119,000	43,200	10,400	35,500	89,000
Titaniferous iron ore, Canada ²	21	33	96	184	--	--	184

-- Zero.

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

²All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

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

(Metric tons)

	2011			2012			
	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	3d quarter	1st quarter– 3d quarter
80% or more titanium dioxide:							
Canada	21,100	16,600	79,000	20,900	20,200	16,500	57,700
China	1,270	2,670	10,300	4,300	7,880	8,200	20,400
Finland	1,470	1,790	6,790	1,130	1,210	2,220	4,560
France	1,140	1,320	4,910	1,660	1,240	1,460	4,370
Germany	2,160	1,730	6,450	1,300	1,870	4,570	7,740
Italy	933	850	3,460	836	760	491	2,090
Japan	1,190	997	4,180	899	1,000	1,130	3,040
Spain	--	--	--	519	830	1,230	2,570
Ukraine	2,540	2,270	11,700	2,850	4,030	3,270	10,100
Other	3,540	2,890	13,700	2,090 ^r	3,860 ^r	6,580	12,500
Total	35,400	31,100	140,000	36,500	42,900	45,700	125,000
Other titanium dioxide:							
Canada	2,390	2,170	8,820	2,280	2,110	2,180	6,570
China	309	378	1,110	306	447	679	1,430
France	--	--	--	83	259	2	344
Germany	155	33	666	150	185	156	491
Japan	126	52	552	178	281	276	735
Other	235	241	1,030	273	391	381	1,050
Total	3,210	2,880	12,200	3,270	3,680	3,670	10,600
Unfinished titanium dioxide:²							
China	7,000	5,710	24,200	4,400	4,610	3,230	12,200
Czech Republic	627	516	2,460	588	753	668	2,010
Finland	732	789	2,910	576	552	440	1,570
France	1,840	1,560	5,720	1,200	370	281	1,860
Germany	1,090	770	4,270	824	1,080	784	2,690
Italy	875	268	3,120	669	1,040	865	2,580
Korea, Republic of	406	436	2,630	657	1,310	1,340	3,300
Other	327	671	2,430	1,470	1,190	593	3,260
Total	12,900	10,700	47,700	10,400	10,900	8,200	29,500
Grand total	51,500	44,700	200,000	50,200	57,500	57,500	165,000

^rRevised. -- Zero.

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

²Unmixed and not surface treated.

Source: U.S. Census Bureau.

TABLE 6
PRICES FOR TITANIUM MATERIALS

(End of period)

		2011		2012		
		3d quarter	4th quarter	1st quarter	2d quarter	3d quarter
Concentrate:						
Ilmenite, f.o.b. Australian ports ¹	dollars per metric ton	140–250	140–250	250–350	250–350	250–350
Titanium slag, import ²	do.	320–475	468–494	682–948	708–1,022	532–981
Rutile, natural:¹						
Bagged, f.o.b. Australian ports	do.	1,348–1,600	1,348–1,600	2,480–2,700	2,500–2,800	2,500–2,800
Bulk, f.o.b. Australian ports	do.	1,000–1,120	1,300–1,400	1,990–2,050	2,050–2,400	2,050–2,400
Metal:						
Sponge metal, Japan, import ²	dollars per pound	5.68	5.74	6.84	6.81	6.87
Titanium mill products	producer price index ³	209	202	200	184 ^r	186
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	2.60–2.65	2.00–2.20	2.15–2.30	2.00–2.10	1.80–1.90
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	4.10–4.20	3.45–3.55	3.60–3.65	3.50–3.55	3.25–3.35
Pigment:						
Titanium dioxide pigment, import ²	dollars per metric ton	3,133	3,530	3,670	3,780	3,530
Titanium dioxide pigment	producer price index ³	251	268	291	303 ^r	298

^rRevised. do. Ditto.

¹Source: Industrial Minerals (London).

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: Platts Metals Week.