

Mineral Industry Surveys

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TITANIUM IN THE SECOND QUARTER 2016

Titanium mill product shipments in the second quarter of 2016 were 8,890 metric tons (t), a decrease of 11% from shipment totals in the previous quarter, and a 11% decrease from those of the second quarter of 2015. Ingot production totaled 18,500 t, an increase of 19% from revised first quarter totals, and a 35% increase from production in the second quarter of 2015. Ingot/slab shipments increased by 4% from the preceding quarter, and increased by 13% from shipments in the second quarter of 2015. Receipts of titanium scrap totaled 16,700 t, an increase of 18% from those in the previous quarter, and a decrease of 2% from shipments in the second quarter of 2015 (table 1).

In the second quarter of 2016, approximately 75% of mill products and castings were produced for commercial and military aerospace applications. Other applications for titanium mill products and castings included, in descending order, industrial, medical, consumer, nonaerospace military, and other. Data for titanium metal products are developed by the U.S. Geological Survey from a voluntary survey of domestic operations. Data for nonrespondents were estimated based on previously reported data.

Update

On August 24, Allegheny Technologies Inc., (ATI), announced that it would idle its Rowley, UT, titanium sponge facility by the end of 2016 and consolidate certain titanium hot-working operations in Albany, OR. According to ATI, significant global titanium sponge capacity added in recent years and weak demand for industrial-grade titanium allowed it to secure aerospace quality sponge under long-term supply agreements at prices lower than production costs at its Rowley facility. The facility was to be idled in a manner that would allow it to be restarted if supported by market conditions (Allegheny Technologies Inc., 2016).

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Reference Cited

Allegheny Technologies Inc., 2016, Allegheny Technologies announced actions to improve future financial performance: Pittsburgh, PA, Allegheny Technologies Inc. news release, August 24. (Accessed September 12, 2016, at https://www.atimetals.com/news/Pages/NA_2197226.aspx.)

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

(Metric tons)

	2015				2016		
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	1st quarter– 2d quarter
Production:							
Sponge	W	W	W	W	W	W	W
Ingot	13,600	15,900	15,700	61,100 ^r	15,500 ^r	18,500	34,000
Mill products	10,000	9,060	9,240	38,100	10,000	8,750	18,700
Exports:							
Waste and scrap	1,820	1,750	1,990	6,860	2,300 ^r	2,920	5,230
Sponge	387	360	392	1,650	152	153	305
Ingot	1,220	1,530	1,490	5,620	1,630	1,790	3,420
Other unwrought	452	416	447	1,740	426 ^r	409	835
Bar, rod, profiles, wire	1,780	1,480	1,290	6,250	1,570 ^r	1,540	3,110
Bloom, sheet bar, slab	764	591	646	2,550	698	755	1,450
Other wrought	2,780	2,690	2,350	10,400	2,410	2,580	5,000
Total	9,200	8,810	8,600	35,000	9,190 ^r	10,200	19,300
Imports:							
Waste and scrap	5,900	5,770	5,300	22,100	4,530 ^r	3,690	8,220
Sponge ²	6,370	4,750	4,620	20,700	3,650 ^r	3,660	7,310
Ingot	94	74	146	403	92 ^r	45	137
Powder	50	28	25	130	64 ^r	30	94
Other unwrought	460	235	351	1,490	150 ^r	221	371
Wrought	1,340	1,590	1,330	5,670	1,850 ^r	1,550	3,400
Castings	16	2	2	31	19	2	21
Other	137	138	122	509	153	221	374
Total	14,400	12,600	11,900	51,000	10,500 ^r	9,410	19,900
Stocks, end of period:							
Sponge, industry	26,800	26,400	25,000	25,000	28,900	27,600	27,600
Scrap	19,500	19,900	20,700	20,700	20,000	20,800	20,800
Ingot	8,240	9,780	9,610	9,610	13,900 ^r	14,500	14,500
Consumption:							
Sponge	6,930	7,540	8,390	31,200	8,490	8,600	17,100
Scrap	12,400	13,400	13,300	52,200	12,200	14,400	26,600
Ingot	13,000	15,000	14,000	57,200	12,400 ^r	14,000	26,500
Shipments:							
Ingot and slab (producer net shipments)	4,190	4,950	4,540	18,700	4,550	4,720	9,280
Mill products (net shipments):							
Forging and extrusion billet	6,200	5,730	5,570	24,100	6,890	6,220	13,100
Other	3,740	3,320	3,660	13,900	3,100	2,670	5,770
Total	9,940	9,050	9,230	38,000	9,990	8,890	18,900
Castings	W	W	W	W	W	W	W
Receipts, scrap:							
Home	5,130	5,240	5,080	21,000	5,330	5,260	10,600
Purchased	11,800	11,100	11,200	43,800	8,840	11,400	20,300
Total	16,900	16,400	16,300	64,700	14,200	16,700	30,900

^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)

	2015				2016		
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	1st quarter– 2d quarter
Metal:							
Waste and scrap	1,820	1,750	1,990	6,860	2,300 ^r	2,920	5,230
Unwrought:							
Sponge	387	360	392	1,650	152	153	305
Ingot	1,220	1,530	1,490	5,620	1,630	1,790	3,420
Other unwrought	452	416	447 ^r	1,740	426	409	835
Wrought:							
Bar, rod, profiles, wire	1,780	1,480	1,290	6,250	1,570 ^r	1,540	3,110
Bloom, sheet bar, slab	764	591	646	2,550	698	755	1,450
Other	2,780	2,690	2,350	10,400	2,410	2,580	5,000
Ferrotitanium and ferrosilicon titanium	753	591	409	2,140	433	414	847
Ores and concentrates	571	564	312	2,040	715	2,370	3,090
Pigment:							
80% or more titanium dioxide	172,000	153,000	151,000	624,000	165,000	160,000	324,000
Other titanium dioxide	4,880	5,170	4,710	20,200	3,930	3,710	7,640
Unfinished titanium dioxide ²	772	721	682	3,660	538	603	1,140

^rRevised.

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)

	2015				2016		
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	1st quarter– 2d quarter
Waste and scrap:							
Brazil	20	58	--	78	20 ^r	--	20
Canada	342	287	293	1,160	286	313	599
China	279	180	71	635	40	88	128
Czech Republic	54	60	--	141	28 ^r	47	75
France	564	707	656	2,550	524 ^r	381	905
Germany	846	854	911	3,400	870	475	1,350
India	20	16	--	43	7 ^r	14	21
Israel	132	131	160	596	128	83	211
Italy	250	348	235	1,130	342	82	424
Japan	799	913	909	3,300	739	563	1,300
Korea, Republic of	493	459	412	1,870	306	327	633
Mexico	186	250	181	773	96	169	265
Singapore	151	55	--	275	65 ^r	73	138
Spain	264	111	--	428	29 ^r	52	81
Sweden	83	50	--	169	34 ^r	2	36
Taiwan	114	59	120	554	53	24	77
United Kingdom	1,160	1,120	920	4,170	826	952	1,780
Other	139	111	435	785	139	41	180
Total	5,900	5,770	5,300	22,100	4,530^r	3,690	8,220
Unwrought:							
Sponge:							
China	361	--	18	890	--	--	--
Japan	5,110	3,890	3,500	15,500	3,390	3,590	6,980
Kazakhstan ^c	720	570	855	2,600	45	--	45
Russia	63	125	95	383	123 ^r	41	164
Ukraine	110	162	154	1,310	10	20	30
Other	--	--	--	30	78	4	82
Total	6,370	4,750	4,620	20,700	3,650^r	3,660	7,310
Ingot:							
Japan	11	11	6	39	13	14	27
Russia	58	54	135	325	79 ^r	31	110
Other	25	9	5	40	--	--	--
Total	94	74	146	403	92^r	45	137
Powder	50	28	25	130	64 ^r	30	94
Other	460	235	351	1,490	150 ^r	221	371
Wrought:							
Bar, rod, profiles, wire	372	370	428	1,490	406 ^r	301	707
Bloom, sheet bar, slab	187	191	142	753	133	5	138
Plate, sheet, strip, foil	508	777	526	2,460	989 ^r	982	1,970
Tube and pipe	76	70	82	287	162	130	292
Other	199	179	154	681	162 ^r	130	292
Total	1,340	1,590	1,330	5,670	1,850^r	1,550	3,400
Other articles of titanium:							
Castings	16	2	2	31	19	2	21
Other	137	138	122	509	153	221	374
Ferrotitanium and ferrosilicon titanium	217	521	630	1,730	979	516	1,500

^cEstimated. ^rRevised. -- Zero.

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

Source: U.S. Census Bureau.

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

(Metric tons)

	2015				2016		
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	1st quarter– 2d quarter
Ilmenite:							
Australia	43,900	102,000	58,100	327,000	29,100	83,300	112,000
Mozambique	65,000	68,100	36,000	217,000	75,300	38,900	114,000
Other	--	20,300	9,970	40,200	20,100	64,600	84,700
Total	109,000	191,000	104,000	585,000	124,000	187,000	311,000
Titanium slag:							
Australia	10,500	--	11,400	56,400	--	--	--
Canada	50,000	--	41,800	102,000	--	41,000	41,000
South Africa	86,700	28,000	96,200	241,000	93,300	39,600	133,000
Total	147,000	28,000	149,000	399,000	93,300	80,600	174,000
Rutile:							
Australia	17,700	20,600	22,400	68,000	7,630	25,600	33,200
Kenya	--	--	11,000	21,000	10,000	--	10,000
Sierra Leone	10,400	10,100	14,600	35,200	98	13,500	13,600
South Africa	14,300	48,500	40,200	167,000	30,100	14,200	44,300
Other	102	47	100	714	8,510	12,300	20,800
Total	42,500	79,300	88,400	292,000	56,400	65,700	122,000
Synthetic rutile:							
Australia	28,000	18,000	34,800	98,800	18,000	18,000	36,000
Other	1,390	566	677	2,850	970	671	1,640
Total	29,400	18,600	35,500	102,000	19,000	18,700	37,700
Titaniferous iron ore, Canada	--	15,400	49,300	64,700	--	--	--

-- Zero.

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

Source: U.S. Census Bureau.

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

(Metric tons)

	2015				2016		
	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter	2d quarter	1st quarter– 2d quarter
80% or more titanium dioxide:							
Australia	1,570	277	5,340	7,520	408	261	669
Canada	17,600	16,700	10,300	60,600	14,700	16,700	31,400
China	10,800	9,200	5,540	35,200	6,870	12,600	19,500
Finland	1,900	1,640	1,020	6,080	1,630	1,770	3,390
Germany	4,710	3,370	2,060	13,100	3,520	2,930	6,450
Japan	1,410	1,240	1,130	5,340	1,420	1,660	3,080
Mexico	2,300	2,370	1,070	6,420	938	4,110	5,040
Norway	1,830	799	1,360	4,970	1,030	676	1,710
Spain	3,260	1,640	1,640	8,780	2,160	2,020	4,180
Ukraine	536	709	636	2,900	--	1,270	1,270
Other	6,940	4,440	3,060	17,800	3,580	4,670	8,240
Total	52,900	42,400	33,200	169,000	36,200	48,600	84,900
Other titanium dioxide:							
Canada	3,060	2,500	2,110	9,530	2,590	2,400	4,990
China	340	344	156	1,130	231	488	719
Germany	169	39	14	899	41	64	105
India	40	83	--	194	109 ^r	43	152
Italy	199	345	241	937	108	131	239
Other	224	256	354	1,060	208 ^r	183	391
Total	4,040	3,570	2,880	13,700	3,290^r	3,310	6,600
Unfinished titanium dioxide:²							
China	5,120	4,470	3,750	16,000	5,670	5,820	11,500
Czech Republic	574	554	604	2,550	611	731	1,340
Finland	855	947	500	3,020	996	802	1,800
France	873	1,260	910	4,710	1,370	1,460	2,830
Germany	1,180	1,110	738	3,930	1,680	2,110	3,800
India	416	154	--	690	136 ^r	1,110	1,250
Italy	235	1,030	663	2,640	1,110	714	1,820
Japan	141	161	--	368	412 ^r	267	679
Korea, Republic of	220	1,620	250	2,660	309	135	444
Other	160	399	1,230	2,010	362	618	980
Total	9,780	11,700	8,640	38,500^r	12,700^r	13,800	26,400
Grand total	66,700	57,600	44,700	221,000	52,200^r	65,700	118,000

^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)

		2015				2016	
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter	2d quarter
Concentrate:							
Ilmenite, f.o.b. Australian ports ¹	dollars per metric ton	140–160	100–120	100–120	100–120	100–120	100–110
Titanium slag, import ²	do.	793–833	688–788	742–782	630–752	634–700	671–697
Rutile, natural:¹							
Bagged, f.o.b. Australian ports	do.	890–990	800–840	800–840	800–840	800–840	620–650
Bulk, f.o.b. Australian ports	do.	810–940	790–890	790–890	790–890	790–890	650–700
Metal:							
Sponge metal, Japan, import ²	dollars per pound	5.64	5.50	5.75	5.36	4.70 ^r	4.80
Titanium mill products	producer price index ³	166	170	169	171	172	171
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	1.20–1.30	1.20–1.25	1.00–1.05	0.75–0.80	0.45–0.55 ^r	0.35–0.45
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	2.70–2.90	2.60–2.80	2.10–2.20	1.90–2.10	1.80–1.90 ^r	1.75–1.82
Pigment:							
Titanium dioxide pigment, import ²	dollars per metric ton	2,705	2,502	2,511	2,331	2,319	2,168
Titanium dioxide pigment	producer price index ³	202	184	215	176	160 ^r	183

^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.