



Mineral Industry Surveys

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TITANIUM IN THE SECOND QUARTER 2008

According to the U.S. Geological Survey (USGS), titanium mill product shipments in the second quarter of 2008 were 8,850 metric tons (t), a 7% increase compared with shipments in the previous quarter. Receipts of titanium scrap totaled 8,380 t, a 5% decrease compared with receipts from the previous quarter. Ingot producer shipments totaled 4,580 t, a 13% increase compared with shipments from the previous quarter.

Approximately 80% of mill products and castings were used in commercial and military aerospace applications. Other applications for titanium mill products and castings included, in descending order, industrial, nonaerospace military, medical, and consumer uses. 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)

	2007				2008		
	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Year to date
Production:							
Sponge	W	W	W	W	W	W	W
Ingot	14,400	14,400	14,900	59,200	14,500	15,800	30,300
Mill products	9,510	9,620	9,770	38,200	9,490	10,100	19,600
Exports:							
Waste and scrap	1,660	1,380	1,820	9,510	1,590	1,730	3,310
Sponge	673	554	319	2,000	403	513	916
Ingot	616	530	412	2,270	260	311	571
Other unwrought	358	255	214	1,000	493	494	987
Bar, rod, profiles, wire	678	628	723	2,840	886	804	1,690
Billet	746	658	609	2,730	716	769	1,490
Bloom, sheet bar, slab	292	382	520	1,280	421	713	1,130
Other wrought	2,300	2,070	2,350	8,670	2,460	2,540	4,990
Total	7,320	6,460	6,960	23,300	7,220	7,870	15,100
Imports:							
Waste and scrap	2,960	2,850	2,800	12,200	2,540	2,730	5,270
Sponge ²	6,830	6,830	6,970	25,900	6,320	6,130	12,400
Ingot	688	589	549	2,270	326	220	546
Powder	91	23	68	246	17	52	69
Other unwrought	48	9	7	101	23	21	44
Wrought	1,060	1,300	1,510	4,970	2,010	1,720	3,730
Castings	10	1	10	23	1	6	7
Other	107	90	59	350	81	65	146
Total	11,800	11,100	12,000	46,100	11,300	10,900	22,200
Stocks, end of period:							
Sponge, industry	7,630	7,780	7,820	XX	10,400 ^r	11,300	XX
Scrap	10,200	11,900	12,600	XX	W	W	XX
Ingot	4,700	5,740	5,150	XX	5,000	4,920	XX
Consumption:							
Sponge	9,410	7,800	8,180	33,700	8,590	W	W
Scrap	6,130	5,990	5,870	23,800	5,580	5,540	12,600
Ingot	13,800	12,500	12,900	50,300	12,300	12,700	25,000
Shipments:							
Ingot (producer net shipments) ³	4,130	4,060	4,130	11,900	4,070	4,580	8,650
Mill products (net shipments):							
Forging and extrusion billet	3,320	3,110	3,030	12,400	3,260	3,230	6,490
Plate, sheet, strip	3,330	3,790	3,910	14,700	3,370	3,940	7,300
Other	1,540 ^r	1,460	1,590	6,040	1,620	1,680	3,300
Total	8,190	8,360	8,530	33,200	8,250	8,850	17,100
Castings	424	431	434	1,760	W	W	W
Receipts, scrap:							
Home	2,690	3,390	2,890	12,300	3,770	W	W
Purchased	4,940	4,640	4,200	18,800	5,040	W	W
Total	7,630	8,040	7,090	31,100	8,800	8,380	17,200

^rRevised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

²Estimated by the U.S. Geological Survey.

³Data series revised to include only ingot producers.

TABLE 2
U.S. EXPORTS OF TITANIUM PRODUCTS¹

(Metric tons)

	2007				2008		
	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Year to date
Metal:							
Waste and scrap	1,660	1,380	1,820	9,510	1,590	1,730	3,310
Unwrought:							
Sponge	673	554	319	2,000	403	513	916
Ingot	616	530	412	2,270	260	311	571
Other unwrought	358	255	214	1,000	493	494	987
Wrought:							
Bar, rod, profiles, wire	678	628	723	2,840	886	804	1,690
Billet	746	658	609	2,730	716	769	1,490
Bloom, sheet bar, slab	292	382	520	1,280	421	713	1,130
Other	2,300	2,070	2,350	8,670	2,460	2,540	4,990
Ferrotitanium and ferrosilicon titanium	675	433	500	2,120	421	510	931
Ores and concentrates	4,630	2,720	863	9,730	3,320	5,500	8,820
Pigment:							
80% or more titanium dioxide	139,000	145,000	160,000	564,000	152,000	184,000	335,000
Other titanium dioxide	30,700	32,300	25,800	111,000	22,200	19,700	41,900
Unfinished titanium dioxide ²	2,420	1,350	946	7,200	946	1,620	2,570

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)

	2007				2008		
	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Year to date
Waste and scrap:							
Canada	253	228	259	908	194	245	439
China	50	50	3	275	11	122	133
France	392	481	381	1,670	310	393	703
Germany	369	286	325	1,430	255	278	533
Italy	118	37	70	225	43	--	43
Japan	567	595	461	2,210	524	405	929
Mexico	52	77	47	176	70	66	136
Russia	146	68	120	472	78	58	136
Taiwan	130	127	267	953	111	180	291
United Kingdom	700	629	589	2,700	568	725	1,290
Other	183 ^r	272 ^r	282 ^r	1,220 ^r	373 ^r	259	632
Total	2,960	2,850	2,800	12,200	2,540	2,730	5,270
Unwrought:							
Sponge:							
China	907	655	455	2,220	377	701	1,080
Japan	1,970	2,140	2,260	8,250	1,950	1,910	3,850
Kazakhstan ^c	3,690	3,680	3,840	13,800	3,650	2,760	6,410
Russia	262	124	159	822	111	139	250
Ukraine	5	116	256	703	237	491	728
Other ²	--	120	1	151	--	128	128
Total	6,830	6,830	6,970	25,900	6,320	6,130	12,400
Ingot:							
Germany	185	280	250	884	164	80	244
Russia	441	309	282	1,300	129	97	226
Other	62	--	17	78	32	43	75
Total	688	589	549	2,270	326	220	546
Powder	91	23	68	246	17	52	69
Other	48	9	7	101	23	21	44
Wrought:							
Bar, rod, profiles, wire	298	389	366	1,410	552	220	772
Billet	185	197	295	754	464	229	693
Bloom, sheet bar, slab	4	8	4	45	31	266	297
Plate, sheet, strip, foil	486	642	791	2,450	817	675	1,490
Tube and pipe	23	26	26	109	28	66	94
Other	59	39	30	207	116	261	377
Total	1,060	1,300	1,510	4,970	2,010	1,720	3,730
Other articles of titanium:							
Castings	10	1	10	23	1	6	7
Other	107	90	59	350	81	65	146
Ferrotitanium and ferrosilicon titanium	3,060	2,270	610	7,620	1,170	722	1,890

^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)

	2007				2008		
	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Year to date
Ilmenite:							
Australia	39,000	91,700	24,700	228,000	43,300	63,300	107,000
Mozambique	--	--	--	--	50,500	203	50,700
Sierra Leone	--	12,000	--	12,000	--	--	--
South Africa	--	5,990	--	5,990	--	21,000	21,000
Ukraine	--	--	--	--	20,500	--	20,500
Total	39,000	110,000	24,700	246,000	114,000	84,500	199,000
Titanium slag:							
Canada	34,300	48,100	79,800	193,000	6,010	40,000	46,000
South Africa	162,000	99,400	156,000	475,000	109,000	121,000	230,000
Other ²	54,700	15,000	4	80,700	--	--	--
Total	251,000	162,000	236,000	749,000	115,000	161,000	276,000
Rutile:							
Australia	5,420	31,700	41,400	145,000	29,700	49,600	79,400
Canada ²	16,300	3	8	34,300	11,600	20,000	31,600
Sierra Leone	--	13,000	6,000	27,000	--	--	--
South Africa	41,200	38,500	31,700	170,000	47,000	39,400	86,400
Other ²	421	653	704	2,160	187	405	592
Total	63,300	83,900	79,800	379,000	88,500	109,000	198,000
Synthetic rutile:							
Australia	45,000	19,000	--	64,700	11,400	52,900	64,300
Malaysia	18	--	--	2,110	548	236	784
South Africa	--	5,000	2,000	15,000	--	3,000	3,000
Other ²	17	--	--	19	40	120	160
Total	45,000	24,000	2,000	84,800	12,000	56,200	68,300
Titaniferous iron ore, Canada ²	--	72	--	72	--	51,800	51,800

-- 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)

	2007				2008		
	Second quarter	Third quarter	Fourth quarter	Year to date	First quarter	Second quarter	Year to date
80% or more titanium dioxide:							
Belgium	1,160	1,040	1,560	4,920	1,250	1,060	2,310
Canada	21,900	22,400	18,800	81,100	20,900	20,100	41,100
China	4,590	2,410	1,910	12,900	1,480	1,540	3,020
Finland	2,680	2,630	3,380	12,000	2,560	2,550	5,100
Germany	1,210	1,320	1,120	5,960	1,510	1,270	2,770
Italy	1,550	1,310	1,990	6,080	1,230	1,850	3,080
Japan	980	1,050	570	3,440	888	1,020	1,910
Mexico	868	612	542	3,320	1,130	1,350	2,480
Netherlands	1,010	1,270	648	3,790	591	950	1,540
Spain	2,920	2,070	2,260	10,500	1,620	1,760	3,380
Ukraine	1,100	1,150	1,140	4,060	2,250	1,100	3,340
United Kingdom	1,850	974	353	3,970	431	180	611
Other	4,380	4,050	2,390	15,000	3,550	3,000	6,550
Total	46,200	42,200	36,700	167,000	39,400	37,800	77,200
Other titanium dioxide:							
Canada	479	563	723	2,340	1,040	1,490	2,530
China	163	223	213	826	203	279	482
Finland	55	47	51	184	53	71	124
France	59	118	61	275	179	179	358
Germany	151	210	152	688	242	208	450
Japan	113	175	348	699	193	214	407
Korea, Republic of	283	326	266	920	30	218	248
Other	222	93	148	631	171	223	394
Total	1,530	1,760	1,960	6,570	2,110	2,880	4,990
Unfinished titanium dioxide:²							
China	4,580	2,780	2,640	14,600	2,460	3,520	5,980
Czech Republic	836	566	535	2,730	689	562	1,250
France	1,170	1,040	322	4,110	587	737	1,320
Germany	1,270	1,410	1,870	6,250	1,240	1,290	2,530
Japan	1,120	1,570	1,390	4,820	1,770	1,720	3,490
Korea, Republic of	1,350	1,340	848	4,940	878	706	1,580
United Kingdom	614	2,290	1,880	7,080	1,920	1,190	3,110
Other	665	309	164	2,640	688	923	1,610
Total	11,600	11,300	9,640	47,300	10,200	10,600	20,900
Grand total	59,400	55,300	48,300	221,000	51,700	51,300	103,000

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)

		2007			2008	
		Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter
Concentrate:						
Ilmenite, f.ob. Australian ports ¹	dollars per metric ton	\$75- \$85	\$75- \$85	\$75- \$85	\$80- \$130	\$84- \$137
Titanium slag, import ²	do.	353- 572	417- 430	418- 457	433- 576	409- 555
Rutile, natural:¹						
Bagged, f.o.b. Australian ports	do.	590- 700	600- 700	650- 700	700- 750	700- 750
Bulk, f.o.b. Australian ports	do.	450- 500	450- 500	475- 500	490- 520	490- 520
Metal:						
Sponge metal, import ²	dollars per pound	7.62- 9.12	7.23- 8.25	6.33- 7.06	5.69- 8.30	5.96- 8.29
Titanium mill products	producer price index ³	299	288	277 ^r	259	244
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) ⁴	dollars per pound	2.10-2.15	1.75-1.80	2.00- 2.05	2.10- 2.15	2.10- 2.15
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti ⁴	do.	4.90- 4.95	3.60- 3.65	3.80- 3.85	3.75- 3.85	3.70- 3.80
Pigment:						
Titanium dioxide pigment, import ²	dollars per metric ton	1,980	1,990	2,010	2,050	2,120
Titanium dioxide pigment	producer price index ³	163	162	160	165 ^r	165

^rRevised. do. Ditto.

¹Source: Industrial Minerals (London).

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

³1982=100. Source: U.S. Department of Labor, Bureau of Labor Statistics.

⁴Source: Platts Metals Week.