

# Mineral Industry Surveys

---

**For information, contact:**

George Bedinger, Titanium Commodity Specialist (acting)  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-6183, Fax: (703) 648-7757  
E-mail: gbedinger@usgs.gov

Elsie D. Isaac (Data)  
Telephone: (703) 648-7950  
Fax: (703) 648-7792  
E-mail: eisaac@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## TITANIUM IN THE FIRST QUARTER 2012

Titanium mill product shipments in the first quarter of 2012 were 9,970 metric tons (t), a slight increase compared with shipments in the previous quarter. Ingot production increased by 3%, and ingot shipments increased by 15%. Receipts of titanium scrap totaled 13,700 t, an increase of 21% compared with receipts from the previous quarter.

In the first quarter, approximately 72% 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, nonaerospace military, medical, other commercial, 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 DEMAND<sup>1</sup>

(Metric tons)

	2011					2012
	1st quarter	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter
<b>Production:</b>						
Sponge	W	W	W	W	W	W
Ingot	14,500	13,800	15,200	16,800	60,300	17,400
Mill products	9,660	9,860	11,300	9,720	40,500	10,000
<b>Exports:</b>						
Waste and scrap	1,240	1,230	1,310	1,380	5,150	2,270
Sponge	45	60	36	116	256	209
Ingot	36	29	29	157	252	317
Other unwrought	59	82	182	599	923	26
Bar, rod, profiles, wire	893	1,000	861	1,300	4,060	1,010
Billet	781	889	938	892	3,500	1,040
Bloom, sheet bar, slab	279	326	390	562	1,560	663
Other wrought	2,960	3,980	4,490	4,160	15,600	3,830
Total	6,290	7,590	8,240	9,170	31,300	9,360
<b>Imports:</b>						
Waste and scrap	2,670	3,960	3,430	3,880	13,900	4,000
Sponge <sup>2</sup>	7,160	7,910	8,730	9,960	33,800	8,900
Ingot	105	196	115	239	654	221
Powder	6	23	21	2	52	3
Other unwrought	43	55	23	86	208	186
Wrought	1,560	1,810	1,460	1,370	6,190	1,650
Castings	(3)	35	12	3	51	5
Other	165	158	151	101	574	136
Total	11,700	14,100	13,900	15,600	55,400	15,100
<b>Stocks, end of period:</b>						
Sponge, industry	7,000	8,490	5,000	10,800	10,800	12,100
Scrap	8,500	10,400	11,300	12,900	12,900	13,500
Ingot	3,380	3,470	3,000	3,850	3,850	3,390
<b>Consumption:</b>						
Sponge	12,600	12,000	12,100	11,700	48,400	8,470
Scrap	6,750	6,940	9,320	7,850	30,900	8,610
Ingot	12,200	12,500	15,800	15,400	55,900	15,300
<b>Shipments:</b>						
Ingot and slab (producer net shipments)	2,950	4,300	4,390	3,770	15,400	4,350
<b>Mill products (net shipments):</b>						
Forging and extrusion billet	4,810	3,280	4,580	4,110	16,800	4,190
Other	5,530	11,100	6,550	5,620	28,700	5,780
Total	10,300	14,300	11,100	9,720	45,500	9,970
Castings	W	W	W	W	W	W
<b>Receipts, scrap:</b>						
Home	W	2,990	4,140	5,200	12,300 <sup>4</sup>	7,290
Purchased	W	7,770	7,290	6,170	21,200 <sup>4</sup>	6,420
Total	6,600	10,800	11,400	11,400	40,200	13,700

W Withheld to avoid disclosing company proprietary data.

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

<sup>2</sup>Estimated by the U.S. Geological Survey.

<sup>3</sup>Less than ½ unit.

<sup>4</sup>Data for second, third, and fourth quarter.

TABLE 2  
U.S. EXPORTS OF TITANIUM PRODUCTS<sup>1</sup>

(Metric tons)

	2011				1st quarter- 4th quarter	2012 1st quarter
	1st quarter	2d quarter	3d quarter	4th quarter		
<b>Metal:</b>						
Waste and scrap	1,240	1,230	1,310	1,380	5,150	2,270
<b>Unwrought:</b>						
Sponge	45	60	36	116	256	209
Ingot	36	29	29	157	252	317
Other unwrought	59	82	182	599	923	26
<b>Wrought:</b>						
Bar, rod, profiles, wire	893	1,000	861	1,300	4,060	1,010
Billet	781	889	938	892	3,500	1,040
Bloom, sheet bar, slab	279	326	390	562	1,560	663
Other	2,960	3,980	4,490	4,160	15,600	3,830
Ferrotitanium and ferrosilicon titanium	665	987	895	664	3,210	760
Ores and concentrates	7,380	7,760	8,540	2,900	26,600	3,460
<b>Pigment:</b>						
80% or more titanium dioxide	177,000	181,000	204,000	179,000	741,000	178,000
Other titanium dioxide	9,880	11,600	10,400	8,110	40,000	9,260
Unfinished titanium dioxide <sup>2</sup>	2,230	1,640	1,830	1,460	7,160	1,230

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

<sup>2</sup>Unmixed and not surface treated.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL<sup>1</sup>

(Metric tons)

	2011				1st quarter– 4th quarter	2012 1st quarter
	1st quarter	2d quarter	3d quarter	4th quarter		
<b>Waste and scrap:</b>						
Canada	188	178	132	240	738	206
France	349	525	447	469	1,790	490
Germany	290	655	492	498	1,930	649
Israel	106	143	173	101	523	102
Italy	63	107	83	77	329	121
Japan	590	612	418	642	2,260	607
Korea, Republic of	84	106	280	185	655	133
Mexico	67	125	82	96	369	104
Singapore	4	65	52	57	179	65
Spain	47	96	38	38	220	24
Taiwan	165	390	114	144	813	136
United Kingdom	436	623	840	918	2,820	915
Other	276 <sup>r</sup>	333 <sup>r</sup>	274 <sup>r</sup>	419 <sup>r</sup>	1,300 <sup>r</sup>	451
<b>Total</b>	<b>2,670</b>	<b>3,960</b>	<b>3,430</b>	<b>3,880</b>	<b>13,900</b>	<b>4,000</b>
<b>Unwrought:</b>						
<b>Sponge:</b>						
China	1,220	886	1,550	2,210	5,860	1,470
Japan	4,150	3,610	3,690	4,620	16,100	4,370
Kazakhstan <sup>c</sup>	1,230	2,730	2,660	2,000	8,610	2,420
Ukraine	409	279	485	775	1,950	440
Other <sup>2</sup>	150 <sup>r</sup>	399 <sup>r</sup>	356 <sup>r</sup>	363 <sup>r</sup>	1,270 <sup>r</sup>	199
<b>Total</b>	<b>7,160</b>	<b>7,910</b>	<b>8,730</b>	<b>9,960</b>	<b>33,800</b>	<b>8,900</b>
<b>Ingot:</b>						
Germany	99	99	48	98	344	59
Russia	3	91	67	141	302	162
Other	2	7	--	--	9	--
<b>Total</b>	<b>105</b>	<b>196</b>	<b>115</b>	<b>239</b>	<b>654</b>	<b>221</b>
Powder	6	23	21	2	52	3
Other	43	55	23	86	208	186
<b>Wrought:</b>						
Bar, rod, profiles, wire	371	519	438	385	1,710	505
Billet	183	259	257	186	885	256
Bloom, sheet bar, slab	5	10	4	11	30	4
Plate, sheet, strip, foil	852	876	588	591	2,910	751
Tube and pipe	88	102	127	124	440	92
Other	62	41	47	67	218	42
<b>Total</b>	<b>1,560</b>	<b>1,810</b>	<b>1,460</b>	<b>1,370</b>	<b>6,190</b>	<b>1,650</b>
<b>Other articles of titanium:</b>						
Castings	(3)	35	12	3	51	5
Other	165	158	151	101	574	136
Ferrotitanium and ferrosilicon titanium	475	635	544	419	2,070	660

<sup>c</sup>Estimated. <sup>r</sup>Revised. -- Zero.

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

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

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM CONCENTRATES<sup>1</sup>

(Metric tons)

	2011					2012
	1st quarter	2d quarter	3d quarter	4th quarter	1st quarter– 4th quarter	1st quarter
<b>Ilmenite:</b>						
Australia	53,400	57,200	77,500	55,600	244,000	99,000
Mozambique	32,100	26,100	25,000	31,000	114,000	32,800
Ukraine	--	10,000	--	--	10,000	--
Other <sup>2</sup>	--	9,340	--	--	9,340	9,750
<b>Total</b>	<b>85,500</b>	<b>103,000</b>	<b>103,000</b>	<b>86,600</b>	<b>377,000</b>	<b>142,000</b>
<b>Titanium slag:</b>						
Canada	21,600	55,800	32,200	81,100	191,000	77,100
South Africa	68,900	80,900	79,000	93,900	323,000	98,500
<b>Total</b>	<b>90,500</b>	<b>137,000</b>	<b>111,000</b>	<b>175,000</b>	<b>513,000</b>	<b>176,000</b>
<b>Rutile:</b>						
Australia	35,300	20,000	34,300	16,100	106,000	49,500
South Africa	23,200	47,900	22,900	39,000	133,000	24,700
Other <sup>2</sup>	67	9,020	613 <sup>r</sup>	13,900 <sup>r</sup>	23,600 <sup>r</sup>	540
<b>Total</b>	<b>58,500</b>	<b>76,900</b>	<b>57,800</b>	<b>69,000</b>	<b>262,000</b>	<b>74,800</b>
<b>Synthetic rutile:</b>						
Australia	18,500	50,500	26,800	16,000	112,000	40,100
Other <sup>2</sup>	92	704	1,260	4,900	6,960	3,040
<b>Total</b>	<b>18,600</b>	<b>51,200</b>	<b>28,100</b>	<b>20,900</b>	<b>119,000</b>	<b>43,200</b>
Titaniferous iron ore, Canada <sup>2</sup>	--	42	21	33	96	184

<sup>r</sup>Revised. -- Zero.

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

<sup>2</sup>All 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 PIGMENT<sup>1</sup>

(Metric tons)

	2011				1st quarter– 4th quarter	2012 1st quarter
	1st quarter	2d quarter	3d quarter	4th quarter		
<b>80% or more titanium dioxide:</b>						
Canada	20,700	20,600	21,100	16,600	79,000	20,900
China	2,460	3,880	1,270	2,670	10,300	4,300
Finland	1,790	1,750	1,470	1,790	6,790	1,130
France	1,440	1,000	1,140	1,320	4,910	1,660
Germany	852	1,710	2,160	1,730	6,450	1,300
Italy	970	710	933	850	3,460	836
Japan	793	1,200	1,190	997	4,180	899
Ukraine	3,300	3,580	2,540	2,270	11,700	2,850
Other	3,590 <sup>r</sup>	3,660 <sup>r</sup>	3,540 <sup>r</sup>	2,890 <sup>r</sup>	13,700 <sup>r</sup>	2,610
Total	35,900	38,100	35,400	31,100	140,000	36,500
<b>Other titanium dioxide:</b>						
Canada	1,850	2,400	2,390	2,170	8,820	2,280
China	253	167	309	378	1,110	306
Germany	262	216	155	33	666	150
Japan	175	198	126	52	552	178
Other	263	290	235	241	1,030	356
Total	2,800	3,280	3,210	2,880	12,200	3,270
<b>Unfinished titanium dioxide:<sup>2</sup></b>						
China	5,170	6,330	7,000	5,710	24,200	4,400
Czech Republic	689	625	627	516	2,460	588
Finland	553	842	732	789	2,910	576
France	1,170	1,150	1,840	1,560	5,720	1,200
Germany	1,320	1,090	1,090	770	4,270	824
Italy	970	1,010	875	268	3,120	669
Korea, Republic of	927	858	406	436	2,630	657
Other	749	679	327	671	2,430	1,470
Total	11,500	12,600	12,900	10,700	47,700	10,400
Grand total	50,200	53,900	51,500	44,700	200,000	50,200

<sup>r</sup>Revised. -- Zero.

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

<sup>2</sup>Unmixed and not surface treated.

Source: U.S. Census Bureau.

TABLE 6  
PRICES FOR TITANIUM MATERIALS

(End of period)

		2011				2012
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter
<b>Concentrate:</b>						
Ilmenite, f.o.b. Australian ports <sup>1</sup>	dollars per metric ton	65-85	130-150	140-250	140-250	250-350
Titanium slag, import <sup>2</sup>	do.	480-495	449-498	320-475	468-494	682-948
<b>Rutile, natural:<sup>1</sup></b>						
Bagged, f.o.b. Australian ports	do.	775-820	950-1,180	1,348-1,600	1,348-1,600	2,480-2,700
Bulk, f.o.b. Australian ports	do.	625-700	750-875	1,000-1,120	1,300-1,400	1,990-2,050
<b>Metal:</b>						
Sponge metal, Japan, import <sup>2</sup>	dollars per pound	5.81	5.84	5.68	5.74	6.84
Titanium mill products	producer price index <sup>3</sup>	206	200	209	202 <sup>f</sup>	197
Titanium scrap, turnings, unprocessed (Ti-6Al-4V) <sup>4</sup>	dollars per pound	2.50-2.65	2.75-2.85	2.60-2.65	2.00-2.20	2.15-2.30
Ferrotitanium, 70% (max. 4.5% Al) per pound Ti <sup>4</sup>	do.	3.85-3.95	4.30-4.45	4.10-4.20	3.45-3.55	3.60-3.65
<b>Pigment:</b>						
Titanium dioxide pigment, import <sup>2</sup>	dollars per metric ton	2,647	2,856	3,133	3,530	3,670
Titanium dioxide pigment	producer price index <sup>3</sup>	213	221	251	268 <sup>f</sup>	291

<sup>f</sup>Revised. do. Ditto.

<sup>1</sup>Source: Industrial Minerals (London).

<sup>2</sup>Unit value based on landed-duty-paid U.S. imports for consumption.

<sup>3</sup>June 1982=100. Source: U.S. Department of Labor, Bureau of Labor Statistics.

<sup>4</sup>Source: Platts Metals Week.