

# Mineral Industry Surveys

## For information, contact:

Emily K. Schnebele, Silicon Commodity Specialist  
National Minerals Information Center  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4945, Fax: (703) 648-7757  
Email: [eschnebele@usgs.gov](mailto:eschnebele@usgs.gov)

Molly L. Reid (Data)  
Telephone: (703) 648-7942  
Fax: (703) 648-7975  
Email: [mlreid@usgs.gov](mailto:mlreid@usgs.gov)

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

## SILICON IN JUNE 2017

Domestic production of silicon materials was 44,300 metric tons (t) in June 2017, a 5% decrease from May 2017 production and slightly more than June 2016 production (fig. 1, table 1). Net shipments were 41,400 t, a 36% increase from shipments in May 2017 and a 39% increase from shipments in June 2016. Total production and net shipments during the first 6 months of 2017 were essentially unchanged and 5% more, respectively, than those during the same period in 2016 (table 1).

Ending stocks were 29,800 t in June 2017, 34% less than those in May 2017 and 35% less than those in June 2016 (table 1). Adjustments in stocks included in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other alloys.

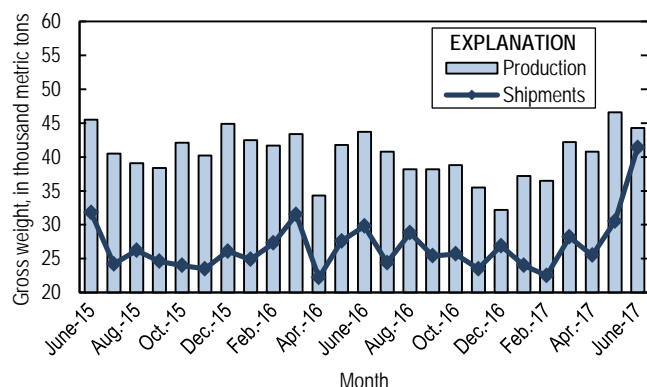


Figure 1. Monthly domestic production of total silicon materials and net shipments from June 2015 through June 2017 (may include revisions to previously published data). Source: U.S. Geological Survey.

The average U.S. spot price for silicon metal was 113.63 cents per pound in June 2017, a 5% increase from the average price in May 2017, and a 28% increase from the June 2016

price. The average U.S. spot prices for ferrosilicon, 50% and 75% grades, were the same and essentially unchanged, respectively, than the average prices in May 2017 and were 11% and 13% greater, respectively, than their average prices in June 2016 (fig. 2).

All comparative statistics were calculated based on unrounded, gross-weight figures.

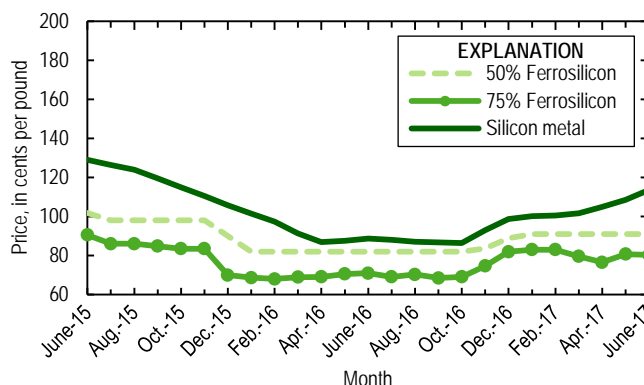


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from June 2015 through June 2017. Source: CRU Ryan's Notes and Platts Metals Week.

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TABLE 1  
PRODUCTION, SHIPMENTS, AND STOCKS OF SILICON ALLOYS  
AND METAL IN THE UNITED STATES<sup>1,2</sup>

(Metric tons, gross weight)

	Gross production <sup>3</sup>	Net shipments	Producers' stocks, end of period
2016: <sup>p</sup>			
January–December	471,000	318,000	37,100
January–June	247,000	163,000	45,600
June	43,700	29,800	45,600
July	40,800	24,400	48,700
August	38,200	28,800	42,800
September	38,200	25,400	41,400
October	38,800	25,700	42,000
November	35,500	23,500	41,900
December	32,200	26,900	37,100
2017:			
January	37,200	24,000	38,400
February	36,500	22,500	40,800
March	42,200	28,200	41,800
April	40,800	25,500	45,200
May	46,600	30,500	45,400
June	44,300	41,400	29,800
January–June	248,000	172,000	29,800

<sup>p</sup>Preliminary.

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

<sup>2</sup>Includes ferrosilicon, miscellaneous silicon alloys, and silicon metal, excluding semiconductor and solar grades, except where noted.

<sup>3</sup>Ferrosilicon production includes material consumed in the production of miscellaneous silicon alloys.

TABLE 2  
PRICES FOR FERROSILICON AND SILICON METAL IN JUNE 2017

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	89.00	XX	93.00	89.00–91.00–93.00
75% ferrosilicon <sup>2</sup>	do.	73.00	80.25	84.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	109.00	113.63	117.00	XX

do. Ditto. XX Not applicable.

<sup>1</sup>CRU Ryan's Notes, North American transaction price, duty paid, f.o.b. Pittsburgh, producing plant or Chicago/Pittsburgh warehouse. Average price reported for price range.

<sup>2</sup>Platts Metals Week, in U.S. warehouse, U.S. origin and imported material. Average prices reported for all transactions during the month.

<sup>3</sup>Platts Metals Week, duty paid, delivered Midwest, U.S. spot and imported 553 grade silicon metal (minimum 98.50% silicon). Average price reported for all transactions during the month.

TABLE 3  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2017<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	--	--	--	289	160	\$128,000
Brazil	--	--	--	37	22	68,200
Canada	719	432	\$1,060,000	1,710	1,030	2,390,000
Germany	--	--	--	8	5	15,100
Japan	--	--	--	20	12	33,200
Mexico	169	102	401,000	1,790	1,070	3,560,000
Netherlands	--	--	--	567	408	461,000
South Africa	237	142	104,000	237	142	104,000
Turkey	--	--	--	12	7	18,500
United Kingdom	--	--	--	20	13	18,000
Other (2 countries)	--	--	--	3	2	8,670
Total	1,130	676	1,570,000	4,690	2,870	6,810,000
Other ferrosilicon:						
Belgium	54	25	25,300	432	196	413,000
Brazil	38	19	76,000	184	89	342,000
Canada	44	22	17,800	823	412	433,000
France	--	--	--	100	46	159,000
Japan	61	30	99,700	98	49	163,000
Korea, Republic of	40	18	43,200	265	117	284,000
Mexico	171	86	356,000	2,160	1,010	4,000,000
Poland	17	9	39,500	75	37	158,000
Turkey	--	--	--	61	31	90,700
United Kingdom	20	9	30,300	366	170	584,000
Other (3 countries)	--	--	--	86	34	135,000
Total	444	217	688,000	4,650	2,190	6,770,000
Total ferrosilicon	1,570	893	2,250,000	9,340	5,060	13,600,000
Metal:						
More than 99.99% silicon:						
China	326	326	5,600,000	2,550	2,550	38,100,000
Germany	313	313	8,860,000	2,220	2,220	61,800,000
Hong Kong	110	110	409,000	1,010	1,010	8,320,000
Japan	1,200	1,200	34,200,000	8,450	8,450	264,000,000
Korea, Republic of	409	409	14,800,000	2,660	2,660	86,500,000
Malaysia	17	17	2,660,000	397	397	22,000,000
Norway	2	2	25,500	47	47	382,000
Philippines	--	--	--	83	83	1,210,000
Singapore	113	113	1,570,000	849	849	19,200,000
Taiwan	1,220	1,220	14,300,000	10,200	10,200	144,000,000
Other (33 countries)	9	9	894,000	285	285	9,600,000
Total	3,720	3,720	83,300,000	28,700	28,700	656,000,000
99.00%–99.99% silicon:						
Belgium	79	79	85,500	79	79	85,500
China	--	--	--	203	203	206,000
Israel	--	--	--	26	26	37,200
Japan	--	--	--	12	12	17,000
Mexico	1	1	2,970	8	8	23,900
Netherlands	--	--	--	461	457	348,000
Peru	--	--	--	10	10	14,400
Spain	--	--	--	5	5	7,500

See footnotes at end of table.

TABLE 3—Continued  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2017<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Thailand	--	--	--	12	12	\$17,500
United Kingdom	61	60	\$66,200	342	339	367,000
Other (2 countries)	--	--	--	5	5	9,960
Total	141	140	155,000	1,160	1,160	1,130,000
Other silicon:						
Belgium	19	19	21,400	528	515	600,000
Canada	42	41	117,000	252	245	529,000
China	9	9	16,500	53	52	75,200
Germany	--	--	--	13	13	26,700
Hong Kong	--	--	--	10	9	98,900
Korea, Republic of	--	--	--	7	7	9,660
Mexico	13	13	30,800	38	37	96,300
Netherlands	--	--	--	157	154	119,000
South Africa	22	21	28,600	58	57	113,000
United Kingdom	81	79	139,000	149	145	284,000
Other (5 countries)	1	1	9,690	5	5	39,600
Total	187	182	362,000	1,270	1,240	1,990,000
Total silicon metal	4,050	4,040	83,800,000	31,100	31,100	659,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–June" quantities (gross weight) of the leading countries.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2017<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
Brazil	66	50	\$66,000	1,480	1,010	\$1,840,000
China	--	--	--	60	45	67,300
France	18	10	46,700	234	140	635,000
South Africa	18	13	27,000	177	123	343,000
Total	102	72	140,000	1,950	1,310	2,890,000
55%–80% silicon, other:						
Brazil	162	120	172,000	2,790	2,100	3,090,000
Canada	992	722	2,160,000	6,770	4,930	14,300,000
China	2,890	2,170	2,960,000	4,590	3,460	4,820,000
France	90	62	268,000	668	452	1,900,000
Iceland	1,400	1,100	1,620,000	8,960	6,900	9,840,000
Kazakhstan	2,390	1,810	2,640,000	11,000	8,390	12,800,000
Malaysia	100	75	115,000	4,590	3,410	4,770,000
Norway	--	--	--	1,010	763	1,120,000
Russia	676	508	783,000	25,500	19,600	27,600,000
South Africa	216	140	603,000	560	392	1,430,000
Other (10 countries)	123	88	401,000	1,490	1,090	3,410,000
Total	9,030	6,800	11,700,000	67,900	51,400	85,000,000
80%–90% ferrosilicon, Germany	14	11	51,500	27	22	68,500
More than 90% ferrosilicon:						
Brazil	--	--	--	1,440	1,330	453,000
China	--	--	--	52	47	15,800
Total	--	--	--	1,490	1,370	468,000
Magnesium ferrosilicon:						
Argentina	59	23	74,300	309	122	357,000
Canada	1,130	518	2,000,000	6,540	2,980	11,700,000
China	40	19	56,000	141	66	185,000
France	--	--	--	10	5	42,500
Germany	--	--	--	73	30	201,000
India	368	144	342,000	1,140	382	1,330,000
Norway	--	--	--	55	26	96,700
Total	1,600	704	2,470,000	8,270	3,610	13,900,000
Other ferrosilicon:						
Canada	1,930	649	1,400,000	9,260	3,200	7,500,000
China	78	34	137,000	5,400	945	1,650,000
Germany	--	--	--	42	17	136,000
Japan	--	--	--	7	3	11,600
Russia	5	2	7,050	75	36	118,000
Slovakia	20	3	29,100	97	20	133,000
South Africa	--	--	--	11	5	15,500
Trinidad and Tobago	--	--	--	89	14	34,800
Total	2,030	688	1,570,000	15,000	4,240	9,610,000
Total ferrosilicon	12,800	8,280	16,000,000	94,600	62,000	112,000,000
Metal:						
More than 99.99% silicon:						
Brazil	799	799	1,910,000	5,140	5,140	12,300,000
China	5	5	888,000	48	48	5,350,000
Denmark	(4)	(4)	132,000	1	1	332,000
Germany	73	73	3,620,000	340	340	18,900,000

See footnotes at end of table.

TABLE 4—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2017<sup>1, 2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
More than 99.99% silicon:						
Japan	27	27	\$1,090,000	106	106	\$5,300,000
Norway	19	19	80,200	57	57	236,000
Spain	(4)	(4)	4,050	2	2	18,000
Sweden	--	--	--	1	1	37,100
Taiwan	53	53	1,500,000	250	250	6,770,000
Ukraine	2	2	127,000	3	3	179,000
Other (5 countries)	(4)	(4)	45,300	(4)	(4)	119,000
Total	980	980	9,390,000	5,950	5,950	49,600,000
99.00%–99.99% silicon:						
Australia	1,390	1,380	2,920,000	9,990	9,920	20,900,000
Bosnia and Herzegovina	--	--	--	983	978	1,620,000
Brazil	726	720	1,840,000	8,170	8,110	18,600,000
Canada	1,750	1,730	4,990,000	12,000	11,900	31,700,000
France	--	--	--	626	620	985,000
Kazakhstan	2,240	2,220	4,100,000	5,990	5,940	10,800,000
Malaysia	--	--	--	114	113	177,000
Norway	600	597	1,340,000	3,030	3,010	6,810,000
South Africa	--	--	--	550	545	1,040,000
Thailand	504	499	996,000	1,820	1,800	3,390,000
Other (4 countries)	15	15	26,800	133	132	236,000
Total	7,220	7,170	16,200,000	43,400	43,100	96,400,000
Other silicon:						
Australia	79	76	165,000	1,260	1,220	2,370,000
Brazil	702	693	1,820,000	6,360	6,250	14,400,000
Canada	--	--	--	753	734	1,880,000
China	--	--	--	108	104	130,000
Iceland	319	312	533,000	703	690	1,140,000
Japan	77	74	92,500	216	207	299,000
Kazakhstan	500	488	858,000	1,060	1,040	1,830,000
Norway	11	11	12,500	3,870	3,770	6,180,000
South Africa	--	--	--	423	412	624,000
United Kingdom	19	18	40,000	123	120	252,000
Other (4 countries)	20	19	22,000	91	87	161,000
Total	1,730	1,690	3,550,000	15,000	14,600	29,300,000
Total silicon metal	9,930	9,840	29,100,000	64,400	63,700	175,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–June" quantities (gross weight) of the leading countries.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>May include revisions to previously published data.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.