

# Mineral Industry Surveys

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## SILICON IN JUNE 2018

Domestic production of silicon materials was 48,100 metric tons (t) in June 2018, a slight decrease from May 2018 production and 9% more than June 2017 production (fig. 1, table 1). Net shipments were 30,000 t, a slight increase from shipments in May 2018 and a 29% decrease from shipments in June 2017. Total production and net shipments during the first 6 months of 2018 were 14% and 4% more, respectively, than those during the same period in 2017 (table 1).

Ending stocks were 33,000 t in June 2018, slightly more than stocks in May 2018 and 14% more than those in June 2017 (table 1). Adjustments in stocks included in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other alloys. All comparative statistics were calculated based on unrounded, gross-weight figures.

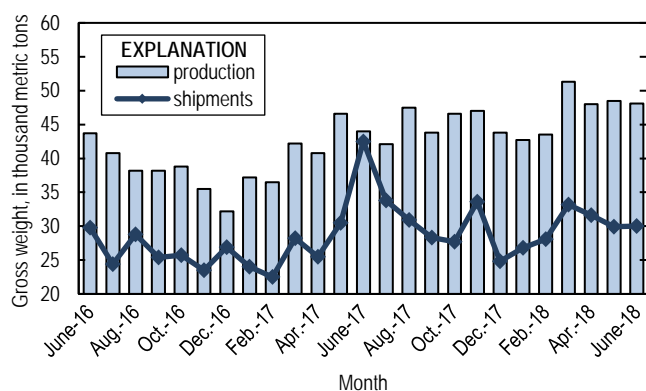


Figure 1. Monthly domestic production of total silicon materials and net shipments from June 2016 through June 2018 (may include revisions to previously published data).

## Prices

The average U.S. spot price for silicon metal was 136.25 cents per pound in June 2018, slightly less than the average price in May 2018, and 20% more than the June 2017 price. The average U.S. spot prices for ferrosilicon, 50% and 75% grades, were the same as and slightly greater, respectively, than the average prices in May 2018 and were 15% and 35% greater, respectively, than their average prices in June 2017 (fig. 2).

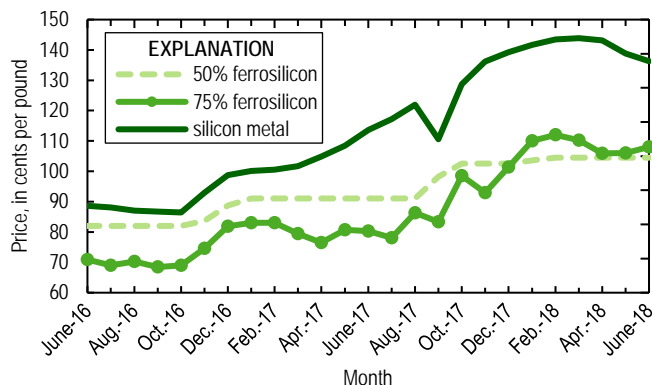


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from June 2016 through June 2018. Source: CRU Group and S&P Global Platts.

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TABLE 1  
PRODUCTION, SHIPMENTS, AND STOCKS OF SILICON ALLOYS  
AND METAL IN THE UNITED STATES<sup>1, 2, 3</sup>

(Metric tons, gross weight)

	Gross production <sup>4</sup>	Net shipments	Producers' stocks, end of period
2017:			
January–December	518,000	352,000	33,500
January–June	247,000	173,000 <sup>r</sup>	28,900 <sup>r</sup>
June	44,000	42,500	28,900
July	42,100	33,800	21,400
August	47,500	30,900	21,000
September	43,800	28,300	22,200
October	46,600	27,700	25,900
November	47,000	33,600	27,600
December	43,800	24,800	33,500
2018:			
January	42,700	26,800	29,100
February	43,500	28,100	31,400
March	51,300	33,200	31,200
April	48,000	31,600	31,400
May	48,500	29,900	32,500
June	48,100	30,000	33,000
January–June	282,000	180,000	33,000

<sup>r</sup>Revised.

<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>Includes USGS estimates.

<sup>4</sup>Ferrosilicon production includes material consumed in the production of miscellaneous silicon alloys.

TABLE 2  
PRICES FOR FERROSILICON AND SILICON METAL IN JUNE 2018

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	102.00	XX	107.00	102.00–104.50–107.00
75% ferrosilicon <sup>2</sup>	do.	105.00	108.00	109.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	135.00	136.25	139.00	XX

do. Ditto. XX Not applicable.

<sup>1</sup>CRU Group transaction price, duty paid, f.o.b. Pittsburgh, producing plant or Chicago/Pittsburgh warehouse. Average price reported for price range.

<sup>2</sup>S&P Global Platts, in U.S. warehouse, U.S. origin and imported material. Average price reported for all transactions during the month.

<sup>3</sup>S&P Global Platts, 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 2018<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Brazil	--	--	--	12	7	\$18,500
Canada	605	363	\$1,020,000	2,320	1,390	3,870,000
Iceland	--	--	--	43	26	62,400
India	--	--	--	320	233	380,000
Malaysia	--	--	--	6	4	10,000
Mexico	372	225	773,000	1,980	1,250	4,110,000
Netherlands	--	--	--	964	578	1,160,000
Russia	--	--	--	555	333	233,000
Total	977	588	1,790,000	6,200	3,820	9,850,000
Other ferrosilicon:						
Belgium	40	18	62,000	312	140	406,000
Brazil	--	--	--	234	97	456,000
Canada	132	66	57,800	744	372	383,000
Finland	--	--	--	41	21	65,400
France	20	9	34,900	120	55	213,000
Korea, Republic of	196	86	235,000	454	198	529,000
Mexico	386	122	671,000	1,280	550	2,600,000
Switzerland	--	--	--	40	9	70,000
Turkey	20	10	33,800	223	107	373,000
United Kingdom	80	35	128,000	697	313	1,140,000
Other (10 countries)	4	2	5,630	182	82	310,000
Total	878	349	1,230,000	4,330	1,940	6,540,000
Total ferrosilicon	1,860	937	3,020,000	10,500	5,770	16,400,000
Metal:						
More than 99.99% silicon:						
China	170	170	4,680,000	1,780	1,780	27,900,000
Germany	18	18	52,100	192	192	3,840,000
Hong Kong	100	100	880,000	806	806	6,770,000
Japan	991	991	42,000,000	6,370	6,370	223,000,000
Korea, Republic of	289	289	13,700,000	370	370	23,300,000
Norway	60	60	900,000	587	587	6,570,000
Singapore	2	2	46,300	206	206	2,900,000
Taiwan	350	350	5,180,000	8,050	8,050	92,000,000
United Kingdom	40	40	765,000	202	202	5,460,000
Vietnam	--	--	--	395	395	9,220,000
Other (37 countries)	86	86	5,480,000	305	305	26,400,000
Total	2,110	2,110	73,700,000	19,300	19,300	428,000,000
99.00%–99.99% silicon:						
Belgium	120	119	133,000	275	273	312,000
France	--	--	--	9	9	12,500
Germany	25	25	35,100	438	434	437,000
India	--	--	--	16	16	44,600
Mexico	1	1	3,110	10	10	27,300
Netherlands	--	--	--	81	80	127,000
Oman	12	12	16,600	12	12	16,600
Peru	--	--	--	9	9	12,600
Spain	--	--	--	16	16	33,600
United Kingdom	103	102	172,000	488	479	726,000
Other (1 country)	--	--	--	1	1	3,460
Total	261	259	360,000	1,350	1,340	1,750,000

See footnotes at end of table.

TABLE 3—Continued  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2018<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
Other silicon:						
Belgium	1	1	\$14,900	225	218	\$322,000
Canada	19	19	53,000	176	171	551,000
China	8	8	15,500	99	96	135,000
France	--	--	--	140	137	151,000
Germany	--	--	--	17	16	36,500
Korea, Republic of	34	33	105,000	114	111	334,000
Netherlands	40	39	33,800	324	315	270,000
South Africa	22	22	29,300	29	28	41,700
Sweden	--	--	--	221	215	325,000
United Kingdom	21	21	52,400	47	46	146,000
Other (10 countries)	2	2	9,650	62	60	500,000
Total	148	144	313,000	1,450	1,410	2,810,000
Total silicon metal	2,520	2,510	74,300,000	22,100	22,000	432,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the 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 2018<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
Brazil	48	36	\$60,000	183	137	\$239,000
China	91	64	140,000	244	172	443,000
France	36	22	104,000	334	200	965,000
Hong Kong	--	--	--	60	45	94,400
Russia	--	--	--	10,000	7,620	14,400,000
South Africa	108	74	232,000	396	277	827,000
Total	283	196	537,000	11,200	8,450	17,000,000
55%–80% silicon, other:						
Brazil	--	--	--	3,370	2,550	5,230,000
Canada	982	714	2,360,000	7,070	5,130	16,000,000
China	2,300	1,740	3,470,000	6,170	4,650	8,860,000
Egypt	--	--	--	500	372	679,000
France	216	146	546,000	960	678	2,580,000
Iceland	83	64	144,000	3,400	2,690	4,760,000
Kazakhstan	1,510	1,150	2,490,000	5,540	4,230	9,660,000
Malaysia	2,770	2,060	2,760,000	4,300	3,200	5,050,000
Russia	17,500	13,300	25,800,000	42,900	32,700	64,500,000
South Africa	180	138	310,000	1,280	936	2,700,000
Other (8 countries)	376	266	1,050,000	1,700	1,240	4,370,000
Total	25,900	19,600	38,900,000	77,200	58,400	124,000,000
80%–90% ferrosilicon:						
Argentina	--	--	--	22	18	34,500
Canada	--	--	--	1	1	2,700
Germany	--	--	--	137	114	160,000
Total	--	--	--	160	133	198,000
More than 90% ferrosilicon, Brazil	--	--	--	2,280	2,100	1,130,000
Magnesium ferrosilicon:						
Canada	971	446	1,810,000	6,910	3,160	12,700,000
China	31	15	30,200	79	39	128,000
Germany	--	--	--	32	10	103,000
India	203	98	176,000	1,360	498	1,560,000
Norway	54	26	109,000	162	78	326,000
Total	1,260	585	2,130,000	8,530	3,790	14,900,000
Other ferrosilicon:						
Argentina	--	--	--	40	18	39,900
Canada	927	332	1,090,000	5,090	1,760	6,300,000
China	16	7	27,000	543	243	889,000
France	39	19	119,000	55	26	147,000
Germany	2	1	10,400	12	6	55,100
Italy	20	3	32,500	20	3	32,500
Russia	26	13	52,000	184	90	336,000
Slovakia	--	--	--	77	25	126,000
Spain	--	--	--	206	91	354,000
United Kingdom	--	--	--	9	4	25,400
Total	1,030	375	1,330,000	6,240	2,270	8,300,000
Total ferrosilicon	28,500	20,700	42,900,000	106,000	75,100	166,000,000
Metal:						
More than 99.99% silicon:						
China	2	2	988,000	44	44	7,750,000
Denmark	(4)	(4)	71,400	1	1	469,000
Finland	1	1	61,600	3	3	438,000
Germany	62	62	3,900,000	409	409	26,400,000

See footnotes at end of table.

TABLE 4—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN JUNE 2018<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
More than 99.99% silicon:						
Japan	12	12	\$793,000	86	86	\$5,410,000
Korea, Republic of	1	1	7,870	1	1	175,000
Spain	--	--	--	1	1	8,200
Sweden	--	--	--	1	1	31,000
Taiwan	47	47	1,760,000	300	300	10,600,000
Ukraine	1	1	42,900	4	4	291,000
Other (7 countries)	--	--	--	(4)	(4)	51,500
Total	125	125	7,620,000	849	849	51,700,000
99.00%–99.99% silicon:						
Bosnia and Herzegovina	1,350	1,350	3,520,000	5,260	5,230	13,700,000
Brazil	1,510	1,500	4,530,000	12,500	12,400	35,900,000
Canada	2,060	2,040	6,210,000	12,400	12,300	37,100,000
Germany	--	--	--	40	40	127,000
Iceland	100	99	190,000	100	99	190,000
Kazakhstan	304	301	636,000	421	417	869,000
Laos	140	139	370,000	1,970	1,950	4,830,000
Norway	1,140	1,130	3,290,000	8,310	8,260	24,200,000
Thailand	48	48	134,000	9,450	9,400	27,500,000
United Kingdom	--	--	--	19	19	45,100
Other (1 country)	17	17	52,700	17	17	52,700
Total	6,670	6,620	18,900,000	50,500	50,200	144,000,000
Other silicon:						
Brazil	590	581	1,580,000	3,370	3,330	9,400,000
Canada	19	19	68,700	58	57	151,000
Germany	--	--	--	67	65	97,700
Iceland	--	--	--	119	116	175,000
Japan	(4)	(4)	3,080	314	302	386,000
Kazakhstan	85	84	171,000	87	86	175,000
Laos	95	91	242,000	271	260	691,000
Norway	606	582	1,540,000	4,350	4,230	10,300,000
Sweden	--	--	--	135	129	147,000
Thailand	--	--	--	336	323	868,000
Other (6 countries)	(4)	(4)	5,000	109	104	174,000
Total	1,390	1,360	3,610,000	9,220	9,000	22,500,000
Total silicon metal	8,190	8,100	30,200,000	60,600	60,000	219,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the 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.