

Mineral Industry Surveys

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SILICON IN DECEMBER 2018

Domestic production of silicon materials was 42,000 metric tons (t) in December 2018, a 10% decrease from November 2018 production and 4% less than December 2017 production (fig. 1, table 1). Net shipments were 30,600 t, 3% less than shipments in November 2018 and 23% more than shipments in December 2017. Total production and net shipments during 2018 were 4% more and 3% more, respectively, than those during 2017 (table 1).

Ending stocks were 24,000 t in December 2018, 4% less than stocks in November 2018 and 28% less than those in December 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.

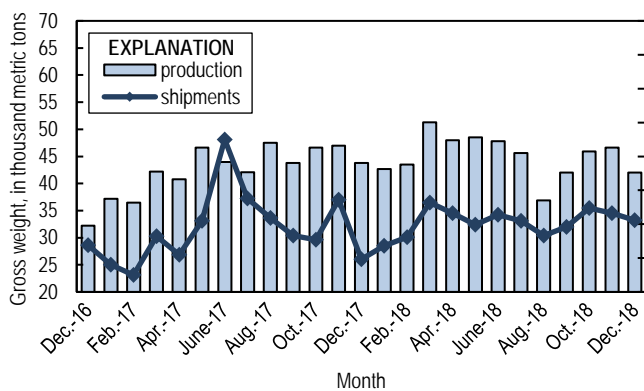


Figure 1. Monthly domestic production of total silicon materials and net shipments from December 2016 through December 2018 (may include revisions to previously published data).

Prices

The average U.S. spot price for silicon metal was 118.38 cents per pound in December 2018, slightly less than the average price in November 2018 and 15% less than that in December 2017. The average U.S. spot prices for ferrosilicon, 50% and 75% grades, were slightly less and essentially unchanged, respectively, from the average prices in November 2018 and were essentially unchanged and 3% greater, respectively, than their average prices in December 2017 (fig. 2).

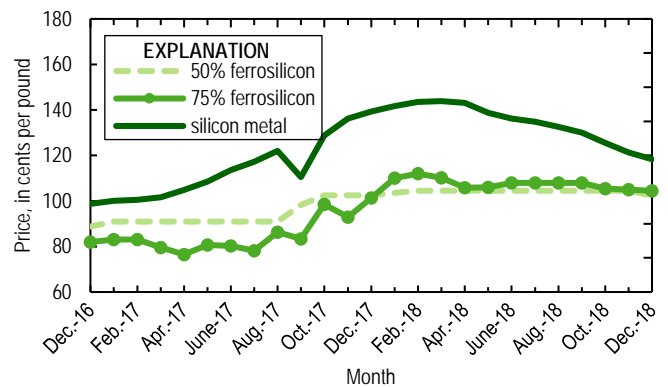


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from December 2016 through December 2018. Source: CRU Group and S&P Global Platts.

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TABLE 1
 PRODUCTION, SHIPMENTS, AND STOCKS OF SILICON ALLOYS
 AND METAL IN THE UNITED STATES^{1,2}

(Metric tons, gross weight)

	Gross production ³	Net shipments	Producers' stocks, end of period
2017:			
January–December	518,000 ^r	352,000 ^r	33,500 ^r
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	47,800	31,400	32,000
July	45,600	30,500	31,400
August	36,900	28,300	25,800
September	42,000	29,600	24,900
October	45,900	32,400	24,400
November	46,600 ^r	31,600 ^r	24,900
December	42,000	30,600	24,000
January–December	541,000	364,000	24,000

^rRevised.

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

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

³Ferrosilicon production includes material consumed in the production of miscellaneous silicon alloys.

TABLE 2
PRICES FOR FERROSILICON AND SILICON METAL IN DECEMBER 2018

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon ¹	cents per pound of contained silicon	101.00	XX	103.00	101.13–102.31–103.50
75% ferrosilicon ²	do.	103.00	104.38	106.00	XX
Silicon metal, 553 grade ³	cents per pound	117.00	118.38	121.00	XX

do. Ditto. XX Not applicable.

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

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

³S&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 2018^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	December			January–December ³		
	Gross weight	Contained weight	Value	Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Brazil	--	--	--	110	66	\$158,000
Canada	316	189	\$413,000	5,230	3,140	8,250,000
France	54	32	49,200	163	98	185,000
Germany	--	--	--	305	183	303,000
India	--	--	--	320	233	380,000
Mexico	126	76	267,000	2,940	1,830	6,130,000
Netherlands	60	36	72,700	1,740	1,040	1,820,000
Russia	--	--	--	555	333	233,000
Spain	20	12	24,200	200	120	242,000
United Kingdom	100	60	121,000	652	419	846,000
Other [9 countries and (or) localities]	4	3	9,940	148	89	252,000
Total	679	408	957,000	12,400	7,560	18,800,000
Other ferrosilicon:						
Belgium	94	43	99,800	526	243	691,000
Brazil	59	29	114,000	576	268	1,060,000
Canada	11	6	14,500	1,060	530	524,000
France	--	--	--	398	182	568,000
Korea, Republic of	120	52	145,000	934	406	1,080,000
Mexico	193	94	406,000	2,720	1,260	5,660,000
Poland	--	--	--	80	40	158,000
Spain	--	--	--	329	165	351,000
Turkey	20	9	35,600	303	143	515,000
United Kingdom	20	8	36,400	1,360	615	2,160,000
Other [12 countries and (or) localities]	60	27	99,000	343	148	547,000
Total	577	268	950,000	8,630	4,000	13,300,000
Total ferrosilicon	1,260	676	1,910,000	21,000	11,600	32,100,000
Metal:						
More than 99.99% silicon:						
China	960	960	8,230,000	5,270	5,270	69,500,000
Germany	432	432	5,290,000	1,340	1,340	19,500,000
Hong Kong	96	96	523,000	1,460	1,460	11,300,000
Japan	2,790	2,790	119,000,000	14,200	14,200	556,000,000
Korea, Republic of	755	755	34,800,000	2,310	2,310	101,000,000
Malaysia	13	13	2,010,000	252	252	33,900,000
Norway	124	124	1,410,000	1,090	1,090	13,300,000
Taiwan	404	404	8,550,000	11,700	11,700	156,000,000
United Kingdom	22	22	660,000	828	828	10,300,000
Vietnam	227	227	4,100,000	1,350	1,350	26,600,000
Other [46 countries and (or) localities]	115	115	1,390,000	779	779	19,500,000
Total	5,940	5,940	186,000,000	40,500	40,500	1,020,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	275	273	312,000
Germany	--	--	--	463	459	472,000
India	2	2	3,330	36	36	96,300
Mexico	3	3	8,070	21	21	57,600
Netherlands	--	--	--	182	181	296,000
Oman	--	--	--	12	12	16,600
Peru	--	--	--	9	9	12,600
Spain	--	--	--	16	16	33,600
Thailand	18	(4)	53,500	18	(4)	53,500
United Kingdom	--	--	--	590	580	896,000

See footnotes at end of table.

TABLE 3—Continued
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN 2018^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	December			January–December ³		
	Gross weight	Contained weight	Value	Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Other [3 countries and (or) localities]	--	--	--	12	12	\$19,600
Total	24	5	\$64,900	1,640	1,600	2,270,000
Other silicon:						
Belgium	1	1	10,900	285	277	459,000
Canada	23	22	44,000	343	333	1,000,000
China	13	12	16,700	145	141	200,000
France	--	--	--	140	137	151,000
Germany	--	--	--	76	73	104,000
Korea, Republic of	--	--	--	146	142	406,000
Netherlands	--	--	--	863	838	816,000
South Africa	--	--	--	74	72	106,000
Sweden	27	26	35,300	248	241	361,000
United Kingdom	--	--	--	137	133	345,000
Other [13 countries and (or) localities]	2	2	16,300	82	80	601,000
Total	64	63	123,000	2,540	2,470	4,550,000
Total silicon metal	6,020	6,000	186,000,000	44,700	44,600	1,020,000,000

-- Zero.

¹Presentation of monthly data is based on the quantities (gross weight) of the leading countries and (or) localities.

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

³May include revisions to previously published data.

⁴Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN 2018^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	December			January–December ³		
	Gross weight	Contained weight	Value	Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
Brazil	87	65	\$127,000	356	267	\$486,000
China	--	--	--	540	384	886,000
France	72	47	177,000	663	408	1,850,000
Germany	--	--	--	4	3	19,400
Hong Kong	--	--	--	60	45	94,400
Russia	--	--	--	11,800	9,030	16,800,000
Slovakia	--	--	--	1	(4)	6,560
South Africa	36	23	81,800	720	494	1,500,000
Total	195	135	385,000	14,100	10,600	21,600,000
55%–80% silicon, other:						
Brazil	2,030	1,520	2,860,000	9,720	7,320	14,300,000
Canada	814	588	2,080,000	12,800	9,240	29,800,000
China	13	9	32,400	12,200	9,230	17,200,000
France	501	370	1,220,000	2,610	1,860	6,800,000
Iceland	1,830	1,400	2,540,000	9,880	7,730	13,900,000
Kazakhstan	--	--	--	9,190	7,030	15,900,000
Malaysia	1,650	1,230	2,190,000	14,600	10,900	16,500,000
Russia	--	--	--	74,300	56,500	108,000,000
Slovakia	192	144	293,000	1,010	758	1,520,000
South Africa	23	15	64,000	2,680	1,940	5,880,000
Other [10 countries and (or) localities]	232	171	617,000	3,520	2,600	9,110,000
Total	7,270	5,450	11,900,000	153,000	115,000	239,000,000
80%–90% ferrosilicon:						
Argentina	--	--	--	22	18	34,500
Canada	--	--	--	1	1	2,700
Germany	--	--	--	214	177	240,000
Total	--	--	--	237	196	278,000
More than 90% ferrosilicon:						
Brazil	--	--	--	2,330	2,150	1,240,000
China	--	--	--	13	13	64,300
Total	--	--	--	2,340	2,160	1,300,000
Magnesium ferrosilicon:						
Argentina	3	1	18,900	3	1	18,900
Canada	1,040	479	1,950,000	13,500	6,220	25,000,000
China	--	--	--	99	50	174,000
France	--	--	--	18	8	17,000
Germany	18	6	56,700	123	38	360,000
Hong Kong	--	--	--	19	9	33,700
India	80	33	134,000	3,490	1,490	3,280,000
Norway	--	--	--	162	78	326,000
Thailand	--	--	--	25	11	43,000
Total	1,140	520	2,160,000	17,500	7,900	29,200,000
Other ferrosilicon:						
Argentina	--	--	--	40	18	39,900
Brazil	92	41	74,500	92	41	74,500
Canada	676	247	826,000	9,680	3,310	12,100,000
China	47	19	161,000	930	409	1,790,000
France	--	--	--	55	26	147,000
Germany	3	1	15,700	27	12	127,000
Italy	--	--	--	20	3	32,500
Russia	5	2	7,920	277	136	512,000
Slovakia	20	3	31,600	255	65	421,000

See footnotes at end of table.

TABLE 4—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN 2018^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	December			January–December ³		
	Gross weight	Contained weight	Value	Gross weight	Contained weight	Value
Ferrosilicon—Continued:						
Other ferrosilicon:						
Spain	--	--	--	206	91	\$354,000
Other [2 countries and (or) localities]	--	--	--	14	6	33,300
Total	842	312	\$1,120,000	11,600	4,120	15,600,000
Total ferrosilicon	9,450	6,410	15,600,000	198,000	140,000	307,000,000
Metal:						
More than 99.99% silicon:						
Brazil	593	593	1,880,000	4,430	4,430	14,100,000
China	1	1	782,000	107	107	12,400,000
Denmark	(4)	(4)	43,800	3	3	1,300,000
Finland	(4)	(4)	122,000	3	3	1,140,000
Germany	35	35	3,470,000	743	743	50,900,000
Japan	20	20	1,170,000	221	221	12,900,000
Korea, Republic of	(4)	(4)	4,510	5	5	334,000
Norway	19	19	87,000	19	19	90,500
Taiwan	40	40	1,540,000	605	605	21,800,000
Ukraine	(4)	(4)	10,400	8	8	490,000
Other [10 countries and (or) localities]	(4)	(4)	12,800	4	4	243,000
Total	709	709	9,130,000	6,150	6,150	116,000,000
99.00%–99.99% silicon:						
Australia	979	973	2,620,000	3,870	3,850	10,600,000
Bosnia and Herzegovina	1,280	1,270	2,820,000	8,210	8,160	20,400,000
Brazil	1,870	1,860	4,940,000	20,600	20,400	57,800,000
Canada	2,930	2,910	9,120,000	27,200	27,000	81,900,000
Germany	--	--	--	60	59	192,000
Iceland	300	298	648,000	915	910	1,890,000
Kazakhstan	400	396	792,000	2,260	2,240	4,770,000
Laos	--	--	--	2,180	2,160	5,380,000
Norway	600	596	1,800,000	13,300	13,300	38,800,000
Thailand	1,000	995	2,940,000	15,300	15,200	44,500,000
Other [3 countries and (or) localities]	--	--	--	58	57	147,000
Total	9,360	9,290	25,700,000	93,900	93,300	266,000,000
Other silicon:						
Brazil	473	465	1,350,000	7,850	7,730	21,100,000
Canada	--	--	--	186	181	500,000
China	68	65	75,900	176	169	207,000
Iceland	--	--	--	239	232	449,000
Japan	14	14	23,800	489	469	595,000
Kazakhstan	--	--	--	540	522	1,140,000
Laos	--	--	--	309	297	788,000
Norway	2	2	9,120	6,250	6,100	14,300,000
Sweden	--	--	--	202	194	220,000
Thailand	--	--	--	528	512	1,190,000
Other [13 countries and (or) localities]	(4)	(4)	11,000	427	415	999,000
Total	557	546	1,470,000	17,200	16,800	41,500,000
Total silicon metal	10,600	10,500	36,300,000	117,000	116,000	424,000,000

-- Zero.

¹Presentation of monthly data is based on the quantities (gross weight) of the leading countries and (or) localities.

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

³May include revisions to previously published data.

⁴Less than ½ unit.

Source: U.S. Census Bureau.