

# Mineral Industry Surveys

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## SILICON IN SEPTEMBER 2017

Domestic production of silicon materials was 43,500 metric tons (t) in September 2017, a 7% decrease from August 2017 production and 14% more than September 2016 production (fig. 1, table 1). Net shipments were 27,100 t, an 8% decrease from shipments in August 2017 and a 7% increase from shipments in September 2016. Total production and net shipments during the first 9 months of 2017 were 4% more and slightly less, respectively, than those during the same period in 2016 (table 1).

Ending stocks were 22,900 t in September 2017, 7% more than those in August 2017 and 45% less than those in September 2016 (table 1). Adjustments in stocks included in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other alloys.

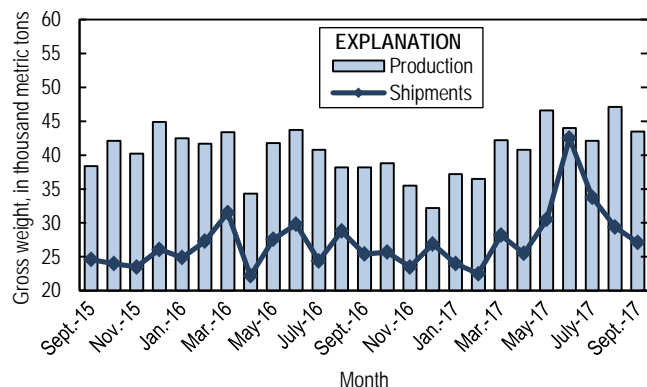


Figure 1. Monthly domestic production of total silicon materials and net shipments from September 2015 through September 2017 (may include revisions to previously published data). Source: U.S. Geological Survey.

The average U.S. spot price for silicon metal was 110.51 cents per pound in September 2017, a 9% decrease from the

average price in August 2017, and a 27% increase from the September 2016 price. The average U.S. spot prices for ferrosilicon, 50% and 75% grades, were 8% more and 3% less, respectively, than the average prices in August 2017 and were 20% and 22% greater, respectively, than their average prices in September 2016 (fig. 2).

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

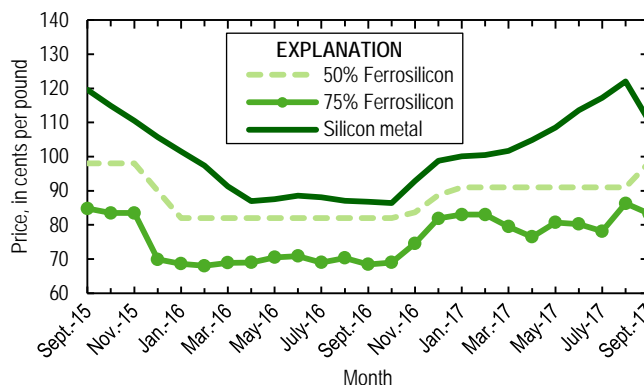


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from September 2015 through September 2017. Source: CRU Group and S&P Global Platts.

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

(Metric tons, gross weight)

	Gross production <sup>3</sup>	Net shipments	Producers' stocks, end of period
2016:			
January–December	471,000	318,000	37,100
January–September	365,000 <sup>r</sup>	242,000 <sup>r</sup>	41,400 <sup>r</sup>
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	44,000	42,500	28,900
July	42,100	33,800	21,400
August	47,100	29,400	21,400
September	43,500	27,100	22,900
January–September	380,000	264,000	22,900

<sup>r</sup>Revised.

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

<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 SEPTEMBER 2017

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	89.00	XX	105.00	95.88–98.19–100.50
75% ferrosilicon <sup>2</sup>	do.	95.00	83.31	105.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	123.00	110.51	128.00	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 SEPTEMBER 2017<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–September <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	3	2	\$5,350	293	162	\$133,000
Brazil	--	--	--	57	34	109,000
Canada	379	228	552,000	3,340	2,010	4,730,000
Colombia	--	--	--	10	6	25,500
Japan	--	--	--	20	12	33,200
Mexico	136	82	327,000	2,320	1,390	4,790,000
Netherlands	--	--	--	567	408	461,000
South Africa	--	--	--	237	142	104,000
Turkey	--	--	--	12	7	18,500
United Kingdom	60	43	31,100	80	56	49,100
Other (2 countries)	--	--	--	9	6	19,800
Total	579	355	915,000	6,950	4,230	10,500,000
Other ferrosilicon:						
Belgium	76	33	78,200	678	306	714,000
Brazil	--	--	--	260	127	494,000
Canada	88	44	39,800	1,010	505	513,000
France	20	9	33,000	120	55	192,000
Indonesia	20	10	30,500	81	32	122,000
Japan	--	--	--	98	49	163,000
Korea, Republic of	40	17	43,200	425	187	457,000
Mexico	313	155	674,000	3,500	1,600	6,670,000
Turkey	20	10	30,600	123	61	183,000
United Kingdom	20	9	30,300	605	277	956,000
Other (5 countries)	120	55	214,000	245	115	459,000
Total	718	341	1,170,000	7,140	3,310	10,900,000
Total ferrosilicon	1,300	696	2,090,000	14,100	7,550	21,400,000
Metal:						
More than 99.99% silicon:						
China	509	509	7,760,000	4,020	4,020	54,600,000
Germany	153	153	3,410,000	2,650	2,650	71,300,000
Hong Kong	320	320	3,390,000	1,610	1,610	13,900,000
Japan	1,300	1,300	40,500,000	12,400	12,400	394,000,000
Korea, Republic of	832	832	30,300,000	5,070	5,070	171,000,000
Malaysia	16	16	2,800,000	447	447	30,400,000
Philippines	424	424	11,100,000	907	907	26,900,000
Singapore	76	76	872,000	1,120	1,120	27,100,000
Taiwan	1,500	1,500	14,300,000	14,500	14,500	191,000,000
United Kingdom	65	65	774,000	281	281	6,840,000
Other (39 countries)	179	179	2,140,000	561	561	9,340,000
Total	5,380	5,380	117,000,000	43,500	43,500	997,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	79	79	85,500
China	--	--	--	203	203	206,000
Germany	13	13	18,600	15	15	21,600
Israel	--	--	--	26	26	37,200
Japan	--	--	--	12	12	17,000
Mexico	1	1	2,970	18	18	43,700
Netherlands	--	--	--	461	457	348,000
Peru	--	--	--	10	10	14,400
Thailand	--	--	--	15	15	21,700
United Kingdom	--	--	--	420	416	446,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–September <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Other (6 countries)	13	13	\$20,300	29	28	\$45,800
Total	27	27	41,900	1,290	1,280	1,290,000
Other silicon:						
Belgium	39	38	46,200	667	651	759,000
Canada	50	49	146,000	440	427	1,020,000
China	11	10	14,200	172	167	231,000
France	--	--	--	20	19	14,400
Germany	(4)	(4)	3,960	32	31	55,300
Hong Kong	--	--	--	10	9	98,900
Mexico	12	11	54,100	50	49	156,000
Netherlands	--	--	--	157	154	119,000
South Africa	13	12	16,900	85	83	155,000
United Kingdom	13	12	41,700	165	160	351,000
Other (8 countries)	-4	-4	2,540	17	16	84,100
Total	138	134	325,000	1,820	1,770	3,040,000
Total silicon metal	5,550	5,540	118,000,000	46,600	46,600	1,000,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–September" 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.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–September <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
Brazil	--	--	--	1,880	1,310	\$2,470,000
China	--	--	--	725	544	789,000
France	68	42	\$185,000	428	258	1,160,000
Germany	2	1	6,070	2	1	6,070
South Africa	18	13	26,900	231	161	436,000
Total	88	56	218,000	3,260	2,280	4,860,000
55%–80% silicon, other:						
Brazil	397	297	436,000	4,680	3,510	5,260,000
Canada	909	655	1,970,000	9,530	6,920	20,300,000
China	340	258	445,000	14,100	10,600	15,800,000
France	226	152	618,000	1,200	816	3,360,000
Iceland	1,530	1,210	1,640,000	14,100	11,000	15,500,000
Kazakhstan	1,210	915	1,390,000	14,500	11,000	16,400,000
Malaysia	163	121	214,000	4,930	3,650	5,160,000
Norway	--	--	--	1,010	763	1,120,000
Russia	14,200	10,800	21,400,000	61,200	46,900	74,700,000
South Africa	162	113	437,000	1,220	831	3,060,000
Other (10 countries)	217	162	559,000	2,450	1,780	5,520,000
Total	19,300	14,700	29,100,000	129,000	97,800	166,000,000
80%–90% ferrosilicon, Germany	--	--	--	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	57	15	56,700	560	206	641,000
Canada	1,080	489	1,910,000	9,630	4,390	16,900,000
China	--	--	--	198	92	268,000
France	--	--	--	10	5	42,500
Germany	4	1	5,440	83	34	218,000
India	202	64	278,000	1,720	569	2,110,000
Norway	--	--	--	82	39	145,000
Total	1,340	568	2,260,000	12,300	5,330	20,300,000
Other ferrosilicon:						
Brazil	--	--	--	4	2	6,960
Canada	1,130	389	982,000	12,600	4,400	10,400,000
China	66	24	128,000	5,690	1,070	2,010,000
Germany	--	--	--	50	19	173,000
India	--	--	--	74	33	79,900
Japan	2	1	3,440	9	4	15,000
Russia	3	1	4,220	98	47	154,000
Slovakia	63	22	60,400	199	49	254,000
South Africa	--	--	--	11	5	15,500
Trinidad and Tobago	--	--	--	89	14	34,800
Other (1 country)	(4)	(4)	2,060	(4)	(4)	2,060
Total	1,270	437	1,180,000	18,900	5,640	13,200,000
Total ferrosilicon	22,000	15,700	32,800,000	165,000	112,000	205,000,000
Metal:						
More than 99.99% silicon:						
Brazil	129	129	305,000	6,390	6,390	15,300,000
China	7	7	1,090,000	65	65	8,050,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–September <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
More than 99.99% silicon:						
Denmark	(4)	(4)	\$30,900	4	4	\$1,630,000
Germany	47	47	3,770,000	558	558	31,800,000
Japan	14	14	594,000	175	175	8,140,000
Norway	20	20	284,000	96	96	602,000
Spain	(4)	(4)	3,800	3	3	21,800
Sweden	--	--	--	2	2	54,700
Taiwan	62	62	1,920,000	394	394	11,400,000
Ukraine	--	--	--	3	3	197,000
Other (6 countries)	(4)	(4)	136,000	(4)	(4)	309,000
Total	279	279	8,140,000	7,690	7,690	77,400,000
99.00%–99.99% silicon:						
Australia	958	950	2,150,000	16,900	16,800	36,100,000
Bosnia and Herzegovina	140	139	280,000	1,550	1,540	2,830,000
Brazil	3,330	3,300	8,660,000	20,400	20,200	50,600,000
Canada	2,010	2,000	5,450,000	18,300	18,100	47,600,000
France	--	--	--	626	620	985,000
Kazakhstan	--	--	--	7,960	7,900	14,400,000
Malaysia	--	--	--	114	113	177,000
Norway	619	615	1,380,000	4,370	4,340	9,790,000
South Africa	425	421	1,030,000	975	966	2,070,000
Thailand	819	812	1,820,000	3,810	3,770	7,600,000
Other (5 countries)	17	17	32,500	216	214	412,000
Total	8,320	8,260	20,800,000	75,100	74,600	173,000,000
Other silicon:						
Australia	--	--	--	1,450	1,410	2,780,000
Brazil	450	433	1,140,000	7,960	7,810	18,300,000
Canada	--	--	--	980	955	2,330,000
Iceland	210	208	390,000	914	898	1,530,000
Japan	10	9	47,700	291	279	429,000
Kazakhstan	--	--	--	1,240	1,210	2,100,000
Norway	528	518	910,000	5,220	5,090	8,500,000
South Africa	99	96	223,000	522	508	847,000
Thailand	178	172	369,000	274	264	576,000
United Kingdom	29	28	55,300	170	166	361,000
Other (7 countries)	20	19	48,600	385	372	640,000
Total	1,520	1,480	3,180,000	19,400	19,000	38,400,000
Total silicon metal	10,100	10,000	32,100,000	102,000	101,000	288,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–September" 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.