

# Mineral Industry Surveys

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## SILICON IN SEPTEMBER 2020

Domestic production of silicon materials was 23,500 metric tons (t) in September 2020, an 18% decrease from August 2020 production and 21% less than September 2019 production (fig. 1, table 1). Net shipments were 17,800 t, 9% less than shipments in August 2020 and 31% less than shipments in September 2019. Total production and net shipments during the first 9 months of 2020 were each 16% less than those during the same period in 2019 (table 1).

Ending stocks were 21,600 t in September 2020, 13% less than ending stocks in August 2020 and 23% less than those in September 2019 (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.

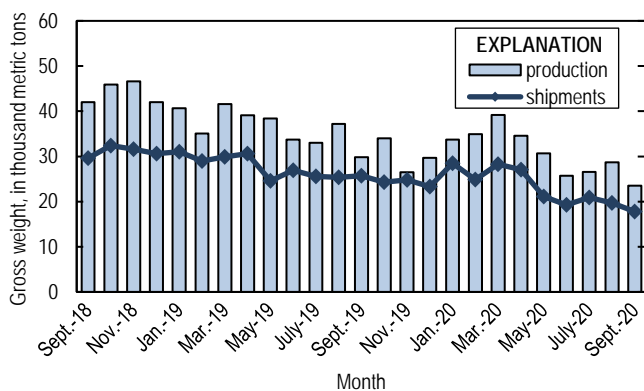


Figure 1. Monthly domestic production of total silicon materials and net shipments from September 2018 through September 2020 (may include revisions to previously published data).

### Prices

The average U.S. spot price for silicon metal was 95.50 cents per pound in September 2020, slightly more than the average price in August 2020 and 4% less than that in September 2019. The average U.S. spot price for ferrosilicon, 50% grade, was 102.50 cents per pound, unchanged from the average price in August 2020 and essentially unchanged from the average price in September 2019. The average U.S. spot price for ferrosilicon, 75% grade, was 83.00 cents per pound, slightly less than the average price in August 2020 and slightly more than that in September 2019 (fig. 2).

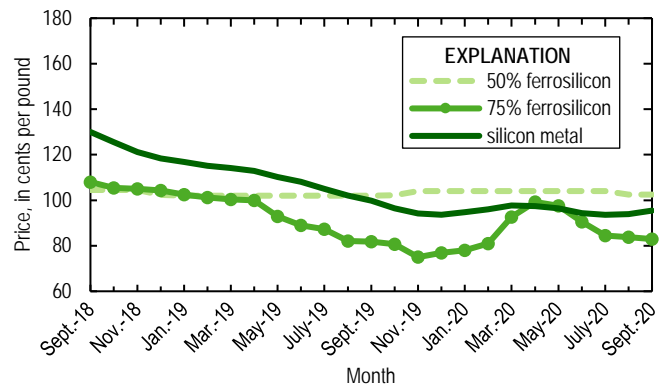


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from September 2018 through September 2020. Source: CRU Group and S&P Global Platts.

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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
2019:			
January–December	419,000	321,000	18,900
January–September	329,000	249,000 <sup>r</sup>	27,900 <sup>r</sup>
September	29,800	25,700	27,900
October	34,000	24,300	27,800
November	26,500	24,800	22,200
December	29,700	23,300	18,900
2020:			
January	33,700	28,500	15,600
February	34,900	24,900	18,300
March	39,200	28,300	20,500
April	34,600	27,100	21,800
May	30,700	21,100	25,600
June	25,700	19,300	26,000
July	26,600	20,900	23,900
August	28,700	19,700	24,700
September	23,500	17,800	21,600
January–September	278,000	208,000	21,600

<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 SEPTEMBER 2020

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	101.00	XX	104.00	101.00–102.50–104.00
75% ferrosilicon <sup>2</sup>	do.	82.00	83.00	84.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	93.00	95.50	97.00	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 2020<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
<b>Ferrosilicon:</b>						
More than 55% silicon:						
Belgium	--	--	--	95	63	\$93,800
Brazil	--	--	--	12	7	18,500
Canada	13	8	\$24,100	1,330	795	2,020,000
Dominican Republic	--	--	--	25	15	48,900
France	--	--	--	80	48	95,100
Mexico	138	84	275,000	1,280	782	2,540,000
Netherlands	--	--	--	9	5	18,700
Singapore	--	--	--	7	4	10,100
South Africa	--	--	--	76	53	56,800
United Kingdom	--	--	--	86	51	134,000
Other [1 country and (or) locality]	--	--	--	1	(4)	2,780
Total	151	92	299,000	3,000	1,820	5,030,000
Other ferrosilicon:						
Belgium	72	33	54,000	440	197	382,000
Brazil	98	49	190,000	253	127	494,000
Canada	48	24	126,000	312	152	590,000
China	--	--	--	10	5	13,000
Finland	--	--	--	20	10	29,800
Mexico	325	161	623,000	1,350	510	2,490,000
Spain	20	10	31,300	159	80	251,000
Switzerland	20	9	16,500	140	64	229,000
Turkey	--	--	--	60	27	100,000
United Kingdom	--	--	--	80	36	144,000
Other [1 country and (or) locality]	--	--	--	2	1	9,400
Total	583	286	1,040,000	2,830	1,210	4,730,000
Total ferrosilicon	734	378	1,340,000	5,820	3,030	9,760,000
<b>Metal:</b>						
More than 99.99% silicon:						
China	271	271	4,460,000	1,160	1,160	21,400,000
Germany	570	570	16,500,000	3,550	3,550	115,000,000
Hong Kong	51	51	170,000	189	189	722,000
Japan	302	302	14,100,000	6,390	6,390	264,000,000
Korea, Republic of	109	109	3,690,000	3,360	3,360	76,200,000
Malaysia	8	8	1,340,000	115	115	15,900,000
Norway	75	75	750,000	560	560	5,410,000
Singapore	36	36	718,000	620	620	12,300,000
Taiwan	88	88	1,570,000	1,550	1,550	11,200,000
Vietnam	560	560	4,300,000	3,640	3,640	32,600,000
Other [31 countries and (or) localities]	6	6	377,000	277	277	10,000,000
Total	2,080	2,080	47,900,000	21,400	21,400	565,000,000
99.00%–99.99% silicon:						
Chile	--	--	--	2	2	3,020
Costa Rica	2	2	3,340	9	9	13,300
Dominican Republic	--	--	--	5	5	6,800
Germany	--	--	--	21	20	22,200
Guatemala	--	--	--	4	4	5,860
Mexico	2	2	5,660	24	24	49,400
Netherlands	--	--	--	57	52	58,700
Pakistan	--	--	--	5	5	7,400
United Kingdom	--	--	--	117	117	137,000
Total	4	4	9,000	245	239	303,000
Other silicon:						
Belgium	37	36	53,000	260	253	319,000
Canada	32	32	58,100	112	108	285,000
China	--	--	--	70	68	98,300
Korea, Republic of	--	--	--	29	28	72,900

See footnotes at end of table.

TABLE 3—Continued  
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN SEPTEMBER 2020<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:						
Mexico	--	--	--	47	46	\$144,000
Netherlands	--	--	--	138	134	123,000
South Africa	1	(4)	\$7,970	29	28	72,500
Sweden	54	53	57,900	54	53	57,900
Taiwan	--	--	--	62	59	88,700
United Kingdom	--	--	--	118	114	130,000
Other [11 countries and (or) localities]	21	20	38,200	84	82	179,000
Total	145	141	215,000	1,000	974	1,570,000
Total silicon metal	2,230	2,220	48,100,000	22,600	22,600	567,000,000

<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.

TABLE 4  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN SEPTEMBER 2020<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
<b>Ferrosilicon:</b>						
55%–80% silicon, more than 3% Ca:						
China	--	--	--	139	76	\$303,000
France	18	11	\$47,100	322	200	871,000
Kazakhstan	--	--	--	80	66	88,300
South Africa	--	--	--	72	48	142,000
Total	18	11	47,100	614	391	1,400,000
55%–80% silicon, other:						
Brazil	5,030	3,760	4,590,000	21,000	15,700	21,300,000
Canada	2,520	1,870	3,740,000	12,300	9,110	21,200,000
Iceland	2,410	1,900	2,310,000	9,380	7,410	10,100,000
Kazakhstan	1,030	796	1,230,000	10,100	7,770	13,500,000
Malaysia	--	--	--	10,000	7,780	9,880,000
Netherlands	--	--	--	3,400	2,590	3,760,000
Norway	1,270	1,000	1,410,000	4,630	3,650	5,760,000
Paraguay	1,110	863	1,040,000	4,790	3,720	5,460,000
Russia	--	--	--	33,400	25,400	36,500,000
South Africa	163	116	318,000	1,620	1,160	2,710,000
Other [7 countries and (or) localities]	412	289	927,000	1,780	1,260	5,730,000
Total	13,900	10,600	15,600,000	112,000	85,500	136,000,000
80%–90% ferrosilicon:						
Brazil	175	145	164,000	501	414	721,000
China	4	3	3,520	4	3	3,520
Total	179	148	168,000	505	417	724,000
More than 90% ferrosilicon, Bosnia and Herzegovina	--	--	--	37	34	67,100
Magnesium ferrosilicon:						
Argentina	19	9	17,000	361	164	336,000
Brazil	--	--	--	476	217	586,000
Canada	888	408	1,540,000	6,800	3,120	12,000,000
Germany	16	5	45,900	95	23	259,000
India	20	9	32,100	395	178	560,000
Norway	--	--	--	73	35	141,000
Total	943	431	1,640,000	8,200	3,740	13,900,000
Other ferrosilicon:						
Brazil	--	--	--	216	93	248,000
Canada	681	222	840,000	6,140	2,120	7,360,000
China	--	--	--	158	69	264,000
France	--	--	--	18	8	44,400
Germany	--	--	--	14	5	62,100
India	--	--	--	73	32	103,000
Russia	1	1	2,860	123	59	243,000
Slovakia	59	9	97,700	350	87	512,000
South Africa	--	--	--	53	8	141,000
Spain	11	5	37,500	13	5	42,400
Other [1 country and (or) locality]	--	--	--	5	2	39,100
Total	752	236	979,000	7,160	2,490	9,060,000
Total ferrosilicon	15,800	11,400	18,400,000	129,000	92,600	161,000,000
<b>Metal:</b>						
More than 99.99% silicon:						
Brazil	62	62	149,000	772	772	1,970,000
Canada	--	--	--	9	9	25,700
China	6	6	624,000	63	63	7,200,000
Germany	16	16	1,800,000	188	188	20,300,000
Japan	2	2	417,000	102	102	7,550,000
Laos	--	--	--	36	36	792,000
Malaysia	14	14	112,000	19	19	150,000
Norway	--	--	--	31	31	314,000
Taiwan	23	23	2,580,000	202	202	21,700,000

See footnotes at end of table.

TABLE 4—Continued  
 U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN SEPTEMBER 2020<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:						
United Kingdom	1	1	\$5,420	4	4	\$26,500
Other [11 countries and (or) localities]	3	3	227,000	9	9	945,000
Total	127	127	5,920,000	1,440	1,440	60,900,000
99.00%–99.99% silicon:						
Australia	184	183	367,000	1,460	1,450	3,100,000
Bosnia and Herzegovina	496	492	1,010,000	5,410	5,370	9,840,000
Brazil	3,240	3,220	5,500,000	13,000	12,900	27,100,000
Canada	99	98	226,000	13,800	13,700	32,700,000
Iceland	306	304	470,000	3,430	3,410	5,370,000
Kazakhstan	--	--	--	1,150	1,150	1,770,000
Laos	--	--	--	720	713	1,580,000
Malaysia	2,380	2,360	3,930,000	7,870	7,800	12,800,000
Norway	624	620	1,680,000	6,720	6,670	17,400,000
South Africa	--	--	--	441	436	561,000
Other [3 countries and (or) localities]	--	--	--	56	56	103,000
Total	7,330	7,280	13,200,000	54,000	53,600	112,000,000
Other silicon:						
Australia	664	639	1,300,000	4,450	4,310	8,820,000
Brazil	556	550	1,110,000	7,880	7,610	16,200,000
Canada	91	88	208,000	307	295	723,000
China	--	--	--	176	169	192,000
Iceland	20	19	26,900	281	276	416,000
Japan	40	38	43,400	207	198	286,000
Malaysia	134	129	248,000	317	308	580,000
Netherlands	19	19	55,900	160	154	501,000
Norway	763	749	1,040,000	4,280	4,190	5,870,000
Sweden	67	65	73,400	209	200	227,000
Other [9 countries and (or) localities]	20	19	48,400	347	337	1,190,000
Total	2,380	2,310	4,150,000	18,600	18,000	35,000,000
Total silicon metal	9,830	9,720	23,300,000	74,100	73,100	208,000,000

<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.