

# Mineral Industry Surveys

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## SILICON IN APRIL 2020

Domestic production of silicon materials was 33,800 metric tons (t) in April 2020, a 12% decrease from March 2020 production and 14% less than April 2019 production (fig. 1, table 1). Net shipments were 25,800 t, slightly less than shipments in March 2020 and 16% less than shipments in April 2019. Total production and net shipments during the first 4 months of 2020 were 10% less and 15% less, respectively, than those during the same period in 2019 (table 1).

Ending stocks were 21,900 t in April 2020, essentially unchanged from the stocks in March 2020 and 5% less than those in April 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.

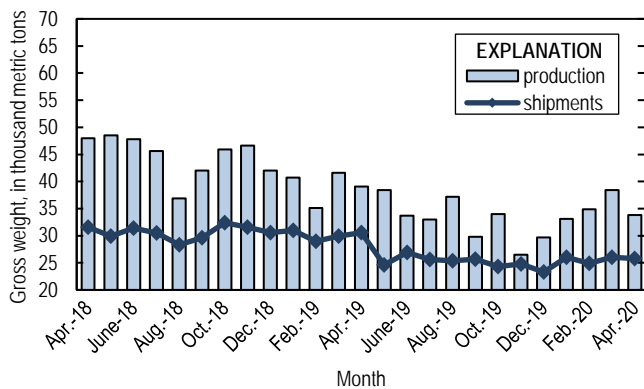


Figure 1. Monthly domestic production of total silicon materials and net shipments from April 2018 through April 2020 (may include revisions to previously published data).

### Prices

The average U.S. spot price for silicon metal was 97.40 cents per pound in April 2020, essentially unchanged from the average price in March 2020 and 14% less than that in April 2019. The average U.S. spot price for ferrosilicon, 50% grade, was 104 cents per pound, unchanged since November 2019 and slightly more than the average price in April 2019. The average U.S. spot price for ferrosilicon, 75% grade, was 99.30 cents per pound, 7% more than the average price in March 2020 and slightly less than that in April 2019 (fig. 2).

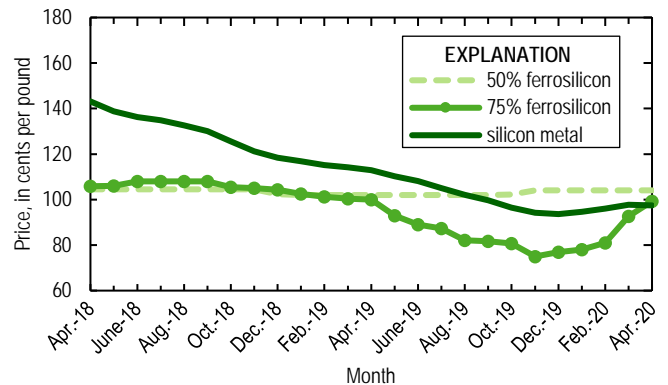


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, April 2018 through April 2020. Source: CRU Group and S&P Global Platts.

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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–April	157,000 <sup>r</sup>	120,000	23,000 <sup>r</sup>
April	39,100	30,600	23,000
May	38,400	24,600	28,400
June	33,700	26,900	29,000
July	33,000	25,600	29,000
August	37,200	25,400	31,800
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	33,100	26,000	16,700
February	34,900	24,900	18,300
March	38,400	26,000	21,800
April	33,800	25,800	21,900
January–April	140,000	103,000	21,900

<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 APRIL 2020

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	103.00	XX	105.00	103.00–104.00–105.00
75% ferrosilicon <sup>2</sup>	do.	95.00	99.30	101.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	96.00	97.40	100.00	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 APRIL 2020<sup>1, 2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–April <sup>3</sup>		
				Gross weight	Contained weight	Value
<b>Ferrosilicon:</b>						
<b>More than 55% silicon:</b>						
Bahamas	--	--	--	1	(4)	\$2,780
Belgium	95	63	\$93,800	95	63	93,800
Brazil	--	--	--	12	7	18,500
Canada	43	26	68,300	691	415	1,030,000
France	--	--	--	80	48	95,100
Mexico	113	72	231,000	613	377	1,300,000
South Africa	--	--	--	19	13	14,200
United Kingdom	--	--	--	86	51	134,000
Total	251	161	394,000	1,600	975	2,700,000
<b>Other ferrosilicon:</b>						
Belgium	36	16	26,000	144	64	102,000
Brazil	39	20	76,000	116	58	228,000
Canada	5	3	19,200	189	95	326,000
Finland	--	--	--	20	10	29,800
Japan	--	--	--	2	1	9,400
Mexico	76	37	156,000	401	132	737,000
Spain	40	20	62,700	99	50	157,000
Switzerland	20	9	35,000	60	27	105,000
United Kingdom	20	9	36,000	80	36	144,000
Total	236	114	410,000	1,110	473	1,840,000
Total ferrosilicon	487	274	804,000	2,710	1,450	4,530,000
<b>Metal:</b>						
<b>More than 99.99% silicon:</b>						
China	72	72	1,630,000	599	599	9,710,000
Estonia	62	62	43,700	62	62	43,700
Germany	522	522	20,800,000	1,310	1,310	42,000,000
Japan	934	934	40,500,000	3,150	3,150	120,000,000
Korea, Republic of	626	626	22,200,000	1,760	1,760	36,600,000
Malaysia	13	13	2,160,000	47	47	7,570,000
Norway	120	120	1,210,000	365	365	3,460,000
Singapore	94	94	1,880,000	183	183	3,690,000
Taiwan	230	230	1,740,000	564	564	3,890,000
Vietnam	368	368	3,690,000	973	973	9,060,000
Other [24 countries and (or) localities]	52	52	1,390,000	150	150	5,390,000
Total	3,100	3,100	97,300,000	9,160	9,160	242,000,000
<b>99.00%–99.99% silicon:</b>						
Dominican Republic	--	--	--	5	5	6,800
Germany	2	2	2,840	21	20	22,200
Guatemala	--	--	--	4	4	5,860
Mexico	1	1	2,850	6	6	16,900
Netherlands	--	--	--	53	48	54,000
Pakistan	--	--	--	5	5	7,400
United Kingdom	41	41	57,600	117	117	137,000
Total	44	44	63,300	212	206	250,000
<b>Other silicon:</b>						
Argentina	3	3	16,000	10	9	25,000
Belgium	57	56	76,100	129	125	142,000
Canada	5	5	24,600	53	51	146,000
China	13	13	17,500	33	32	43,400
France	--	--	--	8	8	10,300

See footnotes at end of table.

TABLE 3—Continued  
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN APRIL 2020<sup>1, 2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–April <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
Korea, Republic of	24	24	\$32,300	28	27	\$55,700
Mexico	2	2	11,200	26	25	93,900
Singapore	--	--	--	9	9	11,800
South Africa	(4)	(4)	7,670	18	17	41,700
United Kingdom	27	26	35,600	41	40	54,400
Other [5 countries and (or) localities]	4	4	5,100	10	10	45,000
Total	136	132	226,000	364	353	669,000
Total silicon metal	3,280	3,280	97,600,000	9,740	9,720	243,000,000

<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 APRIL 2020<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–April <sup>3</sup>		
				Gross weight	Contained weight	Value
<b>Ferrosilicon:</b>						
55%–80% silicon, more than 3% Ca:						
China	--	--	--	80	43	\$179,000
France	18	11	\$56,300	88	56	229,000
South Africa	18	11	47,100	72	48	142,000
Total	36	22	103,000	240	147	550,000
55%–80% silicon, other:						
Brazil	1,100	823	1,160,000	3,170	2,380	3,390,000
Canada	1,090	812	1,740,000	4,230	3,100	8,370,000
France	72	47	190,000	342	228	852,000
Iceland	582	460	601,000	3,960	3,130	3,970,000
Kazakhstan	--	--	--	4,190	3,210	5,160,000
Malaysia	2,000	1,580	1,890,000	3,410	2,630	3,210,000
Netherlands	3,400	2,590	3,760,000	3,400	2,590	3,760,000
Paraguay	499	378	488,000	1,810	1,410	2,550,000
Russia	5,730	4,340	6,330,000	18,200	13,800	19,900,000
South Africa	285	206	266,000	811	588	1,090,000
Other [5 countries and (or) localities]	87	64	422,000	421	316	1,340,000
Total	14,800	11,300	16,900,000	43,900	33,400	53,600,000
80%–90% ferrosilicon, Brazil	65	54	82,100	232	191	441,000
<b>Magnesium ferrosilicon:</b>						
Argentina	76	34	68,900	266	120	245,000
Brazil	17	8	15,200	119	54	132,000
Canada	330	152	601,000	3,370	1,550	6,020,000
Germany	--	--	--	16	6	45,700
India	25	11	39,000	68	30	106,000
Norway	24	12	47,000	49	23	93,800
Total	473	217	771,000	3,890	1,780	6,640,000
<b>Other ferrosilicon:</b>						
Brazil	--	--	--	216	93	248,000
Canada	588	209	663,000	3,430	1,180	4,200,000
China	--	--	--	107	47	184,000
France	9	4	22,200	18	8	44,400
Germany	--	--	--	2	1	10,400
India	19	8	26,600	55	24	78,200
Russia	40	19	79,600	62	29	124,000
Slovakia	22	4	37,100	136	43	158,000
Spain	--	--	--	1	1	4,910
United Kingdom	5	2	39,100	5	2	39,100
Total	684	247	867,000	4,030	1,430	5,090,000
Total ferrosilicon	16,100	11,800	18,700,000	52,300	36,900	66,300,000
<b>Metal:</b>						
More than 99.99% silicon:						
Brazil	91	91	249,000	377	377	1,020,000
China	1	1	17,700	32	32	3,850,000
Denmark	(4)	(4)	26,600	1	1	206,000
Germany	23	23	3,160,000	100	100	10,000,000
Japan	4	4	650,000	91	91	5,080,000
Korea, Republic of	(4)	(4)	42,300	(4)	(4)	53,600
Laos	--	--	--	36	36	792,000
Spain	(4)	(4)	3,370	(4)	(4)	6,610
Taiwan	23	23	2,560,000	75	75	8,470,000

See footnotes at end of table.

TABLE 4—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN APRIL 2020<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–April <sup>3</sup>		
				Gross weight	Contained weight	Value
<b>Metal—Continued:</b>						
More than 99.99% silicon:						
United Kingdom	(4)	(4)	\$2,170	2	2	\$12,700
Other [2 countries and (or) localities]	--	--	--	(4)	(4)	38,600
<b>Total</b>	<b>143</b>	<b>143</b>	<b>6,720,000</b>	<b>713</b>	<b>713</b>	<b>29,600,000</b>
99.00%–99.99% silicon:						
Australia	192	190	394,000	917	910	1,990,000
Bosnia and Herzegovina	970	961	1,870,000	3,550	3,520	6,140,000
Brazil	511	507	1,250,000	4,810	4,770	11,000,000
Canada	1,600	1,590	3,810,000	5,230	5,190	12,600,000
Iceland	80	79	132,000	1,390	1,380	2,210,000
Kazakhstan	485	481	752,000	505	501	781,000
Laos	360	356	792,000	720	713	1,580,000
Malaysia	1,100	1,090	1,700,000	2,840	2,820	4,330,000
Norway	624	620	1,670,000	2,290	2,280	6,180,000
South Africa	160	159	219,000	360	357	458,000
Other [2 countries and (or) localities]	(4)	(4)	2,410	48	48	79,400
<b>Total</b>	<b>6,090</b>	<b>6,040</b>	<b>12,600,000</b>	<b>22,700</b>	<b>22,500</b>	<b>47,400,000</b>
Other silicon:						
Australia	483	466	953,000	1,460	1,410	2,900,000
Brazil	703	558	1,390,000	3,780	3,580	7,940,000
Canada	--	--	--	216	208	515,000
China	--	--	--	83	79	90,100
Iceland	81	80	123,000	183	181	273,000
Malaysia	--	--	--	120	118	218,000
Netherlands	38	36	119,000	98	94	314,000
Norway	247	241	323,000	1,760	1,720	2,420,000
South Africa	20	20	36,000	60	59	108,000
Sweden	101	97	110,000	141	136	154,000
Other [6 countries and (or) localities]	10	10	22,100	121	116	240,000
<b>Total</b>	<b>1,680</b>	<b>1,510</b>	<b>3,070,000</b>	<b>8,020</b>	<b>7,700</b>	<b>15,200,000</b>
<b>Total silicon metal</b>	<b>7,920</b>	<b>7,690</b>	<b>22,400,000</b>	<b>31,400</b>	<b>30,900</b>	<b>92,100,000</b>

<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.