

Mineral Industry Surveys

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SILICON IN DECEMBER 2020

Domestic production of silicon materials was 29,300 metric tons (t) in December 2020, 26% more than November 2020 production and slightly less than December 2019 production (fig. 1, table 1). Net shipments were 19,900 t, 3% less than revised shipments in November 2020 and 15% less than shipments in December 2019. Total production and net shipments during 2020 were 15% less and 16% less, respectively, than those during 2019 (table 1).

Ending stocks were 18,200 t in December 2020, 14% more than ending stocks in November 2020 and 4% less than those in December 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.

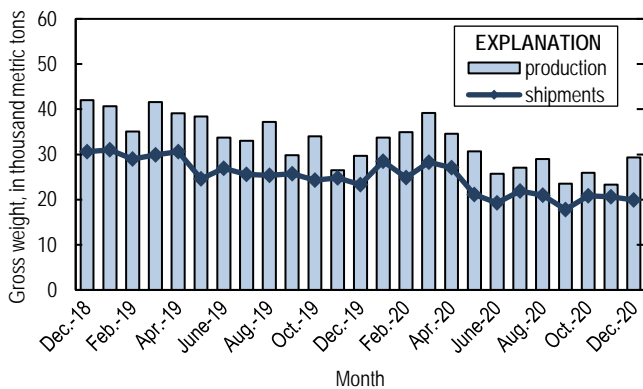


Figure 1. Monthly domestic production of total silicon materials and net shipments from December 2018 through December 2020 (may include revisions to previously published data).

Prices

The average U.S. spot price for silicon metal was 105.30 cents per pound in December 2020, 5% more than the average price in November 2020 and 12% more than the average price in December 2019. The average U.S. spot price for ferrosilicon, 50% grade, was 102.50 cents per pound, unchanged since August 2020 and slightly less than the average price in December 2019. The average U.S. spot price for ferrosilicon, 75% grade, was 92.60 cents per pound, 12% more than the average price in November 2020 and 20% more than that in December 2019 (fig. 2).

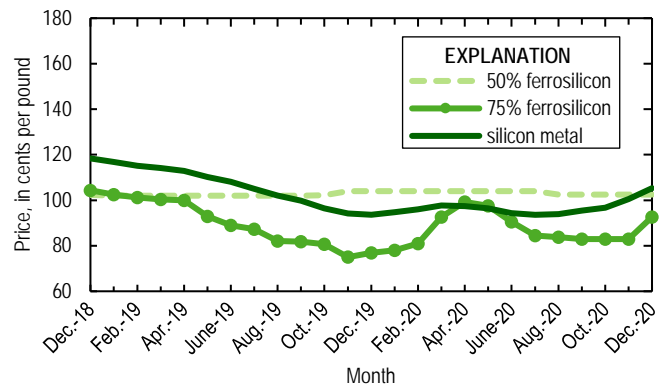


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from December 2018 through December 2020. Source: CRU Group and S&P Global Platts Metals Week.

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TABLE 1
 PRODUCTION, SHIPMENTS, AND STOCKS OF SILICON ALLOYS
 AND METAL IN THE UNITED STATES^{1,2,3}

(Metric tons, gross weight)

	Gross production ⁴	Net shipments	Producers' stocks, end of period
2019:			
January–December	419,000	321,000	18,900
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	27,100 ^r	21,900 ^r	24,300 ^r
August	29,000 ^r	21,000 ^r	24,600 ^r
September	23,500	17,800	21,600
October	25,900 ^r	20,800 ^r	19,400 ^r
November	23,300 ^r	20,600 ^r	15,900 ^r
December	29,300	19,900	18,200
January–December	357,000	271,000	18,200

^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.

³Includes USGS estimates.

⁴Ferrosilicon production includes material consumed in the production of miscellaneous silicon alloys.

TABLE 2
PRICES FOR FERROSILICON AND SILICON METAL IN DECEMBER 2020

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon ¹	cents per pound of contained silicon	101.00	XX	104.00	101.00–102.50–104.00
75% ferrosilicon ²	do.	84.00	92.60	96.00	XX
Silicon metal, 553 grade ³	cents per pound	100.00	105.30	109.00	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 Metals Week, in U.S. warehouse, U.S. origin and imported material. Average price reported for all transactions during the month.

³S&P Global Platts Metals Week, 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 DECEMBER 2020^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–December ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	93	65	\$85,700	188	128	\$180,000
Brazil	--	--	--	19	11	29,600
Canada	60	36	102,000	1,780	1,070	2,650,000
Dominican Republic	--	--	--	25	15	48,900
France	--	--	--	80	48	95,100
Mexico	153	93	335,000	1,790	1,090	3,580,000
Netherlands	--	--	--	9	5	18,700
Singapore	--	--	--	7	4	10,100
South Africa	38	25	28,400	114	78	85,200
United Kingdom	--	--	--	86	51	134,000
Other [1 country and (or) locality]	--	--	--	1	(4)	2,780
Total	344	220	551,000	4,100	2,500	6,840,000
Other ferrosilicon:						
Belgium	54	24	40,500	667	300	640,000
Brazil	97	48	190,000	388	194	760,000
Canada	35	18	69,500	375	183	745,000
Finland	--	--	--	20	10	29,800
France	20	9	37,000	20	9	37,000
Mexico	246	121	477,000	2,150	908	4,020,000
Spain	60	30	94,000	239	119	376,000
Switzerland	--	--	--	240	109	408,000
Turkey	40	18	75,200	100	44	176,000
United Kingdom	79	38	129,000	199	93	336,000
Other [3 countries and (or) localities]	--	--	--	13	6	25,300
Total	630	306	1,110,000	4,410	1,980	7,550,000
Total ferrosilicon	974	526	1,660,000	8,510	4,480	14,400,000
Metal:						
More than 99.99% silicon:						
China	123	123	5,700,000	2,140	2,140	62,800,000
Germany	696	696	17,800,000	5,450	5,450	171,000,000
Hong Kong	1	1	55,700	189	189	778,000
Japan	1,040	1,040	48,400,000	8,950	8,950	367,000,000
Korea, Republic of	420	420	6,600,000	4,170	4,170	91,800,000
Malaysia	15	15	2,440,000	224	224	25,000,000
Norway	90	90	900,000	740	740	7,210,000
Singapore	143	143	2,800,000	956	956	19,000,000
Taiwan	182	182	1,130,000	1,810	1,810	14,500,000
Vietnam	136	136	1,230,000	4,600	4,600	41,500,000
Other [33 countries and (or) localities]	10	10	860,000	359	359	14,000,000
Total	2,860	2,860	88,000,000	29,600	29,600	814,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	4	4	6,000
Brazil	--	--	--	11	11	15,600
Costa Rica	--	--	--	9	9	13,300
Dominican Republic	--	--	--	5	5	6,800
Germany	2	2	3,180	26	26	30,300
Guatemala	--	--	--	4	4	5,860
Mexico	4	4	8,910	30	30	61,100
Netherlands	--	--	--	57	52	58,700
Pakistan	--	--	--	5	5	7,400
United Kingdom	--	--	--	117	117	137,000
Other [2 countries and (or) localities]	2	2	2,780	4	4	5,790
Total	9	9	14,900	273	267	347,000
Other silicon:						
Belgium	38	38	45,900	299	291	364,000
Canada	2	2	4,770	122	118	321,000
China	8	8	10,600	105	101	144,000
Malaysia	--	--	--	42	41	55,200

See footnotes at end of table.

TABLE 3—Continued
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN DECEMBER 2020^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–December ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
Mexico	11	11	\$19,400	290	282	\$678,000
Netherlands	--	--	--	247	239	203,000
South Africa	29	29	38,800	59	57	116,000
Sweden	--	--	--	54	53	57,900
Taiwan	--	--	--	62	59	88,700
United Kingdom	--	--	--	118	115	137,000
Other [14 countries and (or) localities]	7	7	24,100	111	108	275,000
Total	96	94	144,000	1,510	1,460	2,440,000
Total silicon metal	2,960	2,960	88,200,000	31,400	31,300	817,000,000

-- Zero.

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

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 DECEMBER 2020^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–December ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
China	--	--	--	219	121	\$463,000
France	32	21	\$38,300	426	265	1,130,000
India	18	11	52,700	18	11	52,700
Kazakhstan	--	--	--	80	66	88,300
South Africa	36	22	113,000	126	81	312,000
Total	86	54	204,000	870	544	2,040,000
55%–80% silicon, other:						
Brazil	1,330	1,000	1,230,000	28,200	21,200	27,800,000
Canada	1,070	796	1,890,000	15,500	11,400	27,300,000
Iceland	2,160	1,680	2,240,000	15,200	11,900	15,700,000
Kazakhstan	--	--	--	13,000	10,000	16,500,000
Malaysia	--	--	--	11,700	9,070	11,300,000
Netherlands	--	--	--	3,400	2,590	3,760,000
Norway	2,150	1,570	2,130,000	10,200	7,770	11,200,000
Paraguay	101	78	89,100	5,970	4,630	6,530,000
Russia	14,100	10,700	18,300,000	64,300	49,000	74,600,000
South Africa	288	197	404,000	2,260	1,600	3,760,000
Other [7 countries and (or) localities]	418	296	994,000	2,680	1,900	7,920,000
Total	21,600	16,400	27,300,000	172,000	131,000	206,000,000
80%–90% ferrosilicon:						
Bosnia and Herzegovina	--	--	--	8	7	13,500
Brazil	--	--	--	501	414	721,000
China	--	--	--	4	3	3,520
Total	--	--	--	513	424	738,000
More than 90% ferrosilicon, Bosnia and Herzegovina	--	--	--	85	78	154,000
Magnesium ferrosilicon:						
Argentina	--	--	--	437	198	402,000
Brazil	78	35	102,000	652	296	806,000
Canada	837	382	1,470,000	9,500	4,370	16,700,000
Germany	23	6	60,000	118	29	319,000
India	(4)	(4)	6,760	443	200	651,000
Norway	--	--	--	73	35	141,000
Total	939	424	1,640,000	11,200	5,130	19,000,000
Other ferrosilicon:						
Brazil	--	--	--	216	93	248,000
Canada	501	141	686,000	8,110	2,760	9,790,000
China	23	10	40,100	183	81	307,000
France	--	--	--	18	8	44,400
Germany	--	--	--	23	10	109,000
India	--	--	--	73	32	103,000
Russia	20	9	42,000	183	87	364,000
Slovakia	20	3	35,400	448	102	670,000
South Africa	17	2	22,800	70	9	164,000
United Kingdom	--	--	--	14	7	61,300
Other [1 country and (or) locality]	--	--	--	13	5	42,400
Total	581	165	827,000	9,350	3,190	11,900,000
Total ferrosilicon	23,200	17,000	29,900,000	194,000	140,000	240,000,000
Metal:						
More than 99.99% silicon:						
Brazil	79	79	191,000	988	988	2,490,000
Canada	--	--	--	9	9	25,700
China	30	30	484,000	115	115	8,870,000
Germany	19	19	2,940,000	259	259	28,500,000
Japan	27	27	1,200,000	159	159	10,500,000
Laos	--	--	--	36	36	792,000
Malaysia	--	--	--	19	19	150,000
Norway	--	--	--	31	31	314,000
Singapore	5	5	10,200	6	6	75,200

See footnotes at end of table.

TABLE 4—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN DECEMBER 2020^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–December ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
More than 99.99% silicon:						
Taiwan	31	31	\$3,230,000	279	279	\$30,200,000
Other [12 countries and (or) localities]	(4)	(4)	190,000	14	14	1,280,000
Total	192	192	8,250,000	1,920	1,920	83,200,000
99.00%–99.99% silicon:						
Australia	150	148	302,000	1,980	1,970	4,140,000
Bosnia and Herzegovina	836	828	1,520,000	7,610	7,550	14,000,000
Brazil	1,060	1,050	1,850,000	17,100	17,000	34,200,000
Canada	2,810	2,790	6,520,000	20,800	20,700	48,900,000
Iceland	266	265	401,000	4,300	4,270	6,650,000
Kazakhstan	--	--	--	1,150	1,150	1,770,000
Laos	--	--	--	720	713	1,580,000
Malaysia	--	--	--	9,620	9,530	15,500,000
Norway	672	667	1,810,000	8,690	8,630	22,700,000
Thailand	672	667	1,250,000	1,200	1,190	2,230,000
Other [6 countries and (or) localities]	1	(4)	2,720	504	499	688,000
Total	6,460	6,420	13,600,000	73,600	73,100	152,000,000
Other silicon:						
Australia	177	170	338,000	5,520	5,330	10,900,000
Brazil	563	549	1,170,000	9,220	8,920	19,000,000
Canada	98	96	222,000	718	692	1,410,000
China	46	44	50,000	254	244	277,000
Iceland	--	--	--	281	276	416,000
Japan	31	30	36,600	288	276	377,000
Malaysia	--	--	--	509	496	868,000
Netherlands	--	--	--	208	199	636,000
Norway	119	115	210,000	5,110	4,990	6,950,000
Sweden	--	--	--	209	200	227,000
Other [9 countries and (or) localities]	2	2	4,750	368	358	1,250,000
Total	1,040	1,010	2,030,000	22,700	22,000	42,300,000
Total silicon metal	7,690	7,620	23,900,000	98,200	97,000	278,000,000

-- Zero.

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

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.