

Mineral Industry Surveys

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SILICON IN OCTOBER 2021

Domestic production of silicon materials was 36,500 metric tons (t) in October 2021, 8% more than September 2021 production and 36% more than October 2020 production (fig. 1, table 1). Net shipments were 25,300 t, 12% more than shipments in September 2021 and 12% more than shipments in October 2020. Total production and net shipments during the first 10 months of 2021 were 12% more and 6% more, respectively, than those during the same period in 2020 (fig. 1; table 1).

Ending stocks were 12,700 t in October 2021, 12% more than ending stocks in September 2021. Owing to domestic physical inventory adjustments, these were 36% less than those in October 2020 (fig. 1; table 1).

In October 2021, the leading recipients for silicon metal, more than 99.99% silicon trade category, were Japan, Vietnam, and Germany, in descending order (table 3). The leading import sources for silicon metal, 99.00%–99.99% silicon trade category, were Brazil, Canada, and Norway, in descending order, and the leading import sources for ferrosilicon, 55%–80% grade, were Russia, Brazil, and Kazakhstan, in descending order (table 4).

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.

Prices

The average U.S. spot price for silicon metal was 373.75 cents per pound in October 2021, more than double the average price in September 2021 and more than triple the average price in October 2020. The average U.S. spot price for ferrosilicon, 50% grade, was 189.00 cents per pound, unchanged from the average price in September 2021 and 84% more than the average price in October 2020. The average U.S. spot price for ferrosilicon, 75% grade, was 311.63 cents per pound, 42% more than the average price in September 2021 and more than triple that in October 2020 (fig. 2).

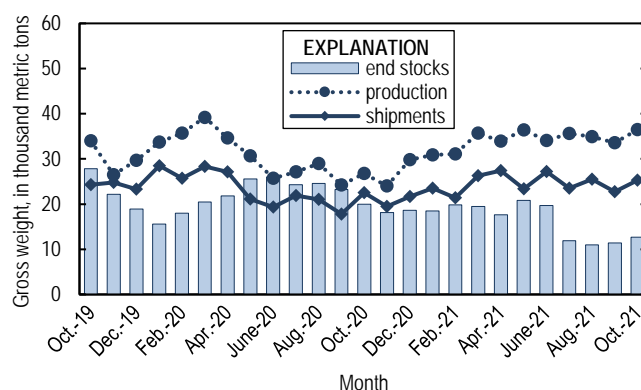


Figure 1. Monthly domestic production of total silicon materials, net shipments, and end stocks from October 2019 through October 2021 (may include revisions to previously published data).

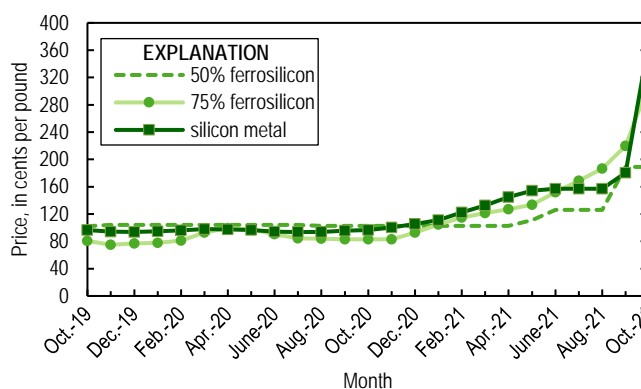


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from October 2019 through October 2021. Source: CRU Group and S&P Global Platts Metals Week.

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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
2020:			
January–December	360,000	275,000	18,600
January–October	307,000 ^r	233,000 ^r	20,000 ^r
October	26,800	22,500	20,000
November	24,000	19,500	18,100
December	29,800	21,700	18,600
2021:			
January	30,900	23,500	18,500
February	31,100	21,400	19,800
March	35,700	26,300	19,500
April	33,900	27,400	17,600
May	36,400	23,400	20,800
June	34,100	27,200	19,700
July	35,600	23,500	11,900 ⁵
August	34,900	25,500	11,000 ⁵
September	33,600	22,700	11,400 ⁵
October	36,500	25,300	12,700 ⁵
January–October	343,000	246,000	12,700 ⁵

^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 U.S. Geological Survey estimates.

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

⁵Decreased end of period stocks attributable to domestic physical inventory adjustment.

TABLE 2
PRICES FOR FERROSILICON AND SILICON METAL IN OCTOBER 2021

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon ¹	cents per pound of contained silicon	188.00	XX	190.00	188.00–189.00–190.00
75% ferrosilicon ²	do.	265.00	311.63	335.00	XX
Silicon metal, 553 grade ³	cents per pound	195.00	373.75	455.00	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, 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 OCTOBER 2021^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–October ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Brazil	--	--	--	31	19	\$48,100
Canada	430	258	\$895,000	3,500	2,100	6,130,000
China	--	--	--	9	5	13,500
Colombia	--	--	--	2	1	9,360
Dominican Republic	--	--	--	172	103	289,000
India	--	--	--	3	2	4,180
Japan	--	--	--	32	19	108,000
Mexico	116	70	218,000	1,170	745	2,570,000
Poland	--	--	--	3	2	5,310
Singapore	--	--	--	15	9	25,600
Total	546	328	1,110,000	4,940	3,010	9,200,000
Other ferrosilicon:						
Belgium	72	32	63,000	665	303	649,000
Brazil	--	--	--	442	221	874,000
Canada	24	7	52,700	212	96	544,000
India	--	--	--	57	28	84,700
Mexico	354	176	769,000	3,110	1,530	6,160,000
Spain	--	--	--	197	99	311,000
Sweden	--	--	--	100	45	186,000
Switzerland	--	--	--	320	141	569,000
Turkey	100	46	188,000	500	227	918,000
United Kingdom	20	9	39,800	358	163	679,000
Other [5 countries and (or) localities]	20	9	36,700	115	45	151,000
Total	590	278	1,150,000	6,080	2,900	11,100,000
Total ferrosilicon	1,140	606	2,260,000	11,000	5,910	20,300,000
Metal:						
More than 99.99% silicon:						
China	95	95	3,080,000	2,950	2,950	68,700,000
Germany	379	379	9,230,000	4,900	4,900	111,000,000
Japan	1,670	1,670	44,400,000	16,700	16,700	381,000,000
Korea, Republic of	112	112	4,870,000	3,710	3,710	94,400,000
Malaysia	264	264	8,780,000	2,050	2,050	56,100,000
Netherlands	--	--	--	315	315	409,000
Norway	61	61	2,310,000	895	895	22,000,000
Singapore	176	176	3,630,000	1,360	1,360	28,300,000
Taiwan	348	348	5,520,000	5,970	5,970	52,900,000
Vietnam	783	783	21,600,000	4,690	4,690	86,100,000
Other [41 countries and (or) localities]	66	66	3,590,000	471	471	18,300,000
Total	3,950	3,950	107,000,000	44,000	44,000	919,000,000
99.00%–99.99% silicon:						
China	--	--	--	12	12	16,900
Dominican Republic	--	--	--	15	15	45,000
El Salvador	--	--	--	3	3	4,320
France	--	--	--	51	51	72,400
Germany	--	--	--	128	127	235,000
Japan	--	--	--	8	7	10,600
Korea, Republic of	--	--	--	42	41	44,800
Mauritania	--	--	--	3	3	4,220
Mexico	8	(4)	61,700	27	19	100,000
Netherlands	--	--	--	365	364	281,000
Other [5 countries and (or) localities]	--	--	--	11	11	15,000
Total	8	(4)	61,700	665	653	829,000

See footnotes at end of table.

TABLE 3—Continued
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN OCTOBER 2021^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–October ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
Other silicon:						
Belgium	98	95	\$135,000	298	290	\$395,000
Canada	2	2	7,330	58	56	180,000
China	8	8	10,900	288	279	380,000
Germany	--	--	--	73	71	104,000
India	103	101	548,000	106	104	560,000
Mexico	21	20	180,000	37	36	255,000
Netherlands	--	--	--	128	124	157,000
South Africa	--	--	--	62	60	\$102,000
Taiwan	--	--	--	57	54	230,000
United Kingdom	(4)	(4)	5,860	48	47	73,000
Other [12 countries and (or) localities]	4	4	40,000	70	68	408,000
Total	236	230	927,000	1,220	1,190	2,840,000
Total silicon metal	4,190	4,180	108,000,000	45,900	45,800	922,000,000

-- 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 OCTOBER 2021^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–October ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
China	--	--	--	160	99	\$364,000
France	33	20	\$100,000	339	205	952,000
Germany	--	--	--	1	1	2,120
Russia	--	--	--	8	4	19,600
South Africa	17	12	37,300	53	34	117,000
Total	50	31	138,000	561	342	1,450,000
55%–80% silicon, other:						
Brazil	1,930	1,450	3,030,000	16,000	12,000	20,900,000
Canada	1,050	761	2,340,000	10,100	7,350	21,600,000
France	227	155	560,000	1,420	975	3,590,000
Iceland	83	63	253,000	5,320	4,100	9,330,000
Kazakhstan	1,190	891	3,810,000	13,100	10,000	26,200,000
Malaysia	50	38	110,000	12,300	9,110	17,200,000
Norway	858	664	1,920,000	5,530	4,260	8,820,000
Paraguay	--	--	--	1,830	1,380	2,210,000
Russia	17,800	13,500	83,700,000	58,900	44,800	155,000,000
South Africa	51	37	81,500	2,240	1,600	3,710,000
Other [11 countries and (or) localities]	1,400	1,020	2,440,000	3,510	2,590	7,420,000
Total	24,600	18,600	98,300,000	130,000	98,200	276,000,000
80%–90% ferrosilicon, Germany	--	--	--	27	22	25,500
More than 90% ferrosilicon:						
Canada	--	--	--	1	1	18,000
China	--	--	--	15	14	59,100
Total	--	--	--	16	15	77,100
Magnesium ferrosilicon:						
Argentina	38	8	31,200	323	114	284,000
Brazil	33	15	44,100	824	339	982,000
Canada	1,100	506	1,950,000	9,540	4,400	16,600,000
China	--	--	--	34	17	70,100
Germany	2	1	3,500	113	46	235,000
India	34	15	73,900	523	239	974,000
Panama	--	--	--	49	22	36,700
Russia	60	29	174,000	80	38	215,000
South Africa	--	--	--	130	61	85,200
Total	1,270	574	2,280,000	11,600	5,280	19,400,000
Other ferrosilicon:						
Canada	738	226	943,000	6,470	2,070	8,410,000
China	--	--	--	58	26	83,900
France	--	--	--	38	18	101,000
Germany	31	13	53,800	39	17	85,400
Mexico	4	2	11900	11	5	31,200
Russia	--	--	--	142	68	304,000
Slovakia	50	22	87,300	338	114	594,000
South Africa	--	--	--	85	11	125,000
Spain	--	--	--	25	11	42,500
Total	822	263	1,100,000	7,200	2,340	9,780,000
Total ferrosilicon	26,700	19,500	102,000,000	149,000	106,000	307,000,000

See footnotes at end of table.

TABLE 4—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN OCTOBER 2021^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–October ³		Value
				Gross weight	Contained weight	
Metal—Continued:						
More than 99.99% silicon:						
Brazil	76	76	\$206,000	1,230	1,230	\$2,960,000
China	4	4	462,000	39	39	3,320,000
Germany	41	41	5,310,000	439	439	45,300,000
Japan	24	24	1,320,000	153	153	10,300,000
Korea, Republic of	(4)	(4)	9,240	23	23	214,000
Malaysia	--	--	--	86	86	994,000
Norway	--	--	--	7	7	108,000
Taiwan	61	61	7,830,000	434	434	43,000,000
Thailand	144	144	399,000	192	192	528,000
Vietnam	(4)	(4)	31,100	96	96	272,000
Other [11 countries and (or) localities]	(4)	(4)	834,000	10	10	1,720,000
Total	352	352	16,400,000	2,710	2,710	109,000,000
99.00%–99.99% silicon:						
Australia	--	--	--	3,080	3,060	7,500,000
Brazil	5,140	5,100	12,500,000	22,700	22,500	50,800,000
Canada	1,590	1,580	3,950,000	22,900	22,800	54,900,000
China	--	--	--	6	6	24,500
Germany	--	--	--	11	11	32,900
Malaysia	--	--	--	116	115	214,000
Norway	1,250	1,240	3,220,000	7,370	7,330	18,800,000
Switzerland	96	95	254,000	116	115	307,000
Thailand	580	576	1,560,000	4,050	4,030	10,200,000
Vietnam	--	--	--	67	67	165,000
Other [2 countries and (or) localities]	--	--	--	(4)	(4)	13,700
Total	8,660	8,590	21,500,000	60,400	60,000	143,000,000
Other silicon:						
Australia	243	236	791,000	2,720	2,660	6,970,000
Brazil	484	471	1,240,000	6,760	6,650	16,000,000
Canada	--	--	--	172	166	416,000
China	140	134	155,000	281	270	352,000
France	--	--	--	371	359	691,000
Germany	--	--	--	233	226	678,000
Japan	29	28	45,400	146	140	188,000
Norway	20	19	35,000	120	115	357,000
South Africa	413	406	789,000	4,950	4,810	8,520,000
Thailand	--	--	--	336	331	602,000
Other [8 countries and (or) localities]	--	--	--	363	353	862,000
Total	1,330	1,290	3,050,000	16,500	16,100	35,600,000
Total silicon metal	10,300	10,200	40,900,000	79,600	78,800	287,000,000

-- 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.