

Mineral Industry Surveys

For information, contact:

Emily K. Schnebele, Silicon Commodity Specialist
National Minerals Information Center
Telephone: (703) 648-4945
Email: eschnebele@usgs.gov

Joshua Braunstein (Data)

Telephone: (703) 648-7958

Email: jbrownstein@usgs.gov

Internet: [https://www.usgs.gov/centers/](https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys)

[national-minerals-information-center/mineral-industry-surveys](https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys)

SILICON IN SEPTEMBER 2023

Domestic production and net shipments of silicon materials in September 2023 were withheld to avoid disclosing proprietary data (table 1). Ending stocks in September 2023 were 25,900 metric tons (t), 3% less than those in August 2023.

On a contained weight basis, total ferrosilicon imports were 6,150 t in September 2023, 19% less than those in August 2023 and 9% less than those in September 2022 (fig. 1, table 4). Total silicon metal imports, on a contained weight basis were 5,620 t in September 2023, 31% less than those in August 2023 and 20% less than those in September 2022.

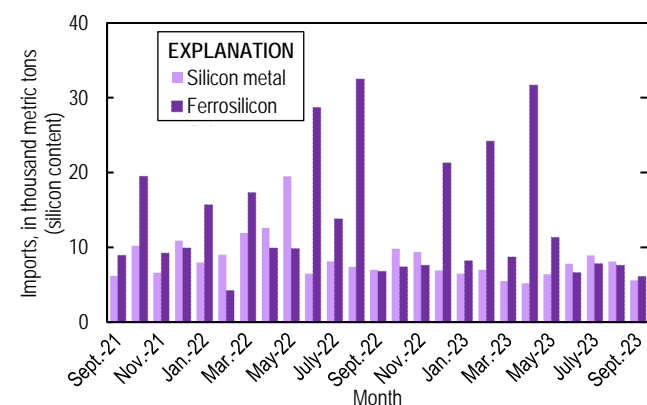


Figure 1. Ferrosilicon and silicon metal imports (excluding solar and semiconductor grades) from September 2021 through September 2023. Source: U.S. Census Bureau.

In September 2023, on a contained-weight basis in descending order of quantity, the leading export destinations for silicon metal, more than 99.99% silicon trade category, were Vietnam, Japan, and Malaysia (table 3). In September 2023, on a contained-weight basis in descending order of quantity, leading import sources for ferrosilicon, 55%–80% grade, were Malaysia, Iceland, and Brazil, and the leading import sources for silicon metal, 99.00%–99.99% silicon trade category, were Canada, Brazil, and Laos (table 4).

Prices

The average U.S. spot price for silicon metal was 154.00 cents per pound in September 2023, 4% less than the average price in August 2023 and 51% less than the average price in September 2022. The average U.S. spot price for ferrosilicon, 75% grade, was 126.00 cents per pound, 8% more than the average price in August 2023 and 56% less than the average price in September 2022 (fig. 2, table 2). The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022 and no other published sources were available.

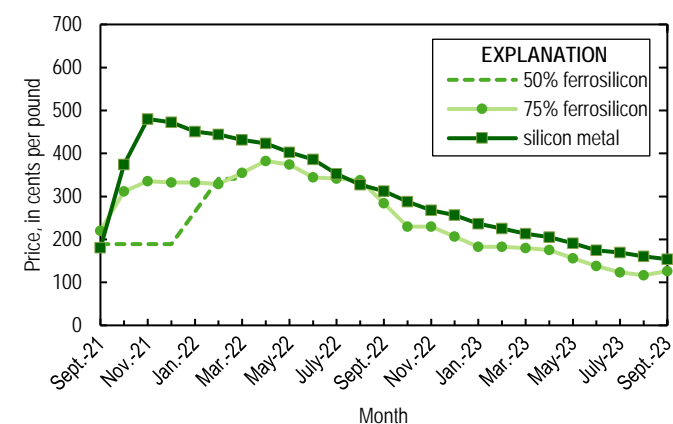


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon, 50% and 75% grades, contained silicon, from September 2021 through September 2023. The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022. Source: CRU Group and S&P Global Platts Metals Week.

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/national-minerals-information-center/minerals-information-publication-list-services>.

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
2022:			
January–December	348,000	249,000	21,600
January–September	W	W	W
September	W	15,700	W
October	25,500	17,100	24,700
November	22,600	20,600	22,800
December	19,900	W	21,600
2023:			
January	26,600	W	21,700
February	W	19,500	19,400
March	W	22,500	23,400
April	W	21,700	24,700
May	W	20,400	23,400
June	W	18,600	27,200
July	W	W	26,500
August	W	20,700	26,600
September	W	W	25,900
January–September	W	W	25,900

W Withheld to avoid disclosing company proprietary data.

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 SEPTEMBER 2023

		Low	Average	High	Average low, mid, and high
Ferrosilicon (75%) ¹	do.	122.00	126.00	127.00	XX
Silicon metal, 553 grade ²	cents per pound	150.00	154.00	161.00	XX

do. Ditto. NA Not available. XX Not applicable.

¹S&P Global Platts Metals Week, in U.S. warehouse, U.S. origin and imported material. Average price reported for all transactions during the month.

²S&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 SEPTEMBER 2023^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–September ³		
				Gross weight	Silicon content	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	--	--	--	214	135	\$195,000
Canada	108	65	\$224,000	2,060	1,230	4,180,000
France	--	--	--	52	35	114,000
Germany	--	--	--	80	62	177,000
India	--	--	--	66	43	154,000
Japan	--	--	--	24	14	37,500
Mexico	--	--	--	1,930	1,260	3,150,000
Netherlands	152	104	219,000	495	297	284,000
Thailand	--	--	--	78	47	184,000
Turkey	--	--	--	305	268	942,000
Other [2 countries and (or) localities]	--	--	--	18	11	28,900
Total	260	169	443,000	5,320	3,400	9,440,000
Other ferrosilicon:						
Belgium	36	16	34,000	252	110	320,000
Brazil	--	--	--	175	87	641,000
Canada	4	2	4,540	424	101	637,000
China	--	--	--	2	1	4,270
Germany	--	--	--	60	27	111,000
Mexico	64	26	191,000	520	235	1,840,000
Spain	--	--	--	60	30	159,000
Switzerland	--	--	--	20	9	37,800
Turkey	--	--	--	220	99	515,000
Total	104	44	229,000	1,730	698	4,270,000
Total ferrosilicon	364	213	672,000	7,060	4,100	13,700,000
Metal:						
More than 99.99% silicon:						
China	55	55	2,600,000	894	894	36,900,000
Denmark	20	20	2,960,000	156	156	18,500,000
Germany	143	143	6,580,000	2,020	2,020	80,800,000
Japan	744	744	35,200,000	7,160	7,160	341,000,000
Korea, Republic of	42	42	2,320,000	467	467	21,500,000
Malaysia	179	179	6,180,000	1,260	1,260	48,300,000
Singapore	52	52	1,320,000	1,070	1,070	33,100,000
Taiwan	120	120	1,780,000	2,060	2,060	43,100,000
Turkey	165	165	5,090,000	514	514	17,000,000
Vietnam	1,030	1,030	25,500,000	12,000	12,000	365,000,000
Other [28 countries and (or) localities]	39	39	821,000	302	302	16,400,000
Total	2,590	2,590	90,300,000	27,900	27,900	1,020,000,000
99.00%–99.99% silicon:						
Belgium	43	43	60,000	123	111	167,000
Equatorial Guinea	--	--	--	23	23	32,400
France	--	--	--	42	41	58,600
India	--	--	--	11	11	15,900
Italy	17	17	23,800	17	17	23,800
Japan	--	--	--	10	10	14,200
Korea, Republic of	--	--	--	20	22	31,000
Malaysia	12	12	17,000	37	37	52,700
Norway	--	--	--	33	33	86,300
Taiwan	--	--	--	19	18	26,100
Other [9 countries and (or) localities]	3	3	4,280	24	36	56,800
Total	75	75	105,000	359	359	565,000

See footnotes at end of table.

TABLE 3—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN SEPTEMBER 2023^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–September ³		
				Gross weight	Silicon content	Value
Metal—Continued:						
Other silicon:						
Belgium	(4)	(4)	\$6,680	61	59	\$93,200
Canada	48	47	157,000	1,020	991	3,370,000
China	17	17	22,800	97	94	128,000
Germany	15	14	19,300	205	200	493,000
India	(4)	(4)	3,500	22	21	31,400
Mexico	9	9	31,200	266	259	1,090,000
Netherlands	--	--	--	420	408	339,000
South Africa	26	25	34,500	104	101	137,000
Trinidad and Tobago	--	--	--	40	39	85,300
Vietnam	95	90	1,470,000	491	468	8,970,000
Other [11 countries and (or) localities]	1	1	11,400	24	27	110,000
Total	211	204	1,750,000	2,750	2,670	14,800,000
Total silicon metal	2,880	2,870	92,200,000	31,000	30,900	1,040,000,000

-- 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 SEPTEMBER 2023^{1, 2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–September ³		
				Gross weight	Silicon content	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
Bhutan	--	--	--	54	41	\$93,500
Brazil	--	--	--	513	323	555,000
China	--	--	--	30	17	60,500
France	--	--	--	256	161	1,030,000
India	36	27	\$64,800	312	248	683,000
Kazakhstan	--	--	--	1,300	1,270	2,490,000
Thailand	54	32	124,000	108	65	247,000
Total	90	60	188,000	2,570	2,130	5,160,000
55%–80% silicon, other:						
Brazil	1,620	1,210	2,510,000	23,900	18,000	43,900,000
Canada	1,050	765	3,550,000	11,600	8,440	40,600,000
Egypt	69	49	105,000	711	508	1,110,000
Iceland	1,750	1,350	3,080,000	9,920	7,610	22,000,000
India	146	105	367,000	1,850	1,370	4,080,000
Kazakhstan	50	37	85,000	10,200	7,580	23,300,000
Malaysia	1,890	1,370	3,010,000	15,300	11,300	29,300,000
Paraguay	150	112	296,000	2,060	1,540	4,420,000
Russia	--	--	--	52,100	39,700	134,000,000
Vietnam	40	31	64,400	3,550	2,600	5,660,000
Other [8 countries and (or) localities]	164	121	546,000	2,460	1,790	9,680,000
Total	6,930	5,150	13,600,000	134,000	100,000	318,000,000
More than 90% ferrosilicon, China	--	--	--	16	14	39,300
Magnesium ferrosilicon:						
Brazil	89	40	105,000	2,060	922	3,890,000
Canada	910	419	3,160,000	10,700	4,910	37,100,000
China	--	--	--	202	92	294,000
Germany	--	--	--	230	104	415,000
India	195	87	452,000	1,290	580	3,070,000
Paraguay	--	--	--	77	36	221,000
Thailand	169	80	355,000	726	337	1,470,000
Total	1,360	626	4,070,000	15,300	6,980	46,400,000
Other ferrosilicon:						
Canada	769	274	1,290,000	7,380	2,460	12,600,000
China	45	20	104,000	137	61	278,000
France	--	--	--	41	18	82,500
Germany	--	--	--	23	10	50,400
India	--	--	--	37	18	166,000
Norway	--	--	--	23	12	62,800
Paraguay	20	10	61,000	164	80	488,000
Slovakia	19	9	39,200	36	18	91,400
Spain	--	--	--	68	30	80,300
Turkey	--	--	--	24	11	76,500
Other [2 countries and (or) localities]	--	--	--	24	11	78,400
Total	855	312	1,490,000	7,960	2,730	14,100,000
Total ferrosilicon	9,230	6,150	19,400,000	159,000	112,000	384,000,000
Metal:						
More than 99.99% silicon:						
Brazil	80	80	451,000	984	984	4,240,000
China	3	3	606,000	90	90	17,100,000
Denmark	--	--	--	1	1	122,000
Finland	(4)	(4)	280,000	1	1	569,000
Germany	13	13	3,010,000	506	506	43,500,000
Japan	2	2	529,000	43	43	4,700,000
Norway	--	--	--	39	39	228,000
Poland	--	--	--	(4)	(4)	4,290
Spain	--	--	--	1	1	11,400
Taiwan	12	12	1,450,000	232	232	28,500,000
Other [8 countries and (or) localities]	(4)	(4)	129,000	1	1	293,000
Total	112	112	6,450,000	1,900	1,900	99,300,000
99.00%–99.99% silicon:						
Australia	254	252	813,000	2,310	2,300	9,490,000

See footnotes at end of table.

TABLE 4—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN SEPTEMBER 2023^{1, 2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–September ³		
				Gross weight	Silicon content	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Belgium	--	--	--	4	4	\$26,800
Brazil	1,590	1,580	\$4,630,000	13,600	13,500	51,100,000
Canada	1,990	1,970	8,000,000	19,400	19,300	90,500,000
Germany	--	--	--	289	288	843,000
Iceland	--	--	--	161	160	487,000
Laos	850	845	2,040,000	2,700	2,680	6,990,000
Malaysia	--	--	--	1,070	1,070	4,380,000
Norway	68	68	256,000	4,310	4,290	21,900,000
Thailand	--	--	--	1,600	1,590	5,210,000
Other [3 countries and (or) localities]	--	--	--	2	2	26,400
Total	4,750	4,720	15,700,000	45,500	45,200	191,000,000
Other silicon:						
Belgium	--	--	--	100	96	344,000
Brazil	577	568	1,580,000	7,610	7,450	33,600,000
Canada	--	--	--	2,220	1,990	12,100,000
France	20	20	66,800	137	135	517,000
Iceland	--	--	--	125	96	431,000
Laos	--	--	--	300	296	915,000
Malaysia	125	123	304,000	1,440	1,410	4,010,000
Norway	72	70	197,000	2,120	2,080	8,080,000
South Africa	--	--	--	50	49	145,000
Thailand	--	--	--	240	236	1,180,000
Other [6 countries and (or) localities]	9	9	39,100	129	124	659,000
Total	803	790	2,190,000	14,500	14,000	62,000,000
Total silicon metal	5,670	5,620	24,400,000	61,900	61,100	352,000,000

-- 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.