

Mineral Industry Surveys

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SILICON IN JUNE 2023

Domestic production of silicon materials in June 2023 was withheld to avoid disclosing proprietary data (table 1). Net shipments in June 2023 were 20,100 metric tons (t), essentially unchanged from those in May 2023 and 10% less than those in June 2022. Ending stocks in June 2023 were 25,400 t, 8% more than those in May 2023.

On a contained weight basis, total ferrosilicon imports were 6,610 t in June 2023, 42% less than those in May 2023 and 77% less than those in June 2022 (fig. 1, table 4). Total silicon metal imports, on a contained weight basis were 7,830 t in June 2023, 23% more than those in May 2023 and 21% more than those in June 2022.

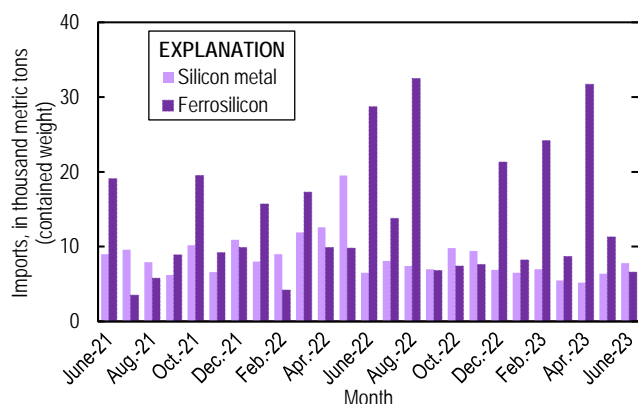


Figure 1. Ferrosilicon and silicon metal imports (excluding solar and semiconductor grades) from June 2021 through June 2023. Source: U.S. Census Bureau.

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

Prices

The average U.S. spot price for silicon metal was 174.50 cents per pound in June 2023, 9% less than the average price in May 2023 and 55% less than the average price in June 2022. The average U.S. spot price for ferrosilicon, 75% grade, was 137.75 cents per pound, 12% less than the average price in May 2023 and 60% less than the average price in June 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.

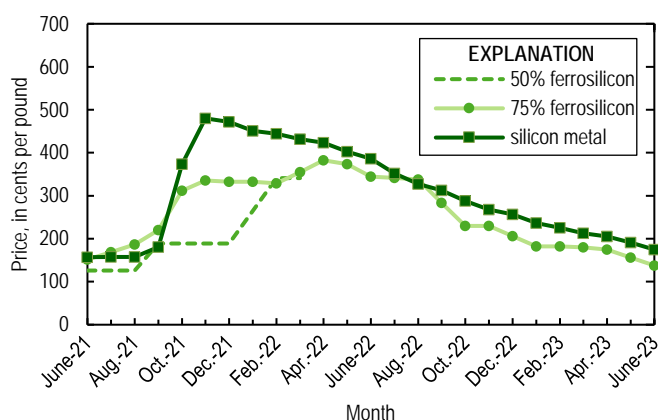


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon, 50% and 75% grades, contained silicon, from June 2021 through June 2023. The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022. Source: CRU Group and S&P Global Platts Metals Week.

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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
2022:			
January–December	348,000	249,000	21,600
January–June	W	W	W
June	W	22,400	W
July	W	W	W
August	W	22,500	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	23,500
June	W	20,100	25,400
January–June	W	W	25,400

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 JUNE 2023

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon ¹	cents per pound of contained silicon	NA	XX	NA	NA
75% ferrosilicon ²	do.	120.00	137.75	145.00	XX
Silicon metal, 553 grade ³	cents per pound	165.00	174.50	190.00	XX

do. Ditto. NA Not available. 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 JUNE 2023^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	--	--	--	137	82	\$115,000
Canada	896	538	\$1,780,000	1,710	1,020	3,440,000
France	52	35	114,000	52	35	114,000
Germany	--	--	--	80	62	177,000
India	--	--	--	42	29	117,000
Israel	--	--	--	3	2	5,000
Mexico	88	53	145,000	770	529	1,340,000
Netherlands	--	--	--	295	177	148,000
Singapore	--	--	--	15	9	23,900
Thailand	--	--	--	74	44	178,000
Turkey	--	--	--	170	160	574,000
Total	1,040	626	2,040,000	3,350	2,150	6,230,000
Other ferrosilicon:						
Belgium	36	16	50,600	144	62	216,000
Brazil	--	--	--	175	87	641,000
Canada	39	20	60,500	316	66	430,000
China	--	--	--	2	1	4,270
Germany	60	27	111,000	60	27	111,000
Mexico	63	26	175,000	323	156	1,210,000
Spain	--	--	--	40	20	107,000
Turkey	20	8	67,600	220	99	515,000
Total	218	98	464,000	1,280	519	3,240,000
Total ferrosilicon	1,250	723	2,500,000	4,630	2,670	9,470,000
Metal:						
More than 99.99% silicon:						
China	102	102	3,550,000	669	669	26,500,000
Germany	481	481	19,600,000	1,420	1,420	54,600,000
Japan	688	688	33,200,000	4,430	4,430	209,000,000
Korea, Republic of	45	45	1,390,000	341	341	14,800,000
Malaysia	269	269	10,300,000	865	865	33,700,000
Singapore	201	201	7,290,000	664	664	20,100,000
Taiwan	212	212	3,830,000	1,740	1,740	38,000,000
Turkey	--	--	--	259	259	9,020,000
United Kingdom	2	2	399,000	104	104	4,730,000
Vietnam	1,050	1,050	30,200,000	7,770	7,770	256,000,000
Other [23 countries and (or) localities]	39	39	2,770,000	227	227	19,100,000
Total	3,090	3,090	113,000,000	18,500	18,500	686,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	80	68	107,000
Equatorial Guinea	--	--	--	23	23	32,400
France	21	21	29,300	42	41	58,600
Germany	4	4	5,860	4	4	5,860
Hong Kong	--	--	--	3	3	4,250
India	--	--	--	11	11	15,900
Japan	6	6	8,400	6	6	8,400
Korea, Republic of	7	7	10,100	20	22	31,000
Pakistan	--	--	--	6	6	8,690
Taiwan	2	2	3,170	17	16	23,300
Other [3 countries and (or) localities]	--	--	--	1	13	23,700
Total	40	40	56,900	213	213	319,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–June ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
Other silicon:						
Belgium	(4)	(4)	\$7,270	38	37	\$57,200
Canada	207	201	684,000	463	449	1,500,000
China	--	--	--	42	40	54,800
Germany	90	88	119,000	190	186	467,000
India	--	--	--	22	21	27,900
Mexico	6	6	21,300	227	220	915,000
Netherlands	--	--	--	363	353	292,000
South Africa	--	--	--	63	61	82,800
Trinidad and Tobago	2	2	26,400	27	26	64,300
Vietnam	--	--	--	340	324	6,500,000
Other [7 countries and (or) localities]	--	--	--	9	13	62,500
Total	306	297	859,000	1,780	1,730	10,000,000
Total silicon metal	3,440	3,430	114,000,000	20,500	20,400	696,000,000

-- 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 JUNE 2023^{1, 2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	Gross weight	January–June ³ Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
China	9	7	\$17,800	30	17	\$60,500
France	18	11	67,500	180	115	749,000
India	58	44	177,000	167	138	405,000
Kazakhstan	--	--	--	1,300	1,270	2,490,000
Total	85	61	263,000	1,670	1,540	3,700,000
55%–80% silicon, other:						
Brazil	3,470	2,620	6,710,000	17,000	12,800	32,400,000
Canada	1,450	1,050	4,850,000	8,360	6,080	29,200,000
Iceland	831	635	1,940,000	4,760	3,670	12,000,000
India	364	269	804,000	1,080	793	2,540,000
Kazakhstan	--	--	--	8,660	6,400	19,700,000
Malaysia	552	417	967,000	11,500	8,510	22,900,000
Paraguay	351	264	700,000	1,450	1,090	3,170,000
Russia	--	--	--	52,000	39,600	134,000,000
South Africa	--	--	--	489	360	2,390,000
Vietnam	275	208	470,000	2,850	2,080	4,570,000
Other [6 countries and (or) localities]	146	107	696,000	1,540	1,110	5,120,000
Total	7,440	5,570	17,100,000	110,000	82,500	268,000,000
More than 90% ferrosilicon, China	--	--	--	16	14	39,300
Magnesium ferrosilicon:						
Brazil	183	82	265,000	1,700	763	3,260,000
Canada	1,210	555	4,090,000	7,670	3,530	26,800,000
China	9	5	20,500	9	5	20,500
Germany	56	25	122,000	230	104	415,000
India	89	41	211,000	555	251	1,360,000
Paraguay	--	--	--	30	14	115,000
Thailand	39	18	73,700	340	156	713,000
Total	1,580	726	4,780,000	10,500	4,820	32,700,000
Other ferrosilicon:						
Canada	878	247	1,500,000	5,210	1,700	8,670,000
China	--	--	--	41	18	71,200
France	--	--	--	41	18	82,500
Germany	8	3	19,200	23	10	50,400
India	--	--	--	18	9	84,000
Italy	--	--	--	4	2	10,900
Norway	--	--	--	23	12	62,800
Paraguay	15	7	71,900	120	59	324,000
Spain	--	--	--	52	23	62,100
Turkey	--	--	--	24	11	76,500
United Kingdom	--	--	--	20	9	67,500
Total	901	257	1,590,000	5,570	1,870	9,560,000
Total ferrosilicon	10,000	6,610	23,800,000	127,000	90,700	314,000,000
Metal:						
More than 99.99% silicon:						
Brazil	112	112	401,000	683	683	2,660,000
China	22	22	3,800,000	85	85	16,300,000
Denmark	1	1	40,800	1	1	69,600
Germany	66	66	4,640,000	375	375	30,200,000
Japan	15	15	830,000	25	25	3,120,000
Korea, Republic of	(4)	(4)	29,100	(4)	(4)	85,100
Norway	--	--	--	39	39	228,000
Poland	--	--	--	(4)	(4)	4,290
Spain	--	--	--	1	1	8,850
Taiwan	29	29	3,520,000	177	177	21,700,000
Other [5 countries and (or) localities]	(4)	(4)	8,390	(4)	(4)	111,000
Total	245	245	13,300,000	1,390	1,390	74,500,000
99.00%–99.99% silicon:						
Australia	107	106	410,000	1,370	1,360	6,280,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	Gross weight	January–June ³ Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Belgium	--	--	--	4	4	\$26,800
Brazil	2,100	2,090	\$8,990,000	7,500	7,450	29,900,000
Canada	1,990	1,980	8,990,000	12,200	12,100	60,100,000
Germany	279	278	795,000	289	288	843,000
Iceland	--	--	--	161	160	487,000
Laos	200	199	584,000	700	696	2,020,000
Malaysia	--	--	--	850	847	3,840,000
Norway	453	450	1,730,000	2,570	2,560	14,800,000
Thailand	431	427	1,220,000	1,050	1,040	3,640,000
Other [3 countries and (or) localities]	--	--	--	2	2	22,200
Total	5,570	5,530	22,700,000	26,700	26,500	122,000,000
Other silicon:						
Belgium	--	--	--	100	96	344,000
Brazil	704	695	2,740,000	5,630	5,510	27,600,000
Canada	493	488	2,240,000	2,220	1,990	12,100,000
France	--	--	--	77	76	289,000
Iceland	--	--	--	125	96	431,000
Laos	--	--	--	300	296	915,000
Malaysia	420	414	1,180,000	910	894	2,790,000
Norway	440	432	1,560,000	1,280	1,250	5,400,000
South Africa	25	24	72,500	50	49	145,000
Thailand	--	--	--	240	236	1,180,000
Other [6 countries and (or) localities]	7	7	55,300	78	74	488,000
Total	2,090	2,060	7,850,000	11,000	10,600	51,800,000
Total silicon metal	7,900	7,830	43,900,000	39,100	38,500	248,000,000

-- 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.