

Mineral Industry Surveys

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SILICON IN MARCH 2023

Domestic production of silicon materials in March 2023 was withheld to avoid disclosing proprietary data (table 1). Net shipments in March 2023 were 22,500 metric tons (t), 15% more than those in February 2023. Ending stocks in March 2023 were 23,400 t, 20% more than those in February 2023 and 10% more than those in March 2022.

On a contained weight basis, total ferrosilicon imports were 8,670 t in March 2023, 64% less than those in February 2023 and 50% less than those in March 2022 (fig. 1, table 4). Total silicon metal imports, on a contained weight basis were 5,540 t in March 2023, 21% less than those in February 2023 and 53% less than those in March 2022.

99.99% silicon trade category, were Canada, Brazil, and Iceland (table 4).

Prices

The average U.S. spot price for silicon metal was 213.00 cents per pound in March 2023, 5% less than the average price in February 2023 and 51% less than the average price in March 2022. The average U.S. spot price for ferrosilicon, 75% grade, was 179.90 cents per pound, essentially unchanged from that in February 2023 and 49% less than the average price in March 2022 (fig. 2). The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022 and no other published sources were available.

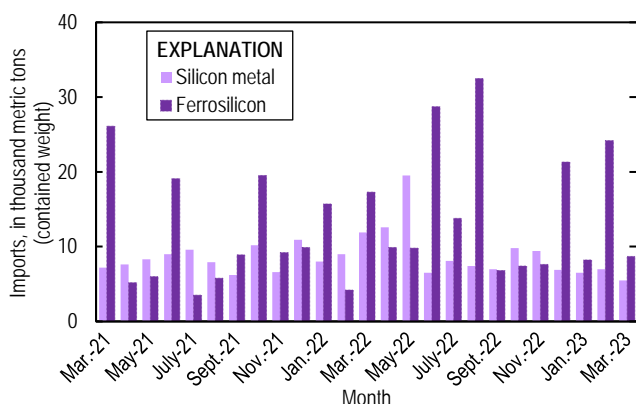


Figure 1. Ferrosilicon and silicon metal imports (excluding solar and semiconductor grades) from March 2021 through March 2023. Source: U.S. Census Bureau.

In March 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 Taiwan (table 3). In March 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%–

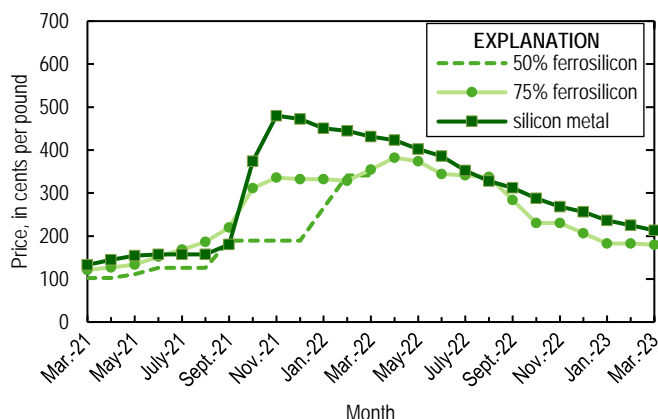


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from March 2021 through March 2023. The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022. Source: CRU Group and S&P Global Platts Metals Week.

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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–March	W	W	21,200 ^r
March	W	W	21,200
April	W	23,500	19,300
May	32,600	22,400	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
January–March	W	W	23,400

^rRevised. 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 MARCH 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.	170.00	179.90	185.00	XX
Silicon metal, 553 grade ³	cents per pound	200.00	213.00	220.00	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 MARCH 2023^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–March ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Canada	102	61	\$233,000	502	301	\$996,000
Germany	--	--	--	80	62	177,000
Israel	--	--	--	3	2	5,000
Mexico	101	78	171,000	202	149	382,000
Thailand	--	--	--	74	44	178,000
Total	203	139	404,000	861	557	1,740,000
Other ferrosilicon:						
Belgium	36	15	34,000	36	15	34,000
Brazil	--	--	--	175	87	641,000
Canada	41	7	57,500	176	31	237,000
China	--	--	--	2	1	4,270
Mexico	60	30	221,000	175	87	685,000
Turkey	60	28	111,000	140	63	300,000
Total	197	80	424,000	703	285	1,900,000
Total ferrosilicon	401	219	828,000	1,560	842	3,640,000
Metal:						
More than 99.99% silicon:						
China	96	96	2,500,000	374	374	12,900,000
Germany	110	110	4,350,000	364	364	14,000,000
Japan	661	661	27,100,000	2,120	2,120	92,800,000
Korea, Republic of	50	50	2,280,000	145	145	6,800,000
Malaysia	57	57	2,000,000	82	82	5,970,000
Singapore	17	17	471,000	253	253	7,060,000
Taiwan	448	448	9,070,000	1,070	1,070	23,100,000
Turkey	--	--	--	94	94	3,300,000
United Kingdom	44	44	998,000	93	93	2,890,000
Vietnam	1,250	1,250	37,800,000	3,590	3,590	128,000,000
Other [16 countries and (or) localities]	63	63	7,900,000	126	126	11,000,000
Total	2,790	2,790	94,500,000	8,300	8,300	307,000,000
99.00%–99.99% silicon:						
Belgium	21	20	23,000	63	51	83,000
Equatorial Guinea	--	--	--	23	23	32,400
Hong Kong	--	--	--	3	3	4,250
India	--	--	--	11	11	15,900
Korea, Republic of	4	4	5,270	13	13	18,200
Mexico	1	1	6,370	1	1	6,370
Taiwan	5	5	6,830	14	14	20,100
Total	30	30	41,500	129	116	180,000
Other silicon:						
Belgium	--	--	--	14	14	18,700
Canada	--	--	--	12	12	27,500
China	42	40	54,800	42	40	54,800
France	4	4	5,240	4	4	5,240
Germany	38	38	248,000	38	38	256,000
India	--	--	--	5	4	6,050
Mexico	17	16	64,400	97	95	466,000
Netherlands	--	--	--	229	222	183,000
South Africa	10	10	13,300	27	26	35,400
Trinidad and Tobago	17	17	27,700	17	17	27,700
Other [3 countries and (or) localities]	3	2	3,380	3	3	15,200
Total	130	127	416,000	488	475	1,100,000
Total silicon metal	2,950	2,950	94,900,000	8,920	8,890	309,000,000

-- 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.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–March ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
France	36	21	\$143,000	108	71	\$460,000
India	--	--	--	37	36	78,300
Kazakhstan	--	--	--	1,300	1,270	2,490,000
Total	36	21	143,000	1,440	1,380	3,030,000
55%–80% silicon, other:						
Brazil	2,580	1,950	4,850,000	9,940	7,510	19,300,000
Canada	1,920	1,410	6,520,000	3,880	2,820	14,100,000
Egypt	286	209	442,000	396	290	637,000
Iceland	1,520	1,170	3,580,000	3,100	2,400	8,030,000
India	215	160	494,000	326	242	851,000
Kazakhstan	1,510	1,160	3,970,000	3,030	2,190	7,710,000
Malaysia	624	472	1,090,000	5,590	4,200	11,900,000
Paraguay	175	129	318,000	677	509	1,580,000
Russia	--	--	--	19,200	14,600	51,300,000
Vietnam	595	383	930,000	1,110	767	1,770,000
Other [5 countries and (or) localities]	414	285	1,280,000	926	660	3,710,000
Total	9,850	7,330	23,500,000	48,100	36,200	121,000,000
More than 90% ferrosilicon, China	--	--	--	16	14	39,300
Magnesium ferrosilicon:						
Brazil	465	210	932,000	1,240	563	2,490,000
Canada	1,400	643	4,860,000	4,060	1,860	14,300,000
Germany	44	20	74,600	138	62	231,000
India	105	47	281,000	115	52	306,000
Paraguay	10	5	39,000	10	5	39,000
Thailand	246	111	517,000	294	134	622,000
Total	2,270	1,040	6,700,000	5,860	2,680	18,000,000
Other ferrosilicon:						
Canada	870	242	1,470,000	2,120	665	4,070,000
China	7	3	10,800	31	14	54,000
France	--	--	--	41	18	82,500
Germany	9	4	21,700	9	4	21,700
India	16	9	81,700	18	9	84,000
Italy	--	--	--	4	2	10,900
Norway	--	--	--	23	12	62,800
Paraguay	12	6	57,600	88	43	181,000
Spain	52	23	62,100	52	23	62,100
United Kingdom	--	--	--	20	9	67,500
Total	966	287	1,700,000	2,400	799	4,690,000
Total ferrosilicon	13,100	8,670	32,000,000	57,900	41,000	147,000,000
Metal:						
More than 99.99% silicon:						
Brazil	109	109	402,000	291	291	1,070,000
China	16	16	3,400,000	20	20	4,580,000
Germany	19	19	4,110,000	134	134	15,400,000
Ireland	--	--	--	(4)	(4)	2,200
Japan	3	3	458,000	7	7	1,690,000
Korea, Republic of	(4)	(4)	12,700	(4)	(4)	12,700
Norway	--	--	--	22	22	106,000
Poland	--	--	--	(4)	(4)	4,290
Spain	--	--	--	(4)	(4)	3,160
Taiwan	23	23	2,850,000	104	104	13,000,000
Other [4 countries and (or) localities]	--	--	--	(4)	(4)	123,000
Total	170	170	11,200,000	580	580	36,100,000
99.00%–99.99% silicon:						
Australia	106	105	530,000	818	813	4,090,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–March ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Brazil	752	746	\$2,960,000	3,180	3,150	\$12,200,000
Canada	1,700	1,690	7,540,000	5,340	5,300	29,000,000
China	1	1	8,070	1	1	8,070
Germany	--	--	--	10	10	47,900
Iceland	161	160	487,000	161	160	487,000
Malaysia	--	--	--	550	547	2,790,000
Norway	130	129	525,000	1,400	1,390	9,980,000
Spain	1	1	6,610	1	1	6,610
Thailand	144	143	470,000	432	428	1,840,000
Total	2,990	2,970	12,500,000	11,900	11,800	60,500,000
Other silicon:						
Belgium	60	57	170,000	80	77	265,000
Brazil	1,110	1,090	4,580,000	4,170	4,060	22,700,000
Canada	1,010	885	5,900,000	1,710	1,480	9,810,000
France	19	19	70,100	19	19	70,100
Iceland	125	96	431,000	125	96	431,000
Laos	140	138	427,000	140	138	427,000
Malaysia	--	--	--	50	50	229,000
Norway	81	79	399,000	529	517	2,770,000
South Africa	25	24	72,500	25	24	72,500
Thailand	--	--	--	240	236	1,180,000
Other [4 countries and (or) localities]	11	11	56,700	20	19	117,000
Total	2,580	2,400	12,100,000	7,100	6,710	38,000,000
Total silicon metal	5,740	5,540	35,900,000	19,600	19,100	135,000,000

-- 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.