

# Mineral Industry Surveys

## For information, contact:

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

Joshua Braunstein (Data)

Telephone: (703) 648-7958

Email: [jbrownstein@usgs.gov](mailto: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 FEBRUARY 2023

Domestic production of silicon materials in February 2023 was withheld to avoid disclosing proprietary data (table 1). Net shipments in February 2023 were 19,500 metric tons (t), 15% less than those in February 2022. Ending stocks in February 2023 were 19,400 t, 10% less than those in January 2023 and 10% more than those in February 2022.

On a contained weight basis, total ferrosilicon imports were 24,200 t in February 2023, more than double those in January 2023 and more than five times those in February 2022 (fig. 1, table 4). Total silicon metal imports, on a contained weight basis were 7,010 t in February 2023, 7% more than those in January 2023 and 22% less than those in February 2022.

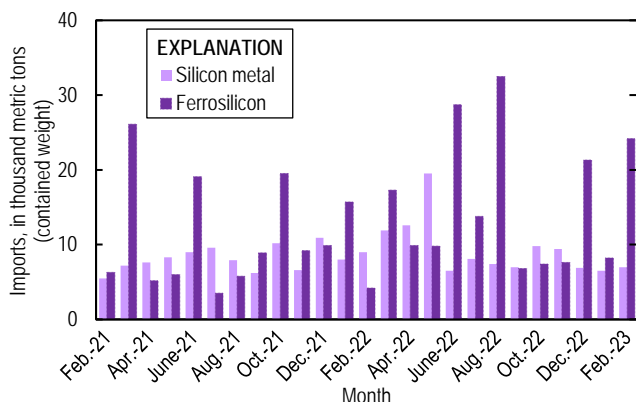


Figure 1. Ferrosilicon and silicon metal imports (excluding solar and semiconductor grades) from February 2021 through February 2023. Source: U.S. Census Bureau.

In February 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 February 2023, on a contained-weight basis in descending order of quantity, leading import sources for ferrosilicon, 55%–80% grade, were Russia, Brazil, and Kazakhstan and the leading import sources for silicon metal,

99.00%–99.99% silicon trade category, were Germany, Canada, and Thailand (table 4).

## Prices

The average U.S. spot price for silicon metal was 225.00 cents per pound in February 2023, 5% less than the average price in January 2023 and 49% less than the average price in February 2022. The average U.S. spot price for ferrosilicon, 75% grade, was 182.50 cents per pound, unchanged from that in January 2023 and 44% less than the average price in February 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.

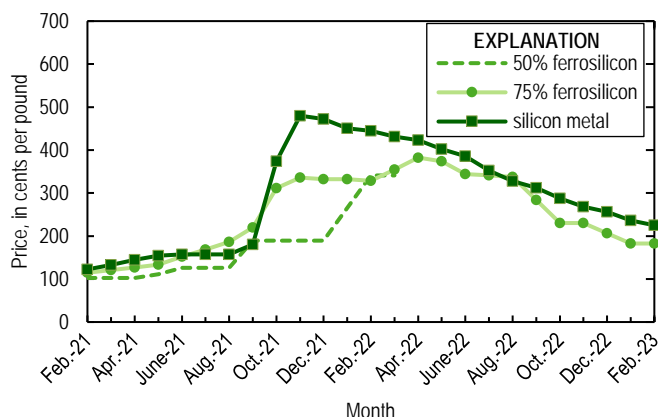


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from February 2021 through February 2023. The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022. Source: CRU Group and S&P Global Platts Metals Week.

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<sup>1, 2, 3</sup>

(Metric tons, gross weight)

	Gross production <sup>4</sup>	Net shipments	Producers' stocks, end of period
2022:			
January–December	348,000	249,000	21,600
January–February	W	47,000 <sup>r</sup>	17,700 <sup>r</sup>
February	W	23,000	17,700
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
January–February	W	W	19,400

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes ferrosilicon, miscellaneous silicon alloys, and silicon metal, excluding semiconductor and solar grades, except where noted.

<sup>3</sup>Includes USGS estimates.

<sup>4</sup>Ferrosilicon production includes material consumed in the production of miscellaneous silicon alloys.

TABLE 2  
PRICES FOR FERROSILICON AND SILICON METAL IN FEBRUARY 2023

		Low	Average	High	Average low, mid, and high
Ferrosilicon:					
50% ferrosilicon <sup>1</sup>	cents per pound of contained silicon	NA	XX	NA	NA
75% ferrosilicon <sup>2</sup>	do.	180.00	182.50	185.00	XX
Silicon metal, 553 grade <sup>3</sup>	cents per pound	215.00	225.00	235.00	XX

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

<sup>1</sup>CRU Group transaction price, duty paid, f.o.b. Pittsburgh, producing plant or Chicago/Pittsburgh warehouse. Average price reported for price range.

<sup>2</sup>S&P Global Platts Metals Week, in U.S. warehouse, U.S. origin and imported material. Average price reported for all transactions during the month.

<sup>3</sup>S&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 FEBRUARY 2023<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–February <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Canada	126	76	\$241,000	400	240	\$763,000
Germany	--	--	--	80	62	177,000
Israel	3	2	5,000	3	2	5,000
Mexico	97	69	191,000	100	71	211,000
Thailand	--	--	--	74	44	178,000
Total	226	146	437,000	658	418	1,330,000
Other ferrosilicon:						
Brazil	--	--	--	175	87	641,000
Canada	25	5	37,900	135	24	180,000
China	--	--	--	2	1	4,270
Mexico	52	26	203,000	115	57	463,000
Turkey	80	35	189,000	80	35	189,000
Total	157	66	430,000	506	205	1,480,000
Total ferrosilicon	383	212	868,000	1,160	623	2,810,000
Metal:						
More than 99.99% silicon:						
China	210	210	7,090,000	278	278	10,400,000
Germany	21	21	994,000	255	255	9,620,000
Japan	616	616	26,000,000	1,460	1,460	65,600,000
Korea, Republic of	8	8	1,050,000	96	96	4,520,000
Norway	--	--	--	53	53	2,200,000
Singapore	92	92	2,500,000	236	236	6,590,000
Taiwan	448	448	9,920,000	619	619	14,000,000
Turkey	--	--	--	94	94	3,300,000
United Kingdom	18	18	1,080,000	48	48	1,890,000
Vietnam	1,290	1,290	48,700,000	2,340	2,340	89,800,000
Other [11 countries and (or) localities]	15	15	2,270,000	35	35	4,910,000
Total	2,710	2,710	99,600,000	5,510	5,510	213,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	43	31	60,000
Equatorial Guinea	--	--	--	23	23	32,400
Hong Kong	3	3	4,250	3	3	4,250
India	11	11	15,900	11	11	15,900
Korea, Republic of	2	2	2,690	9	9	12,900
Taiwan	--	--	--	9	9	13,300
Total	16	16	22,900	98	86	139,000
Other silicon:						
Australia	--	--	--	(4)	(4)	2,630
Belgium	14	14	18,700	14	14	18,700
Canada	9	9	12,100	12	12	27,500
Germany	(4)	(4)	8,850	(4)	(4)	8,850
India	--	--	--	5	4	6,050
Mexico	13	13	58,800	81	78	402,000
Netherlands	114	111	91,400	229	222	183,000
South Africa	17	16	22,000	17	16	22,000
Sweden	--	--	--	(4)	(4)	5,090
United Kingdom	(4)	(4)	4,110	(4)	(4)	4,110
Total	168	163	216,000	358	347	680,000
Total silicon metal	2,900	2,890	99,800,000	5,970	5,950	214,000,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the quantities (gross weight) of the leading countries and (or) localities.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>May include revisions to previously published data.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN FEBRUARY 2023<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–February <sup>3</sup>		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
France	54	40	\$241,000	72	51	\$317,000
India	37	36	78,300	37	36	78,300
Kazakhstan	1,300	1,270	2,490,000	1,300	1,270	2,490,000
Total	1,390	1,350	2,810,000	1,410	1,360	2,880,000
55%–80% silicon, other:						
Brazil	3,830	2,900	7,310,000	7,350	5,560	14,500,000
Canada	1,140	831	4,380,000	1,960	1,420	7,620,000
Germany	77	57	305,000	179	132	792,000
Iceland	1,160	906	2,740,000	1,580	1,220	4,450,000
Kazakhstan	1,510	1,030	3,740,000	1,510	1,030	3,740,000
Malaysia	1,110	822	2,870,000	4,970	3,720	10,800,000
Paraguay	250	189	612,000	502	380	1,260,000
Russia	19,200	14,600	51,300,000	19,200	14,600	51,300,000
South Africa	227	165	1,090,000	227	165	1,090,000
Vietnam	302	227	538,000	515	385	839,000
Other [3 countries and (or) localities]	219	161	758,000	327	240	1,100,000
Total	29,000	21,900	75,600,000	38,300	28,800	97,400,000
More than 90% ferrosilicon, China	--	--	--	16	14	39,300
Magnesium ferrosilicon:						
Brazil	395	181	907,000	777	353	1,560,000
Canada	1,170	536	4,370,000	2,660	1,220	9,440,000
Germany	50	23	84,400	93	42	156,000
India	10	4	25,100	10	4	25,100
Thailand	--	--	--	47	23	105,000
Total	1,620	744	5,390,000	3,590	1,640	11,300,000
Other ferrosilicon:						
Canada	525	172	1,130,000	1,250	423	2,600,000
China	--	--	--	25	11	43,200
France	41	18	82,500	41	18	82,500
India	--	--	--	1	1	2,380
Italy	--	--	--	4	2	10,900
Norway	--	--	--	23	12	62,800
Paraguay	14	7	35,200	75	37	123,000
United Kingdom	20	9	67,500	20	9	67,500
Total	600	206	1,310,000	1,440	512	2,990,000
Total ferrosilicon	32,600	24,200	85,100,000	44,700	32,400	115,000,000
Metal:						
More than 99.99% silicon:						
Brazil	73	73	280,000	182	182	668,000
China	(4)	(4)	31,600	4	4	1,170,000
Finland	--	--	--	(4)	(4)	72,100
Germany	18	18	4,410,000	115	115	11,300,000
Ireland	--	--	--	(4)	(4)	2,200
Japan	3	3	851,000	5	5	1,230,000
Norway	22	22	106,000	22	22	106,000
Poland	(4)	(4)	4,290	(4)	(4)	4,290
Spain	(4)	(4)	3,160	(4)	(4)	3,160
Taiwan	43	43	5,360,000	81	81	10,200,000
Other [3 countries and (or) localities]	(4)	(4)	25,800	(4)	(4)	50,400
Total	161	161	11,100,000	410	410	24,800,000
99.00%–99.99% silicon:						
Australia	--	--	--	712	707	3,560,000

See footnotes at end of table.

TABLE 4—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN FEBRUARY 2023<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	January–February <sup>3</sup>					
	Gross weight	Contained weight	Value	Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Brazil	--	--	--	2,420	2,400	\$9,290,000
Canada	1,720	1,710	\$6,610,000	3,640	3,620	21,400,000
Germany	2,650	2,630	15,000,000	10	10	47,900
Malaysia	--	--	--	550	547	2,790,000
Norway	250	248	1,080,000	1,270	1,260	9,460,000
Thailand	577	574	4,210,000	288	286	1,370,000
Total	5,200	5,160	26,900,000	8,890	8,830	48,000,000
Other silicon:						
Belgium	--	--	--	20	20	94,500
Brazil	1,620	1,580	8,430,000	3,060	2,970	18,100,000
Canada	--	--	--	693	594	3,910,000
Japan	(4)	(4)	5,080	5	5	23,800
Malaysia	50	50	229,000	50	50	229,000
Netherlands	--	--	--	(4)	(4)	2,880
Norway	57	56	210,000	448	438	2,370,000
Spain	4	4	33,400	4	4	33,400
Thailand	--	--	--	240	236	1,180,000
Total	1,730	1,690	8,910,000	4,520	4,320	25,900,000
Total silicon metal	7,090	7,010	47,000,000	13,800	13,600	98,700,000

-- Zero.

<sup>1</sup> Presentation of monthly data is based on the quantities (gross weight) of the leading countries and (or) localities.

<sup>2</sup> Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup> May include revisions to previously published data.

<sup>4</sup> Less than ½ unit.

Source: U.S. Census Bureau.