

# Mineral Industry Surveys

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## SILICON IN NOVEMBER 2023

Domestic production in November 2023 was withheld to avoid disclosing proprietary data. Net shipments of silicon materials in November 2023 were 20,900 metric tons (t), slightly more than those in November 2022 (table 1). Ending stocks in November 2023 were 25,900 t, unchanged from those in October 2023 and 14% more than those in November 2022.

On a contained weight basis, total ferrosilicon imports were 20,800 t in November 2023, 78% more than those in October 2023 and more than double those in November 2022 (fig. 1, table 4). Total silicon metal imports, on a contained weight basis, were 7,610 t in November 2023, 60% more than those in October 2023 and 19% less than those in November 2022.

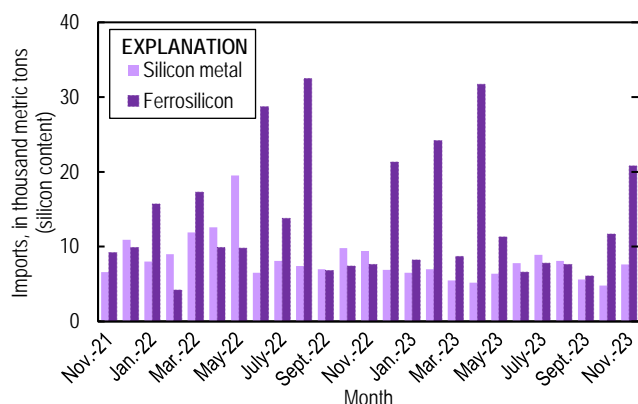


Figure 1. Ferrosilicon and silicon metal imports from November 2021 through November 2023. Source: U.S. Census Bureau.

In November 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 November 2023, on a contained-weight basis in descending order of quantity, leading import sources for ferrosilicon, 55%–80% grade, were Russia, Brazil, and Canada, and the leading import sources for silicon metal, 99.00%–99.99% silicon trade category, were Canada, Brazil, and Norway (table 4).

## Prices

The average U.S. spot price for silicon metal was 142.10 cents per pound in November 2023, 3% less than the average price in October 2023 and 47% less than the average price in November 2022. The average U.S. spot price for ferrosilicon, 75% grade, was 100.60 cents per pound, 14% less than the average price in October 2023 and 56% less than the average price in November 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.

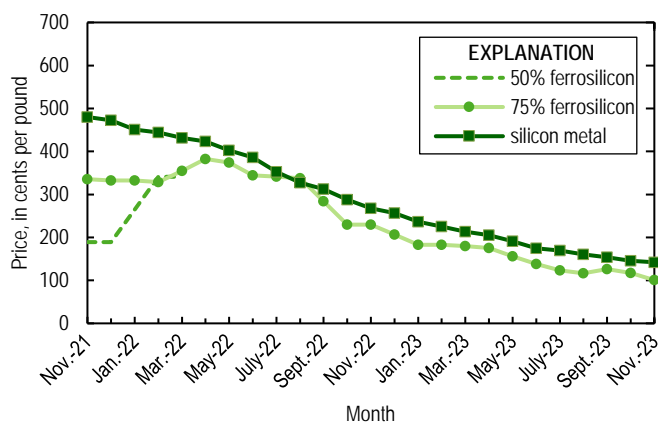


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon, 50% and 75% grades, contained silicon, from November 2021 through November 2023. The average spot prices for ferrosilicon, 50% grade, were discontinued by CRU Group in April 2022. Source: CRU Group and S&P Global Platts Metals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

## Industry News

Following the five-year sunset review initiated in May 2023 of the antidumping (AD) order on silicon metal from China, the U. S. International Trade Commission determined that the revocation of the AD duties on silicon metal from China would likely lead to a continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. The order covered silicon metal containing at least 96% but less than 99.99% of silicon by weight and silicon metal with

a higher aluminum content containing between 89% and 96% of silicon, which are classified by Harmonized Tariff Schedule (HTS) codes 2804.69.1000 and 2804.69.5000. This order did not include semiconductor grade silicon metal, silicon metal containing by weight not less than 99.99% of silicon, HTS code 2804.61.0000. The effective date of the continuation of the AD order was November 17, 2023. This was the fifth sunset review of the AD order that was first initiated in June 1991 (International Trade Administration, 2023; U.S. International Trade Commission, 2023).

### References Cited

International Trade Administration, 2023, Silicon metal from the People's Republic of China—Continuation of antidumping duty order: Federal Register, v. 88, no. 228, November 29, p. 83394–83395. (Accessed January 23, 2024, at <https://www.govinfo.gov/content/pkg/FR-2023-11-29/pdf/2023-26237.pdf>.)

U.S. International Trade Commission, 2023, Silicon metal from China; determination: Federal Register, v. 88, no. 221, November 17, p. 80335–80336. (Accessed January 23, 2024, at <https://www.govinfo.gov/content/pkg/FR-2023-11-17/pdf/2023-25469.pdf>.)

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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–November	W	W	W
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
October	W	W	26,000
November	W	20,900	25,900
January–November	W	W	25,900

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 NOVEMBER 2023

		Low	Average	High	Average low, mid, and high
Ferrosilicon (75%) <sup>1</sup>	do.	95.00	100.60	110.00	XX
Silicon metal, 553 grade <sup>2</sup>	cents per pound	139.00	142.10	147.00	XX

do. Ditto. XX Not applicable.

<sup>1</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>2</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 NOVEMBER 2023<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–November <sup>3</sup>		
				Gross weight	Silicon content	Value
Ferrosilicon:						
More than 55% silicon:						
Belgium	--	--	--	214	135	\$195,000
Canada	268	161	\$495,000	2,390	1,440	4,840,000
France	--	--	--	52	35	114,000
Germany	--	--	--	80	62	177,000
India	72	45	146,000	138	88	300,000
Japan	2	1	3,000	26	16	40,500
Mexico	39	26	58,500	2,890	1,830	4,640,000
Netherlands	--	--	--	668	401	399,000
Thailand	--	--	--	78	47	184,000
Turkey	--	--	--	305	268	942,000
Other [4 countries and (or) localities]	--	--	--	47	28	71,600
Total	381	233	703,000	6,890	4,350	11,900,000
Other ferrosilicon:						
Belgium	18	8	17,000	270	118	337,000
Brazil	--	--	--	194	97	694,000
Canada	59	12	76,500	497	119	766,000
China	--	--	--	2	1	4,270
Germany	--	--	--	60	27	111,000
Mexico	88	44	318,000	670	304	2,350,000
Spain	--	--	--	60	30	159,000
Switzerland	40	18	105,000	60	27	142,000
Turkey	--	--	--	220	99	515,000
Total	205	82	516,000	2,030	822	5,080,000
Total ferrosilicon	586	315	1,220,000	8,920	5,170	17,000,000
Metal:						
More than 99.99% silicon:						
China	1	1	19,500	908	908	38,100,000
Denmark	40	40	5,960,000	216	216	27,600,000
Germany	170	170	7,250,000	2,230	2,230	90,200,000
Japan	628	628	31,600,000	8,460	8,460	406,000,000
Korea, Republic of	127	127	5,110,000	633	633	28,700,000
Malaysia	483	483	2,250,000	2,140	2,140	55,500,000
Singapore	74	74	1,900,000	1,230	1,230	37,200,000
Taiwan	135	135	1,910,000	2,800	2,800	53,600,000
Turkey	45	45	1,260,000	694	694	22,200,000
Vietnam	1,470	1,470	31,500,000	14,800	14,800	425,000,000
Other [30 countries and (or) localities]	3	3	245,000	323	323	17,100,000
Total	3,170	3,170	89,000,000	34,400	34,400	1,200,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	123	111	167,000
Equatorial Guinea	--	--	--	23	23	32,400
France	--	--	--	42	41	58,600
Italy	--	--	--	17	17	23,800
Korea, Republic of	--	--	--	20	22	31,000
Malaysia	--	--	--	49	49	69,700
Norway	--	--	--	33	33	86,300
Singapore	24	24	57,000	27	26	60,700
St. Kitts and Nevis	13	13	18,900	13	13	18,900
Taiwan	--	--	--	21	21	29,600
Other [11 countries and (or) localities]	3	2	3,550	46	57	86,700
Total	40	39	79,400	413	413	665,000

See footnotes at end of table.

TABLE 3—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN NOVEMBER 2023<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–November <sup>3</sup>		
				Gross weight	Silicon content	Value
Metal—Continued:						
Other silicon:						
Belgium	1	1	\$9,100	62	60	\$102,000
Canada	32	31	85,800	1,100	1,060	3,610,000
China	--	--	--	97	94	128,000
Germany	--	--	--	205	201	498,000
India	--	--	--	22	21	31,400
Mexico	24	23	85,800	389	378	1,530,000
Netherlands	57	56	46,900	554	538	448,000
South Africa	--	--	--	152	147	200,000
Trinidad and Tobago	16	16	24,500	57	55	110,000
Vietnam	76	72	1,150,000	643	612	11,300,000
Other [12 countries and (or) localities]	2	2	6,810	27	29	119,000
Total	208	200	1,410,000	3,300	3,200	18,100,000
Total silicon metal	3,420	3,410	90,500,000	38,100	38,000	1,220,000,000

-- 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.

Source: U.S. Census Bureau.

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

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Silicon content	Value	January–November <sup>3</sup>		
				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	55	39	\$196,000	348	222	1,350,000
India	--	--	--	312	248	683,000
Kazakhstan	600	600	807,000	1,900	1,870	3,300,000
South Africa	10	10	21,000	15	15	31,600
Thailand	27	16	52,900	135	81	300,000
Total	692	665	1,080,000	3,300	2,820	6,380,000
55%–80% silicon, other:						
Brazil	1,830	1,380	2,670,000	30,000	22,600	52,800,000
Canada	1,210	887	3,570,000	14,000	10,200	48,100,000
Iceland	332	257	569,000	12,000	9,210	26,000,000
India	160	118	337,000	2,150	1,580	4,750,000
Kazakhstan	--	--	--	12,700	9,290	28,400,000
Malaysia	788	577	1,170,000	19,600	14,300	35,800,000
Paraguay	755	566	1,450,000	2,990	2,240	6,220,000
Russia	19,200	14,600	29,400,000	71,300	54,300	164,000,000
South Africa	78	58	352,000	902	665	4,180,000
Vietnam	795	602	1,240,000	5,010	3,700	7,810,000
Other [9 countries and (or) localities]	149	109	818,000	2,960	2,130	9,220,000
Total	25,300	19,200	41,600,000	174,000	130,000	387,000,000
More than 90% ferrosilicon:						
China	--	--	--	16	14	39,300
India	--	--	--	(4)	(4)	3,080
Total	--	--	--	16	14	42,400
Magnesium ferrosilicon:						
Brazil	401	182	822,000	2,660	1,200	4,990,000
Canada	895	413	2,980,000	12,600	5,810	43,500,000
China	--	--	--	202	92	294,000
Germany	3	1	7,140	233	105	422,000
India	181	82	365,000	1,650	744	3,850,000
Paraguay	12	6	34,800	89	41	256,000
Thailand	31	14	37,800	857	398	1,700,000
Total	1,520	698	4,240,000	18,300	8,390	55,100,000
Other ferrosilicon:						
Argentina	52	23	104,000	52	23	104,000
Canada	738	219	1,220,000	8,940	2,950	15,300,000
China	--	--	--	137	61	278,000
France	--	--	--	41	18	82,500
India	--	--	--	46	22	186,000
Paraguay	--	--	--	190	93	571,000
Slovakia	--	--	--	36	18	91,400
Spain	--	--	--	68	30	80,300
Thailand	--	--	--	27	14	58,900
Turkey	--	--	--	24	11	76,500
Other [4 countries and (or) localities]	--	--	--	70	32	192,000
Total	790	242	1,330,000	9,630	3,270	17,100,000
Total ferrosilicon	28,300	20,800	48,300,000	205,000	145,000	466,000,000

See footnotes at end of table.

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

(Metric tons, unless otherwise specified)

Metal—Continued:						
More than 99.99% silicon:						
Brazil	125	125	661,000	1,200	1,200	5,380,000
China	2	2	174,000	94	94	17,600,000
Denmark	--	--	--	1	1	125,000
Finland	(4)	(4)	683,000	1	1	1,560,000
Germany	48	48	2,250,000	604	604	48,600,000
Japan	1	1	396,000	46	46	5,350,000
Malaysia	43	43	991,000	43	43	991,000
Norway	--	--	--	39	39	228,000
Spain	--	--	--	1	1	11,400
Taiwan	17	17	2,130,000	267	267	32,800,000
Other [9 countries and (or) localities]	(4)	(4)	6,680	1	1	314,000
Total	237	237	7,300,000	2,300	2,300	113,000,000
99.00%–99.99% silicon:						
Australia	--	--	--	2,520	2,500	10,100,000
Brazil	2,450	2,430	7,980,000	17,000	16,800	61,600,000
Canada	3,190	3,170	12,200,000	24,000	23,900	107,000,000
Germany	--	--	--	289	288	843,000
Iceland	--	--	--	161	160	487,000
Laos	--	--	--	2,900	2,880	7,450,000
Malaysia	--	--	--	1,070	1,070	4,380,000
Norway	624	620	2,310,000	5,680	5,640	27,200,000
South Africa	--	--	--	21	21	44,100
Thailand	--	--	--	1,600	1,590	5,210,000
Other [5 countries and (or) localities]	(4)	(4)	4,910	6	6	58,100
Total	6,260	6,220	22,500,000	55,200	54,800	225,000,000
Other silicon:						
Belgium	--	--	--	100	96	344,000
Brazil	757	739	2,440,000	9,040	8,850	37,800,000
Canada	--	--	--	2,220	1,990	12,100,000
France	20	19	70,000	177	173	654,000
Iceland	--	--	--	125	96	431,000
Japan	(4)	(4)	2,120	53	51	237,000
Laos	--	--	--	300	296	915,000
Malaysia	100	96	242,000	1,860	1,820	5,040,000
Norway	203	199	658,000	2,520	2,480	9,310,000
Thailand	100	96	280,000	340	332	1,460,000
Other [6 countries and (or) localities]	5	5	60,000	148	142	695,000
Total	1,190	1,150	3,750,000	16,900	16,300	69,100,000
Total silicon metal	7,680	7,610	33,600,000	74,400	73,400	407,000,000

-- 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.