

Mineral Industry Surveys

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SILICON IN AUGUST 2022

Domestic production of silicon materials was 28,200 metric tons (t) in August 2022, 15% less than July 2022 production and 19% less than August 2021 production (fig. 1, table 1). Net shipments were 21,800 t, 7% more than those in July 2022 and 15% less than those in August 2021. During the first 8 months of 2022, total production was essentially unchanged from the same period in 2021 and net shipments were 3% less than those during the same period in 2021 (fig. 1; table 1). Ending stocks were 24,000 t, 9% less than those in July 2022 and more than double those in August 2021.

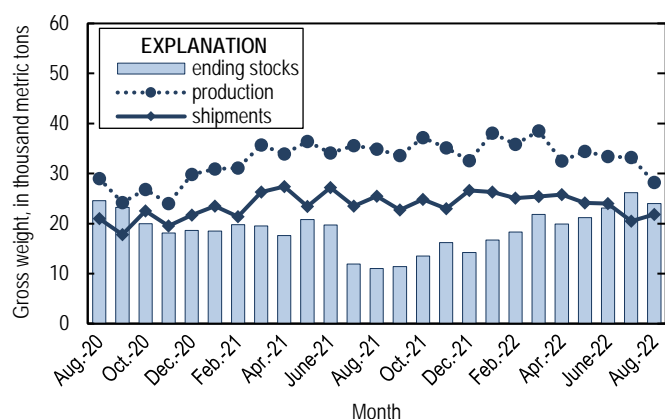


Figure 1. Monthly domestic production of total silicon materials, net shipments, and ending stocks from August 2020 through August 2022 (may include revisions to previously published data).

In August 2022, on a contained weight basis in descending order of quantity, the leading destinations for silicon metal, more than 99.99% silicon trade category, were Japan, Vietnam, and Malaysia (table 3). The leading import sources for silicon metal, 99.00%–99.99% silicon trade category, were Norway, Brazil, and Australia and the leading import sources for ferrosilicon, 55%-80% grade, were Russia, Malaysia, and China (table 4).

Prices

The average U.S. spot price for silicon metal was 327.50 cents per pound in August 2022, 7% less than the average price in July 2022 and more than double the average price in August 2021. The average U.S. spot price for ferrosilicon, 75% grade, was 337.50 cents per pound, essentially unchanged from the average price in July 2022 and 81% more than the average price in August 2021 (fig. 2). The average spot prices for ferrosilicon, 50% grade, have not been available since March 2022.

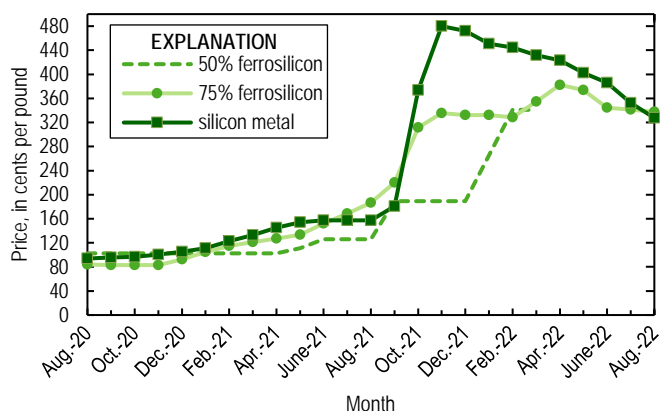


Figure 2. Average monthly spot prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from August 2020 through August 2022. The average spot prices for ferrosilicon, 50% grade, have not been available since March 2022. Source: CRU Group and S&P Global Platts Metals Week.

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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
2021:			
January–December	411,000	295,000	14,200
January–August	273,000	198,000	11,000
August	34,900	25,500	11,000
September	33,600	22,700	11,400
October	37,200	24,800	13,500
November	35,100	23,000	16,200
December	32,600	26,600	14,200
2022:			
January	38,100	26,300	16,700
February	35,800	25,100	18,300
March	38,500	25,400	21,800
April	32,500	25,800	19,900
May	34,400	24,100	21,200
June	33,400	24,000	23,100
July	33,200 ^r	20,500 ^r	26,200 ^r
August	28,200	21,800	24,000
January–August	274,000	193,000	24,000

^rRevised.

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 AUGUST 2022

		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.	335.00	337.50	340.00	XX
Silicon metal, 553 grade ³	cents per pound	315.00	327.50	345.00	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 AUGUST 2022^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–August ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Brazil	9	6	\$14,400	25	15	\$38,400
Canada	121	73	236,000	5,850	3,510	10,100,000
France	--	--	--	17	10	27,000
Germany	--	--	--	152	91	237,000
India	40	28	67,200	40	28	67,200
Mexico	71	43	117,000	1,220	732	1,980,000
Singapore	--	--	--	7	4	10,500
United Arab Emirates	--	--	--	2	1	3,250
Total	241	148	434,000	7,320	4,390	12,500,000
Other ferrosilicon:						
Belgium	90	43	85,500	162	72	158,000
Brazil	38	19	143,000	230	115	618,000
Canada	46	14	73,600	1,270	244	1,680,000
Dominican Republic	--	--	--	63	9	78,800
France	--	--	--	74	32	91,500
Ghana	--	--	--	12	6	48,400
Malaysia	--	--	--	15	7	10,000
Mexico	65	20	150,000	1,510	556	3,660,000
Turkey	--	--	--	40	18	101,000
United Kingdom	--	--	--	97	48	406,000
Other [3 countries and (or) localities]	8	4	20,000	27	10	82,000
Total	246	100	472,000	3,500	1,120	6,930,000
Total ferrosilicon	487	248	906,000	10,800	5,510	19,400,000
Metal:						
More than 99.99% silicon:						
China	310	310	10,800,000	2,380	2,380	79,000,000
Germany	288	288	9,040,000	3,860	3,860	120,000,000
Japan	1,200	1,200	50,800,000	7,240	7,240	314,000,000
Korea, Republic of	80	80	2,720,000	605	605	24,400,000
Malaysia	432	432	19,700,000	2,130	2,130	90,800,000
Singapore	240	240	7,950,000	1,500	1,500	40,400,000
Taiwan	361	361	8,300,000	3,440	3,440	72,200,000
Thailand	(4)	(4)	65,900	234	234	9,330,000
Turkey	53	53	1,930,000	493	493	16,700,000
Vietnam	750	750	27,400,000	8,170	8,170	285,000,000
Other [32 countries and (or) localities]	119	119	4,450,000	551	551	22,600,000
Total	3,830	3,830	143,000,000	30,600	30,600	1,070,000,000
99.00%–99.99% silicon:						
Belgium	--	--	--	124	121	344,000
Czechia	--	--	--	57	57	169,000
France	--	--	--	33	33	47,200
Germany	--	--	--	258	253	310,000
Korea, Republic of	13	13	18,500	13	13	18,500
Mexico	--	--	--	1	1	9,630
Singapore	--	--	--	2	2	3,320
United Kingdom	2	2	2,530	75	75	165,000
Total	15	15	21,100	565	556	1,070,000
Other silicon:						
Belgium	--	--	--	191	186	346,000
Canada	17	16	75,500	141	137	340,000
China	--	--	--	74	72	97,800
Germany	--	--	--	136	132	287,000
Japan	--	--	--	4	4	4,800
Korea, Republic of	3	3	4,360	3	3	4,360
Mexico	118	114	384,000	380	369	1,770,000
Netherlands	--	--	--	205	199	224,000
South Africa	18	17	23,100	73	71	101,000
Trinidad and Tobago	(4)	(4)	3,600	29	29	56,700
Other [7 countries and (or) localities]	(4)	(4)	8,390	13	12	53,400
Total	156	152	499,000	1,250	1,210	3,290,000
Total silicon metal	4,000	4,000	144,000,000	32,400	32,400	1,080,000,000

-- 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 AUGUST 2022^{1, 2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–August ³		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55%–80% silicon, more than 3% Ca:						
China	50	38	\$130,000	1,770	1,020	\$2,850,000
France	90	52	377,000	340	201	1,230,000
Mexico	--	--	--	2	2	6,660
Norway	--	--	--	276	210	1,350,000
South Africa	--	--	--	212	163	621,000
Total	140	90	507,000	2,600	1,600	6,060,000
55%–80% silicon, other:						
Brazil	2,230	1,670	5,940,000	17,200	12,900	44,900,000
Canada	1,080	776	4,520,000	8,580	6,150	33,100,000
China	3,510	2,650	8,600,000	23,300	17,600	52,800,000
Iceland	243	177	1,210,000	990	715	3,160,000
India	1,250	961	5,750,000	4,990	3,820	20,900,000
Kazakhstan	486	330	2,230,000	4,560	3,450	23,500,000
Malaysia	7,040	4,820	24,600,000	20,200	14,700	72,600,000
Norway	395	300	1,210,000	3,230	2,410	12,400,000
Russia	23,300	17,700	103,000,000	67,800	51,600	313,000,000
South Africa	--	--	--	1,440	1,020	3,630,000
Other [10 countries and (or) localities]	583	422	1,620,000	3,710	2,720	9,660,000
Total	40,100	29,800	158,000,000	156,000	117,000	590,000,000
More than 90% ferrosilicon, India	--	--	--	2	2	4,530
Magnesium ferrosilicon:						
Argentina	53	24	89,000	53	24	89,000
Brazil	616	281	1,530,000	3,750	1,720	8,540,000
Canada	1,980	902	5,640,000	12,500	5,750	39,900,000
China	744	333	1,810,000	2,650	1,210	6,370,000
Germany	33	15	42,000	240	108	347,000
India	729	334	2,040,000	2,830	1,290	7,600,000
Norway	431	199	1,550,000	779	359	2,850,000
Russia	--	--	--	93	44	225,000
Slovakia	--	--	--	87	39	113,000
Thailand	364	163	1,010,000	1,130	513	2,830,000
Total	4,950	2,250	13,700,000	24,100	11,100	68,900,000
Other ferrosilicon:						
Brazil	--	--	--	208	91	318,000
Canada	635	232	1,320,000	5,410	1,780	9,990,000
China	64	28	107,000	164	52	301,000
Germany	--	--	--	9	4	39,100
India	--	--	--	19	9	81,700
Norway	--	--	--	18	8	18,000
Paraguay	16	8	56,100	173	87	468,000
Slovakia	166	73	322,000	564	248	1,040,000
Spain	--	--	--	51	22	98,500
United Kingdom	--	--	--	6	3	13,600
Other [1 country or locality]	--	--	--	1	(4)	3,390
Total	881	341	1,810,000	6,620	2,300	12,400,000
Total ferrosilicon	46,100	32,500	174,000,000	189,000	132,000	677,000,000
Metal:						
More than 99.99% silicon:						
Brazil	122	122	435,000	1,380	1,380	4,250,000
China	10	10	1,240,000	324	324	10,000,000
Denmark	1	1	74,700	2	2	240,000
Germany	59	59	4,810,000	485	485	38,000,000
Israel	--	--	--	20	20	70,900
Japan	2	2	557,000	55	55	7,100,000
Norway	--	--	--	69	69	508,000
Taiwan	94	94	12,200,000	440	440	57,100,000
Thailand	--	--	--	72	72	466,000
Turkey	--	--	--	19	19	93,400
Other [10 countries and (or) localities]	1	1	50,000	4	4	374,000
Total	289	289	19,400,000	2,870	2,870	118,000,000
99.00%–99.99% silicon:						
Australia	150	149	652,000	700	695	4,060,000

See footnotes at end of table.

TABLE 4—Continued
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN AUGUST 2022^{1,2}

(Metric tons, unless otherwise specified)

Country or locality	Gross weight	Contained weight	Value	January–August ³		
				Gross weight	Contained weight	Value
Metal—Continued:						
99.00%–99.99% silicon:						
Austria	50	50	\$200,000	50	50	\$200,000
Brazil	294	291	1,260,000	8,950	8,880	35,600,000
Canada	--	--	--	6,940	6,890	23,900,000
Germany	--	--	--	605	602	1,520,000
Malaysia	--	--	--	363	361	1,150,000
Norway	312	310	3,230,000	3,290	3,270	14,800,000
Slovakia	24	24	122,000	314	312	1,510,000
Thailand	--	--	--	1,290	1,280	6,340,000
Turkey	--	--	--	250	249	1,230,000
Other [3 countries and (or) localities]	--	--	--	43	43	130,000
Total	830	824	5,470,000	22,800	22,600	90,400,000
Other silicon:						
Australia	--	--	--	2,840	2,740	9,200,000
Belgium	--	--	--	258	238	383,000
Brazil	3,360	3,260	25,200,000	23,700	22,500	66,100,000
Canada	2,490	2,470	21,100,000	22,200	20,400	130,000,000
Malaysia	--	--	--	290	285	231,000
Netherlands	19	10	103,000	792	723	1,200,000
Norway	496	485	3,570,000	5,060	4,850	25,800,000
Slovakia	20	19	83,300	1,520	1,480	3,520,000
Thailand	--	--	--	3,900	3,680	12,100,000
United Kingdom	--	--	--	190	183	330,000
Other [10 countries and (or) localities]	24	23	85,900	330	318	689,000
Total	6,410	6,260	50,100,000	61,100	57,400	250,000,000
Total silicon metal	7,520	7,380	74,900,000	86,800	82,900	459,000,000

-- 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.