

# Mineral Industry Surveys

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## SILICON IN FEBRUARY 2016

Domestic production of silicon materials was 41,700 metric tons (t) in February 2016, a slight decrease from January 2016 production and a 3% increase from February 2015 production (fig. 1, table 1). Net shipments were 25,800 t, a 3% increase from shipments in January 2016 and a slight increase from shipments in February 2015 (table 1).

Ending stocks were 51,000 t in February 2016, 4% greater than those in January 2016 and 26% more than those in February 2015 (table 1). Stocks included adjustments in inventory and in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other miscellaneous alloys.

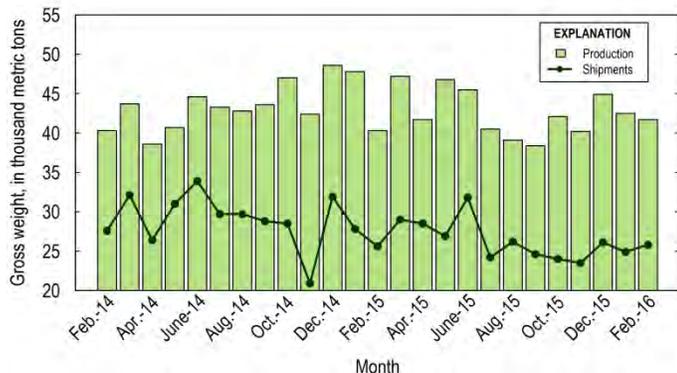


Figure 1. Monthly domestic gross production of total silicon materials and net shipments from February 2014 through February 2016 (may include revisions to previously published data). Source: U.S. Geological Survey.

U.S. imports of ferrosilicon and silicon metal were 20,200 t in February 2016, 52% less than those in January 2016 and 4% less than those in February 2015 (fig. 2, table 4).

The average U.S. spot price for silicon metal was 97.38 cents per pound in February 2016, 4% less than the average price in January 2016, and 31% less than the February 2015 price. The average U.S. spot prices for ferrosilicon, 50% and 75% grades, were the same and slightly less, respectively, than the average prices in January 2016 and were 23% and 28% less, respectively, than their average prices in February 2015 (fig. 3).

Individual production-related statistics were concealed to avoid disclosing company proprietary data. All comparative statistics were calculated based on unrounded, gross weight figures.

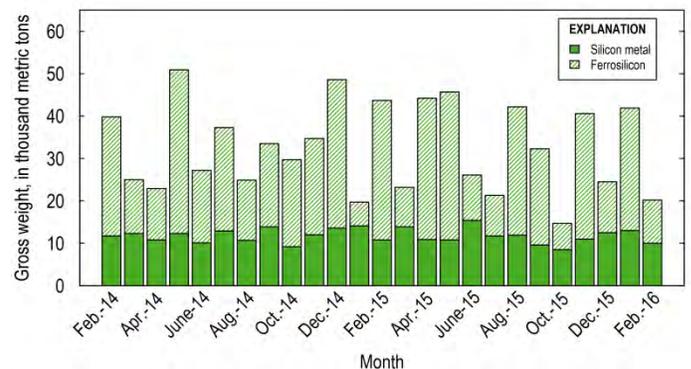


Figure 2. Monthly U.S. imports of ferrosilicon and silicon metal from February 2014 through February 2016. Source: U.S. Census Bureau.

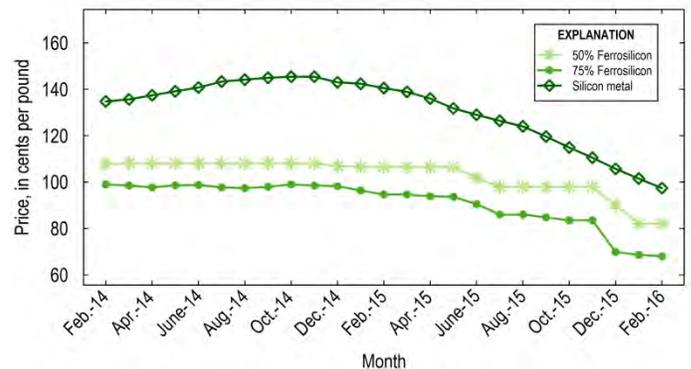


Figure 3. Average monthly prices for silicon metal and ferrosilicon 50% and 75% grades, contained silicon, from February 2014 through February 2016. Source: CRU Ryan's Notes and Platts Metals Week.

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TABLE 1  
 PRODUCTION, SHIPMENTS, AND STOCKS OF SILICON ALLOYS  
 AND METAL IN THE UNITED STATES<sup>1,2</sup>

(Metric tons, gross weight)

	Gross production <sup>3</sup>	Net shipments	Producers' stocks, end of period
<b>2015:<sup>p</sup></b>			
January–December	514,000	318,000	45,100
January–February	88,100	53,400	40,600
February	40,300	25,600	40,600
March	47,200	29,000	41,000
April	41,700	28,500	39,700
May	46,800	26,900	44,000
June	45,500	31,800	41,000
July	40,500	24,200	41,600
August	39,100	26,200	38,900
September	38,400	24,600	37,800
October	42,100	24,000	40,400
November	40,200	23,500	43,100
December	44,900	26,100	45,100
<b>2016:</b>			
January	42,500	24,900	48,900
February	41,700	25,800	51,000
January–February	84,200	50,700	51,000

<sup>p</sup>Preliminary.

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

TABLE 2  
 PRICES FOR FERROSILICON AND SILICON METAL IN FEBRUARY 2016

	Low	Average	High	Average low, mid, and high
<b>Ferrosilicon:</b>				
50% ferrosilicon <sup>1</sup>	80.00	XX	84.00	80.00–82.00–84.00
75% ferrosilicon <sup>2</sup>	67.00	68.00	69.00	XX
Silicon metal, 553 grade <sup>3</sup>	93.00	97.38	101.00	XX

do. Ditto. XX Not applicable.

<sup>1</sup>CRU Ryan's Notes, North American transaction price, duty paid, f.o.b. Pittsburgh, producing plant or Chicago/Pittsburgh warehouse. Average price reported for price range.

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

<sup>3</sup>Platts Metals Week, 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 2016<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–February <sup>3</sup>		
				Gross weight	Contained weight	Value
<b>Ferrosilicon:</b>						
<b>More than 55% silicon:</b>						
Canada	120	72	\$187,000	226	136	\$353,000
Mexico	311	187	707,000	632	379	1,440,000
Singapore	6	4	10,100	9	6	19,900
Total	438	263	904,000	868	521	1,810,000
<b>Other ferrosilicon:</b>						
Brazil	20	10	43,400	39	20	86,800
Canada	114	57	118,000	243	121	257,000
Korea, Republic of	60	27	66,000	120	53	132,000
Luxembourg	--	--	--	20	9	29,100
Mexico	91	45	180,000	334	164	706,000
Netherlands	--	--	--	60	26	30,800
Taiwan	3	1	3,750	3	1	3,750
Turkey	140	64	227,000	279	127	445,000
United Kingdom	40	18	69,000	80	37	133,000
Total	468	223	707,000	1,180	558	1,820,000
Total ferrosilicon	906	486	1,610,000	2,050	1,080	3,640,000
<b>Metal:</b>						
<b>More than 99.99% silicon:</b>						
China	25	25	435,000	332	332	12,000,000
Germany	13	13	537,000	27	27	1,110,000
Hong Kong	463	463	4,310,000	577	577	5,320,000
Italy	17	17	522,000	83	83	2,560,000
Japan	1,220	1,220	61,300,000	1,900	1,900	96,500,000
Jordan	60	60	3,420,000	60	60	3,420,000
Korea, Republic of	185	185	5,010,000	544	544	17,100,000
Norway	60	60	1,520,000	170	170	3,280,000
Singapore	(4)	(4)	27,000	72	72	883,000
Taiwan	299	299	7,960,000	1,580	1,580	21,900,000
Other (19 countries)	21	21	2,840,000	81	81	8,600,000
Total	2,360	2,360	87,900,000	5,420	5,420	173,000,000
<b>99.00%–99.99% silicon:</b>						
China	3	3	3,590	3	3	3,590
Germany	159	157	405,000	159	157	405,000
Mexico	2	2	5,750	3	3	8,700
United Kingdom	--	--	--	6	6	8,640
Total	163	162	414,000	170	169	425,000
<b>Other silicon:</b>						
Belgium	109	106	117,000	149	145	166,000
Canada	155	151	291,000	186	181	341,000
China	10	10	13,000	10	10	13,000
Germany	1	1	12,900	20	19	37,300
Hong Kong	26	25	98,700	26	25	98,700
Israel	--	--	--	8	8	10,800
Korea, Republic of	--	--	--	14	14	18,400
Mexico	1	(4)	10,200	5	5	36,200
South Africa	10	9	16,800	10	9	16,800
United Kingdom	17	17	22,700	17	17	22,700
Other (1 country)	--	--	--	(4)	(4)	3,100
Total	329	319	582,000	445	432	763,000
Total silicon metal	2,850	2,840	88,900,000	6,040	6,030	174,000,000

See footnotes at end of table.

TABLE 3—Continued  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN FEBRUARY 2016

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-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–February" quantities (gross weight) of the leading countries.

<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 2016<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–February <sup>3</sup>		
				Gross weight	Contained weight	Value
<b>Ferrosilicon:</b>						
<b>55%–80% silicon, more than 3% Ca:</b>						
Brazil	861	650	\$925,000	1,210	914	\$1,240,000
China	404	303	359,000	914	693	803,000
France	54	33	151,000	72	43	209,000
South Africa	54	38	92,400	108	74	200,000
Vietnam	79	59	77,000	79	59	77,000
Total	1,450	1,080	1,600,000	2,390	1,780	2,530,000
<b>55%–80% silicon, other:</b>						
Brazil	1,980	1,480	1,720,000	2,510	1,880	2,170,000
Canada	1,380	1,010	2,680,000	2,640	1,950	5,000,000
China	403	304	367,000	680	512	676,000
France	179	119	475,000	179	119	475,000
Iceland	1,740	1,330	1,580,000	2,650	2,020	2,400,000
Malaysia	110	82	130,000	110	82	130,000
Norway	--	--	--	1,500	1,170	1,270,000
Russia	--	--	--	16,400	12,500	15,600,000
Spain	288	218	358,000	288	218	358,000
Venezuela	--	--	--	4,300	3,230	4,380,000
Other (4 countries)	84	59	286,000	110	78	360,000
Total	6,150	4,600	7,590,000	31,300	23,700	32,900,000
<b>More than 90% ferrosilicon:</b>						
Brazil	--	--	--	294	268	275,000
China	--	--	--	16	13	19,400
Total	--	--	--	310	280	294,000
<b>Magnesium ferrosilicon:</b>						
Argentina	57	22	59,500	101	43	126,000
Canada	1,270	572	2,410,000	2,550	1,150	4,830,000
China	38	17	62,100	38	17	62,100
France	26	11	63,100	26	11	63,100
Germany	28	13	24,800	28	13	24,800
Norway	136	64	286,000	210	98	440,000
Total	1,550	699	2,900,000	2,950	1,330	5,540,000
<b>Other ferrosilicon:</b>						
Canada	884	333	993,000	1,840	685	1,960,000
China	93	32	123,000	241	103	286,000
Germany	1	(4)	2,290	1	(4)	2,290
India	9	2	38,100	9	2	38,100
Russia	11	5	16,300	11	5	16,300
Total	998	372	1,170,000	2,100	796	2,310,000
Total ferrosilicon	10,200	6,750	13,300,000	39,100	27,900	43,500,000
<b>Metal:</b>						
<b>More than 99.99% silicon:</b>						
Brazil	680	680	2,270,000	1,180	1,180	3,930,000
China	7	7	212,000	28	28	661,000
Finland	(4)	(4)	47,500	1	1	357,000
Germany	214	214	5,550,000	397	397	10,600,000
Japan	2	2	439,000	4	4	851,000
Korea, Republic of	65	65	1,730,000	129	129	3,680,000
Mexico	(4)	(4)	8,560	(4)	(4)	8,560
Poland	11	11	29,800	11	11	29,800
Taiwan	11	11	251,000	24	24	525,000
United Kingdom	14	14	71,100	14	14	71,100

See footnotes at end of table.

TABLE 4—Continued  
U.S. IMPORTS OF FERROSILICON AND SILICON METAL IN FEBRUARY 2016<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	January–February <sup>3</sup>		
				Gross weight	Contained weight	Value
Metal—Continued:						
More than 99.99% silicon:						
Other (3 countries)	(4)	(4)	\$70,400	(4)	(4)	\$105,000
Total	1,010	1,010	10,700,000	1,790	1,790	20,800,000
99.00%–99.99% silicon:						
Australia	1,280	1,270	2,960,000	3,010	2,990	7,100,000
Brazil	100	99	171,000	527	523	1,390,000
Canada	1,690	1,670	4,350,000	3,190	3,160	8,330,000
Japan	--	--	--	12	(4)	15,800
Kazakhstan	895	891	1,900,000	2,120	2,110	4,630,000
Korea, Republic of	--	--	--	19	19	40,600
Malaysia	116	116	239,000	268	266	556,000
Norway	552	548	1,620,000	828	822	2,470,000
South Africa	2,800	2,770	6,350,000	7,640	7,580	19,900,000
Total	7,420	7,370	17,600,000	17,600	17,500	44,400,000
Other silicon:						
Australia	--	--	--	72	71	204,000
Bhutan	288	284	600,000	518	512	1,100,000
Brazil	569	561	1,600,000	1,230	1,210	3,490,000
Canada	150	147	317,000	250	246	574,000
China	--	--	--	82	80	108,000
Kazakhstan	--	--	--	298	286	659,000
Malaysia	--	--	--	41	40	71,800
Norway	400	390	693,000	958	937	1,670,000
Sweden	81	78	88,300	81	78	88,300
Thailand	61	61	162,000	61	61	162,000
Other (5 countries)	21	21	48,800	21	21	65,500
Total	1,570	1,540	3,510,000	3,610	3,550	8,190,000
Total silicon metal	10,000	9,910	31,800,000	23,000	22,800	73,400,000

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–February" quantities (gross weight) of the leading countries.

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Source: U.S. Census Bureau.