

# Mineral Industry Surveys

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## SILICON IN DECEMBER 2008

Preliminary data for December 2008 indicate that domestic production and net shipments of silicon ferroalloys, on a gross-weight basis, increased by 5% and decreased by 6%, respectively, compared with those in November 2008, according to the U.S. Geological Survey. Ending stocks were 2% higher than those at the end of November. Stocks included adjustments in inventory and in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other miscellaneous alloys.

Production and net shipments of silicon ferroalloys during 2008 increased by 6% and 4%, respectively, compared with the revised amounts of those during 2007 [271,000 metric tons (t), production; 222,000 t, net shipments]. Production-related statistics for silicon metal were concealed to avoid disclosing company proprietary data.

On a gross-weight basis, U.S. ferrosilicon and silicon metal exports in November 2008 were 46% and 14% lower,

respectively, than those in October 2008. U.S. ferrosilicon and silicon metal exports in the first 11 months of 2008 were 16,400 t and 32,400 t, respectively; these were 62% and 25% higher, respectively, than those during the same period in 2007.

On a gross-weight basis, U.S. ferrosilicon and silicon metal imports in November 2008 were 37% and 26% higher, respectively, than those in the prior month. U.S. ferrosilicon and silicon metal imports during the first 11 months of 2008 were 268,000 t and 156,000 t, respectively; these were 7% lower and 14% higher, respectively, than those during the same period in 2007.

### Prices

Prices for silicon materials in December 2008, in cents per pound, silicon content, are listed below.

### 50% Ferrosilicon prices<sup>1</sup>

<u>Price Range</u>	<u>Average Low-High Prices</u>
80.00-90.00	83.75-90.63

### 75% Ferrosilicon prices<sup>2</sup>

<u>Price Range</u>	<u>Average Price</u>
72.00-81.00	75.90

### Silicon metal prices<sup>2</sup>

<u>Price Range</u>	<u>Average Price</u>
135.00-140.00	137.50

<sup>1</sup>Source: Ryan's Notes, North American transaction price. Average prices reported for the price range.

<sup>2</sup>Source: Platts Metals Week, dealer import price. Average price reported for all transactions during the month.

TABLE 1  
U.S. PRODUCTION, SHIPMENTS, AND PRODUCER STOCKS OF SILICON ALLOYS AND METAL IN 2008<sup>1,2,3</sup>

(Metric tons)

Material	Gross production <sup>4</sup>		Net shipments		Stocks,
	December	Year to date	December	Year to date	December 31
Ferrosilicon, all grades <sup>5,6</sup>	21,200	287,000	17,500	231,000	22,700
Silicon metal, excludes semiconductor grades	W	W	W	W	W

W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes U.S. Geological Survey estimates.

<sup>3</sup>Data for silvery pig iron (less than 25% silicon) withheld to avoid disclosing company proprietary data.

<sup>4</sup>Includes in-plant consumption, as in production of magnesium ferrosilicon and other miscellaneous alloys.

<sup>5</sup>Ferrosilicon categories were aggregated to avoid disclosing company proprietary data.

<sup>6</sup>Includes miscellaneous silicon alloys and other silicon products.

TABLE 2  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN NOVEMBER 2008<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Brazil	--	--	--	375	236	\$663,000
Canada	449	269	\$653,000	8,760	5,250	13,400,000
Colombia	--	--	--	26	19	39,100
Costa Rica	--	--	--	3	2	10,000
Germany	--	--	--	22	13	15,800
Honduras	--	--	--	1	1	3,210
Italy	--	--	--	98	64	247,000
Japan	--	--	--	45	(3)	44,700
Malaysia	--	--	--	44	32	72,000
Mexico	191	115	379,000	2,220	1,370	3,900,000
Total	640	384	1,030,000	11,600	6,990	18,400,000
Other ferrosilicon:						
Belgium	--	--	--	160	85	282,000
Brazil	--	--	--	552	276	1,180,000
Canada	86	43	178,000	1,500	751	2,770,000
Colombia	--	--	--	69	32	117,000
Germany	34	17	70,600	452	227	867,000
Italy	33	15	80,600	196	92	445,000
Mexico	88	44	184,000	1,090	538	2,040,000
Netherlands	--	--	--	379	190	651,000
Turkey	--	--	--	223	109	400,000
United Kingdom	--	--	--	114	57	243,000
Other (6 countries)	5	2	15,400	122	55	228,000
Total	246	121	528,000	4,850	2,410	9,220,000
Total ferrosilicon	886	505	1,560,000	16,400	9,400	27,600,000

See footnotes at end of table.

TABLE 2--Continued  
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN NOVEMBER 2008<sup>1, 2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
<b>Metal:</b>						
<b>More than 99.99% silicon:</b>						
Canada	2	XX	\$113,000	195	XX	\$13,500,000
China	409	XX	30,600,000	3,550	XX	405,000,000
Finland	12	XX	1,840,000	186	XX	28,700,000
Germany	354	XX	18,200,000	4,350	XX	261,000,000
Hong Kong	2	XX	854,000	113	XX	35,000,000
Japan	844	XX	89,200,000	7,880	XX	756,000,000
Korea, Republic of	146	XX	11,900,000	1,320	XX	114,000,000
Malaysia	6	XX	1,060,000	121	XX	22,600,000
Norway	308	XX	18,500,000	3,350	XX	191,000,000
Taiwan	131	XX	9,110,000	1,410	XX	104,000,000
Other (38 countries)	67	XX	6,870,000	607	XX	87,600,000
<b>Total</b>	<b>2,280</b>	<b>2,280<sup>c</sup></b>	<b>188,000,000</b>	<b>23,100</b>	<b>23,100<sup>c</sup></b>	<b>2,020,000,000</b>
<b>99.00% - 99.99% silicon:</b>						
China	18	18	25,000	597	592	1,700,000
Dominican Republic	--	--	--	13	13	17,800
Germany	--	--	--	12	11	16,200
Hong Kong	--	--	--	45	44	163,000
Italy	--	--	--	13	13	17,900
Japan	--	--	--	89	88	239,000
Korea, Republic of	--	--	--	15	15	21,000
Mexico	--	--	--	44	44	70,000
Singapore	8	8	11,200	55	54	95,400
United Kingdom	--	--	--	505	501	1,120,000
Other (13 countries)	101	100	271,000	156	156	359,000
<b>Total</b>	<b>127</b>	<b>126</b>	<b>308,000</b>	<b>1,540</b>	<b>1,530</b>	<b>3,810,000</b>
<b>Other silicon:</b>						
Canada	24	24	33,900	585	568	640,000
China	111	104	986	2,330	2,260	11,400,000
Germany	--	--	--	137	133	190,000
Hong Kong	55	53	72	494	479	773,000
Japan	155	150	284,000	2,160	2,100	3,940,000
Korea, Republic of	--	--	--	355	344	1,610,000
Netherlands	--	--	--	110	105	828,000
Singapore	16	16	21,600	148	144	226,000
Taiwan	80	78	170,000	1,060	1,030	2,140,000
United Kingdom	(3)	(3)	3,350	106	103	151,000
Other (21 countries)	4	3	1,070,000	309	297	800,000
<b>Total</b>	<b>445</b>	<b>428</b>	<b>1,590,000</b>	<b>7,790</b>	<b>7,560</b>	<b>22,700,000</b>
<b>Total silicon metal</b>	<b>2,850</b>	<b>2,840</b>	<b>190,000,000</b>	<b>32,400</b>	<b>32,200</b>	<b>2,050,000,000</b>

<sup>c</sup>Estimated. XX Not applicable. -- Zero.

<sup>1</sup>Countries listed are the leading exporters in terms of year-to-date quantities (gross weight).

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

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN NOVEMBER 2007<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
<b>Ferrosilicon:</b>						
<b>55% - 80% silicon, over 3% Ca:</b>						
Brazil	--	--	--	152	92	\$200,000
Canada	--	--	--	68	41	36,800
China	1,510	1,130	\$1,370,000	5,350	3,970	4,830,000
France	126	76	192,000	1,210	752	1,920,000
Sweden	--	--	--	4	2	11,300
Total	1,640	1,200	1,560,000	6,790	4,860	7,010,000
<b>55% - 80% silicon, Other:</b>						
Brazil	65	49	67,200	4,250	3,220	4,210,000
Canada	874	652	1,130,000	12,200	9,020	15,100,000
China	20	15	18,900	119,000	87,900	104,000,000
France	162	106	273,000	1,900	1,310	3,620,000
Germany	57	43	263,000	428	319	2,090,000
Iceland	--	--	--	503	375	494,000
Japan	51	17	116,000	118	64	219,000
Norway	109	80	164,000	2,010	1,480	2,880,000
Russia	7,900	6,020	9,150,000	53,200	39,800	52,600,000
Venezuela	4,000	3,000	3,540,000	39,100	29,300	32,900,000
Other (4 countries)	10	6	59,000	192	133	681,000
Total	13,200	9,980	14,800,000	233,000	173,000	219,000,000
80% - 90% silicon, Germany	--	--	--	34	25	184,000
More than 90% silicon, China	--	--	--	3,000	2,750	2,390,000
<b>Magnesium Ferrosilicon:</b>						
Argentina	144	59	298,000	1,430	605	2,720,000
Brazil	--	--	--	1,800	818	1,580,000
Canada	976	450	924,000	10,100	4,710	10,500,000
China	--	--	--	820	363	875,000
France	--	--	--	137	64	182,000
Germany	--	--	--	79	35	144,000
Japan	15	7	31,300	207	78	458,000
Netherlands	--	--	--	54	25	52,700
Norway	27	13	27,600	1,920	888	1,840,000
Russia	--	--	--	1,400	630	672,000
Other (2 countries)	--	--	--	71	40	96,200
Total	1,160	528	1,280,000	18,000	8,260	19,100,000
<b>Other ferrosilicon:</b>						
Brazil	11	5	24,800	11	5	24,800
Canada	1,150	315	944,000	7,640	1,910	6,900,000
China	1	(3)	5,930	21,000	2,780	6,150,000
France	18	8	17,200	122	57	121,000
Russia	--	--	--	241	117	208,000
Total	1,180	329	992,000	29,000	4,860	13,400,000
Total ferrosilicon	17,200	12,000	18,600,000	287,000	191,000	26,800,000

See footnotes at end of table

TABLE 3--Continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN NOVEMBER 2007<sup>1,2</sup>

(Metric tons, unless otherwise specified)

	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
<b>Metal:</b>						
<b>More than 99.99% silicon:</b>						
Canada	20	XX	\$794,000	62	XX	\$2,070,000
China	7	XX	134,000	81	XX	5,280,000
Germany	143	XX	13,700,000	1,200	XX	124,000,000
Italy	24	XX	2,130,000	257	XX	22,700,000
Japan	39	XX	5,430,000	494	XX	67,000,000
Korea, Republic of	1	XX	289,000	34	XX	7,530,000
Poland	(3)	XX	9,400	13	XX	599,000
Taiwan	--	XX	--	20	XX	1,520,000
Turkey	--	XX	--	13	XX	28,900
United Kingdom	3	XX	541,000	18	XX	1,110,000
Other (15 countries)	2	XX	464,000	28	XX	3,970,000
<b>Total</b>	<b>239</b>	<b>239<sup>c</sup></b>	<b>23,500,000</b>	<b>2,220</b>	<b>2,220<sup>c</sup></b>	<b>235,000,000</b>
<b>99.00% - 99.99% silicon:</b>						
Australia	750	745	1,340,000	13,300	13,200	23,300,000
Brazil	3,740	3,720	7,620,000	42,400	42,100	75,200,000
Canada	1,770	1,760	3,410,000	19,200	19,000	35,000,000
France	893	885	2,110,000	893	885	2,110,000
Germany	--	--	--	354	5 <sup>4</sup>	460,000
Netherlands	--	--	--	312	310	567,000
Norway	1,460	1,450	3,490,000	8,610	8,530	22,000,000
Philippines	21	21	34,200	914	874	1,440,000
South Africa	4,350	4,320	8,290,000	35,900	35,600	62,000,000
Spain	549	545	1,150,000	2,300	2,280	4,890,000
Other (3 countries)	15	7	26,700	78	59	145,000
<b>Total</b>	<b>13,500</b>	<b>13,400</b>	<b>27,500,000</b>	<b>124,000</b>	<b>123,000</b>	<b>227,000,000</b>
<b>Other silicon:</b>						
Brazil	405	400	689,000	2,230	2,180	4,070,000
Canada	373	367	698,000	5,410	5,300	9,630,000
France	95	94	221,000	95	94 <sup>4</sup>	224,000
Germany	(3)	(3)	2,800	411	(3)	451,000
Japan	--	--	--	84	2	97,200
Norway	268	245	585,000	383	338	834,000
Philippines	101	99	144,000	459	450 <sup>4</sup>	691,000
South Africa	--	--	--	40	39	77,600
Sweden	--	--	--	277	73	460,000
United Kingdom	20	20	36,000	406	398	719,000
Other (7 countries)	1	1	2,400	36	32	218,000
<b>Total</b>	<b>1,260</b>	<b>1,230</b>	<b>2,380,000</b>	<b>9,820</b>	<b>8,910</b>	<b>17,500,000</b>
<b>Total silicon metal</b>	<b>15,000</b>	<b>14,900</b>	<b>53,300,000</b>	<b>136,000<sup>*</sup></b>	<b>17,800</b>	<b>480,000,000</b>

<sup>c</sup>Estimated. XX Not applicable. -- Zero.

<sup>1</sup>Presentation of monthly data is based on the year-to-date quantities (gross weight) of the top 10 countries.

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

<sup>3</sup>Less than ½ unit.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

\* Correction posted on May 14, 2009.