

# Mineral Industry Surveys

---

**For information, contact:**

Lisa A. Corathers, Silicon Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4973, Fax: (703) 648-7757  
E-mail: lcorathers@usgs.gov

Martha L. Jackson (Data)  
Telephone: (703) 648-7944  
Fax: (703) 648-7975  
E-mail: mjackson@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## SILICON IN AUGUST 2009

Preliminary data for August 2009 indicate that domestic production and net shipments of silicon ferroalloys, on a gross-weight basis, were 4% higher and 23% lower, respectively, compared with those in July 2009, according to the U.S. Geological Survey. Ending stocks were about the same as those at the end of July. 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 the first 8 months of 2009 decreased by 17% and 7%, respectively, compared with those during the same period in 2008. 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 July 2009 were 82% higher and 41% higher,

respectively, than those in June 2009. U.S. ferrosilicon and silicon metal exports in the first 7 months of 2009 were 31% lower and 3% lower, respectively, than those in the same period of 2008.

On a gross-weight basis, U.S. ferrosilicon and silicon metal imports in July 2009 were 44% higher and 4% lower, respectively, than those in June 2009. U.S. ferrosilicon and silicon metal imports in the first 7 months of 2009 were 74% lower and 44% lower, respectively, than those in the same period of 2008.

### Prices

Prices for silicon materials in August 2009, in cents per pound, silicon content, are listed below.

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

<u>Price Range</u>	<u>Average Low, Mid, and High Prices</u>
80.00-86.00	80.75-83.38-86.00

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

<u>Price Range</u>	<u>Average Price</u>
71.00-79.00	74.25

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

<u>Price Range</u>	<u>Average Price</u>
102.00-107.00	105.38

<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 2009<sup>1,2,3</sup>

(Metric tons)

Material	Gross production <sup>4</sup>		Net shipments		Stocks,
	August	Year to date	August	Year to date	August 31
Ferrosilicon, all grades <sup>5,6</sup>	20,400	161,000	17,200	143,000	20,700
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 JULY 2009<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:						
Argentina	--	--	--	4	3	\$12,000
Brazil	19	11	\$32,100	19	11	32,100
Canada	746	448	650,000	2,740	1,640	3,150,000
Colombia	7	5	16,100	34	29	93,200
Germany	20	15	27,100	20	15	27,100
Malaysia	11	8	20,400	11	8	20,400
Mexico	319	191	539,000	1,370	941	2,080,000
New Zealand	--	--	--	3	3	5,350
Turkey	--	--	--	10	7	22,200
United Kingdom	--	--	--	20	15	12,800
Other (1 country)	--	--	--	3	2	3,270
Total	1,120	679	1,280,000	4,230	2,680	5,460,000
Other ferrosilicon:						
Australia	--	--	--	60	30	121,000
Belgium	40	20	73,800	140	70	269,000
Canada	43	22	69,900	855	427	1,340,000
Egypt	--	--	--	100	46	210,000
Germany	--	--	--	73	37	106,000
Korea, Republic of	108	47	81,000	108	47	81,000
Mexico	56	23	106,000	532	236	1,020,000
Netherlands	--	--	--	60	30	200,000
Spain	--	--	--	180	90	352,000
Turkey	40	18	73,000	129	58	241,000
Other (6 countries)	33	16	46,200	135	67	233,000
Total	320	145	450,000	2,370	1,140	4,170,000
Total ferrosilicon	1,440	824	1,730,000	6,600	3,820	9,630,000

See footnotes at end of table.

TABLE 2--Continued  
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JULY 2009<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>						
Brazil	--	XX	--	72	XX	\$4,730,000
China	653	XX	\$39,100,000	3,260	XX	203,000,000
Denmark	11	XX	2,330,000	61	XX	12,300,000
Germany	626	XX	32,600,000	2,800	XX	147,000,000
Hong Kong	23	XX	1,440,000	62	XX	6,070,000
Japan	794	XX	51,100,000	5,850	XX	421,000,000
Korea, Republic of	272	XX	22,600,000	1,080	XX	86,100,000
Malaysia	6	XX	1,330,000	120	XX	12,600,000
Norway	258	XX	16,200,000	2,620	XX	162,000,000
Taiwan	128	XX	9,610,000	646	XX	43,900,000
Other (34 countries)	18	XX	2,330,000	201	XX	16,800,000
<b>Total</b>	<b>2,790</b>	<b>2,790<sup>e</sup></b>	<b>179,000,000</b>	<b>16,800</b>	<b>16,800<sup>e</sup></b>	<b>1,120,000,000</b>
<b>99.00% - 99.99% silicon:</b>						
Belgium	--	--	--	163	161	465,000
China	27	27	79,300	27	27	79,300
Germany	4	4	5,080	45	44	63,000
Italy	--	--	--	100	99	194,000
Japan	49	49	112,000	71	71	159,000
Korea, Republic of	--	--	--	21	21	29,400
Netherlands	140	139	269,000	240	238	463,000
Singapore	7	7	9,760	37	37	75,000
Taiwan	--	--	--	190	188	524,000
United Kingdom	100	99	192,000	100	99	192,000
Other (12 countries)	4	4	9,750	79	78	158,000
<b>Total</b>	<b>331</b>	<b>329</b>	<b>676,000</b>	<b>1,070</b>	<b>1,060</b>	<b>2,400,000</b>
<b>Other silicon:</b>						
Brazil	--	--	--	23	23	30,600
Canada	6	6	7,830	83	81	156,000
China	23	22	29,800	268	261	565,000
India	--	--	--	23	22	30,400
Japan	345	335	455,000	638	619	1,470,000
Korea, Republic of	--	--	--	216	210	151,000
Netherlands	100	97	112,000	100	97	112,000
South Africa	1	1	14,300	33	32	64,100
Taiwan	141	136	436,000	361	350	809,000
United Kingdom	--	--	--	83	80	212,000
Other (16 countries)	19	18	79,100	94	91	277,000
<b>Total</b>	<b>633</b>	<b>615</b>	<b>1,130,000</b>	<b>1,920</b>	<b>1,870</b>	<b>3,880,000</b>
<b>Total silicon metal</b>	<b>3,750</b>	<b>3,730</b>	<b>181,000,000</b>	<b>19,800</b>	<b>19,700</b>	<b>1,120,000,000</b>

<sup>e</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.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN JULY 2009<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		Value
				Gross weight	Contained weight	
<b>Ferrosilicon:</b>						
<b>55% - 80% silicon, more than 3% Ca:</b>						
Argentina	--	--	--	40	24	\$162,000
Brazil	301	226	\$289,000	301	226	289,000
China	--	--	--	658	479	741,000
France	--	--	--	91	56	356,000
<b>Total</b>	<b>301</b>	<b>226</b>	<b>289,000</b>	<b>1,090</b>	<b>785</b>	<b>1,550,000</b>
<b>55% - 80% silicon, other:</b>						
Brazil	22	17	38,900	113	79	213,000
Canada	796	591	1,430,000	5,080	3,770	9,920,000
China	20	15	23,600	3,640	2,760	3,990,000
France	--	--	--	569	392	1,610,000
Germany	16	12	99,300	148	104	786,000
India	--	--	--	38	28	120,000
Russia	6,560	5,070	5,210,000	20,300	15,600	18,300,000
United Kingdom	--	--	--	26	17	187,000
Venezuela	--	--	--	6,600	4,950	7,710,000
<b>Total</b>	<b>7,420</b>	<b>5,700</b>	<b>6,800,000</b>	<b>36,500</b>	<b>27,700</b>	<b>42,800,000</b>
80% - 90% silicon, Norway	--	--	--	1	1	3,170
<b>Magnesium ferrosilicon:</b>						
Argentina	--	--	--	374	165	1,200,000
Brazil	250	114	418,000	1,450	683	2,490,000
Canada	475	217	964,000	3,220	1,470	6,590,000
China	848	481	980,000	1,490	804	1,860,000
France	36	17	47,800	222	105	294,000
India	2	1	3,340	2	1	3,340
Japan	--	--	--	16 <sup>r</sup>	7	58,400
South Africa	--	--	--	17	8	29,600
<b>Total</b>	<b>1,610</b>	<b>829</b>	<b>2,410,000</b>	<b>6,800</b>	<b>3,250</b>	<b>12,500,000</b>
<b>Other ferrosilicon:</b>						
Brazil	20	3	22,400	58	20	44,400
Canada	314	65	386,000	1,840	626	2,410,000
France	--	--	--	18	9	39,600
Poland	--	--	--	19	4	45,200
Russia	--	--	--	152	71	138,000
<b>Total</b>	<b>334</b>	<b>68</b>	<b>409,000</b>	<b>2,090</b>	<b>730</b>	<b>2,680,000</b>
<b>Total ferrosilicon</b>	<b>9,660</b>	<b>6,830</b>	<b>9,910,000</b>	<b>46,500</b>	<b>32,400</b>	<b>59,600,000</b>

See footnotes at end of table.

TABLE 3--Continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN JULY 2009<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	17	XX	\$827,000	158	XX	\$6,780,000
China	5	XX	110,000	67	XX	1,360,000
Denmark	1	XX	254,000	3	XX	1,250,000
Germany	122	XX	9,260,000	837	XX	60,800,000
Italy	16	XX	958,000	106	XX	5,470,000
Japan	17	XX	1,930,000	136	XX	14,800,000
Korea, Republic of	35	XX	1,320,000	91	XX	3,960,000
Norway	--	XX	--	17	XX	974,000
Spain	1	XX	7,600	4	XX	20,400
Taiwan	7	XX	139,000	28	XX	630,000
Other (9 countries)	(3)	XX	46,200	2	XX	279,000
<b>Total</b>	<b>221</b>	<b>221<sup>e</sup></b>	<b>14,800,000</b>	<b>1,450</b>	<b>1,450<sup>e</sup></b>	<b>96,300,000</b>
<b>99.00% - 99.99% silicon:</b>						
Australia	2,990	2,970	7,600,000	8,450	8,400	22,300,000
Brazil	2,350	2,250	5,180,000	21,000	20,400	50,800,000
Canada	310	307	637,000	3,600	3,570	7,410,000
Japan	--	--	--	14	1	20,000
Laos	810	806	1,610,000	3,870	3,850	8,820,000
Norway	792	787	2,610,000	5,780	5,750	19,000,000
Philippines	95	95	208,000	318	316	659,000
South Africa	1,540	1,530	3,220,000	9,370	9,300	23,400,000
Sweden	--	--	--	32	30	244,000
Ukraine	--	--	--	302	299	800,000
<b>Total</b>	<b>8,880</b>	<b>8,740</b>	<b>21,100,000</b>	<b>52,800</b>	<b>51,900</b>	<b>133,000,000</b>
<b>Other silicon:</b>						
Australia	--	--	--	969	951	2,750,000
Brazil	--	--	--	1,730	1,620	5,380,000
Canada	40	39	29,100	772	756	1,450,000
China	--	--	--	362	357	586,000
Japan	--	--	--	23	22	103,000
Norway	--	--	--	754	618	1,690,000
Philippines	--	--	--	72	70	129,000
Singapore	--	--	--	23	(3)	36,200
South Africa	--	--	--	17	(3)	18,100
Ukraine	--	--	--	318	314	801,000
Other (4 countries)	3	3	16,600	13	13	49,200
<b>Total</b>	<b>43</b>	<b>42</b>	<b>45,700</b>	<b>5,050</b>	<b>4,720</b>	<b>13,000,000</b>
<b>Total silicon metal</b>	<b>9,150</b>	<b>9,010</b>	<b>35,900,000</b>	<b>59,300</b>	<b>58,100</b>	<b>243,000,000</b>

<sup>e</sup>Estimated. <sup>f</sup>Revised. XX Not applicable. -- Zero.

<sup>1</sup>Presentation of monthly data is based on the year-to-date 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>Less than ½ unit.

Source: U.S. Census Bureau.