

Mineral Industry Surveys

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SILICON IN DECEMBER 2006

Preliminary data for December 2006 indicate that domestic production of silicon ferroalloys, on a gross-weight basis, increased by 5% while net shipments decreased slightly compared with those in November 2006, according to the U.S. Geological Survey. Stocks increased by 6% compared with those at the end of the prior month. Stocks included adjustments in inventory and in-plant consumption of ferrosilicon to produce magnesium ferrosilicon and other miscellaneous alloys. Production-related statistics for silicon metal were concealed to avoid disclosing company proprietary data.

Domestic production of ferrosilicon during the fourth quarter of 2006 [66,400 metric tons (t)] was 6% higher compared with that of the third quarter 2006. Domestic shipments (52,400 t) were 7% higher than those shipped during the third quarter 2006. Domestic production of ferrosilicon during 2006 (253,000 t) was 21% higher than that of 2005. Net shipments of ferrosilicon during 2006 (203,000 t) were 16% higher than those

in 2005. All domestic data for ferrosilicon have been combined to avoid disclosing company proprietary data.

Based on a gross-weight comparison of November 2006 export data (table 2) with those of October 2006, ferrosilicon exports decreased by 11%, owing to a decrease in the "more than 55% silicon" ferrosilicon trade category. Silicon metal exports decreased by 6%, owing to a decrease in the "other" silicon metal trade category.

Based on a gross-weight comparison of November 2006 import data (table 3) with those of the prior month, ferrosilicon imports increased by 3%, owing primarily to an increase in the "55%-80%, other" ferrosilicon trade category. Silicon metal imports decreased by 24% during the same period, primarily because of a decrease in the "99.00% to 99.99% silicon" metal trade category.

Prices, cents per pound, silicon content

| | <u>50% Ferrosilicon¹</u> | <u>75% Ferrosilicon²</u> | <u>Silicon Metal²</u> |
|--------------------|-------------------------------------|-------------------------------------|----------------------------------|
| December 7 | 66.00-68.00 | 58.00-60.00 | 90.00-94.00 |
| December 14 | 66.00-68.00 | 58.00-61.00 | 90.00-94.00 |
| December 21 | 67.00-68.00 | 58.00-61.00 | 90.00-94.00 |
| December 28 | 67.00-68.00 | 58.00-61.00 | 90.00-94.00 |

¹Source: Ryan's Notes, North American transaction price.

²Source: Platts Metals Week, dealer import price.

TABLE 1
U.S. PRODUCTION, SHIPMENTS, AND PRODUCER STOCKS OF SILICON ALLOYS AND METAL IN 2006^{1,2,3}

(Metric tons)

| Material | Gross production ⁴ | | Net shipments | | Stocks, |
|--|-------------------------------|--------------|---------------|--------------|-------------|
| | December | Year to date | December | Year to date | December 31 |
| Ferrosilicon, all grades ^{5,6} | 22,900 | 253,000 | 17,600 | 203,000 | 26,100 |
| Silicon metal, excludes semiconductor grades | W | W | W | W | W |

W Withheld to avoid disclosing company proprietary data.

¹Data are rounded to no more than three significant digits.

²Includes U.S. Geological Survey estimates.

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

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

⁵Ferrosilicon categories were aggregated to avoid disclosing company proprietary data.

⁶Includes miscellaneous silicon alloys.

TABLE 2
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN NOVEMBER 2006^{1,2}

(Metric tons, unless otherwise specified)

| Country | Gross weight | Contained weight | Value | Year to date | | |
|-------------------------------|--------------|------------------|-----------|--------------|------------------|-------------|
| | | | | Gross weight | Contained weight | Value |
| Ferrosilicon: | | | | | | |
| More than 55% silicon: | | | | | | |
| Canada | 521 | 312 | \$502,000 | 4,130 | 2,480 | \$4,390,000 |
| Colombia | 19 | 12 | 27,300 | 74 | 52 | 113,000 |
| El Salvador | -- | -- | -- | 5 | 3 | 12,000 |
| Malaysia | -- | -- | -- | 33 | 25 | 46,800 |
| Mexico | 52 | 31 | 74,500 | 1,250 | 750 | 1,610,000 |
| Total | 592 | 356 | 603,000 | 5,490 | 3,310 | 6,170,000 |
| Other ferrosilicon: | | | | | | |
| Brazil | 5 | 3 | 13,800 | 178 | 89 | 223,000 |
| Canada | 266 | 133 | 268,000 | 2,260 | 1,130 | 2,360,000 |
| Colombia | -- | -- | -- | 80 | 37 | 115,000 |
| Finland | -- | -- | -- | 8 | 4 | 8,510 |
| Indonesia | -- | -- | -- | 21 | 10 | 25,100 |
| Korea, Republic of | -- | -- | -- | 2 | 1 | 11,400 |
| Mexico | 48 | 24 | 71,100 | 664 | 331 | 839,000 |
| Spain | -- | -- | -- | 8 | 4 | 9,360 |
| Switzerland | -- | -- | -- | 34 | 17 | 26,700 |
| United Kingdom | -- | -- | -- | 3 | 1 | 4,200 |
| Total | 319 | 160 | 353,000 | 3,260 | 1,630 | 3,620,000 |
| Total ferrosilicon | 911 | 516 | 956,000 | 8,750 | 4,930 | 9,790,000 |

See footnotes at end of table.

TABLE 2--Continued
 U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN NOVEMBER 2006^{1,2}

(Metric tons, unless otherwise specified)

| Country | Gross weight | Contained weight | Value | Year to date | | |
|----------------------------------|--------------|--------------------------|--------------------|---------------|---------------------------|----------------------|
| | | | | Gross weight | Contained weight | Value |
| Metal: | | | | | | |
| More than 99.99% silicon: | | | | | | |
| China | 185 | XX | \$24,300,000 | 1,690 | XX | \$164,000,000 |
| Finland | 11 | XX | 417,000 | 103 | XX | 3,950,000 |
| Germany | 189 | XX | 14,300,000 | 2,110 | XX | 126,000,000 |
| Italy | 10 | XX | 1,050,000 | 134 | XX | 11,000,000 |
| Japan | 589 | XX | 51,600,000 | 6,840 | XX | 529,000,000 |
| Korea, Republic of | 80 | XX | 6,170,000 | 1,040 | XX | 87,800,000 |
| Malaysia | 19 | XX | 2,740,000 | 128 | XX | 18,300,000 |
| Norway | 245 | XX | 11,700,000 | 2,130 | XX | 98,800,000 |
| Taiwan | 61 | XX | 6,500,000 | 541 | XX | 41,500,000 |
| United Kingdom | 13 | XX | 1,610,000 | 116 | XX | 14,100,000 |
| Other (49 countries) | 16 | XX | 1,460,000 | 353 | XX | 24,000,000 |
| Total | 1,420 | 1,420^e | 122,000,000 | 15,200 | 15,200^e | 1,120,000,000 |
| 99.00% - 99.99% silicon: | | | | | | |
| Belarus | -- | -- | -- | 34 | 34 | 37,700 |
| Brazil | 113 | 113 | 306,000 | 952 | 944 | 2,460,000 |
| China | 93 | 92 | 253,000 | 761 | 755 | 2,140,000 |
| Germany | 2 | 2 | 3,420 | 321 | 318 | 887,000 |
| India | -- | -- | -- | 52 | 51 | 150,000 |
| Italy | -- | -- | -- | 143 | 142 | 420,000 |
| Japan | 12 | 12 | 17,000 | 37 | 36 | 45,300 |
| Sweden | -- | -- | -- | 34 | 34 | 47,700 |
| Taiwan | -- | -- | -- | 113 | 112 | 330,000 |
| United Kingdom | -- | -- | -- | 30 | 30 | 42,000 |
| Other (12 countries) | 5 | 5 | 10,600 | 115 | 114 | 180,000 |
| Total | 225 | 224 | 590,000 | 2,590 | 2,570 | 6,740,000 |
| Other silicon: | | | | | | |
| Canada | 77 | 75 | 92,500 | 684 | 664 | 786,000 |
| China | 28 | 27 | 267,000 | 1,380 | 1,320 | 12,900,000 |
| Germany | -- | -- | -- | 695 | 675 | 1,140,000 |
| Hong Kong | (3) | (3) | 5,430 | 105 | 101 | 925,000 |
| Japan | 84 | 81 | 259,000 | 1,280 | 1,230 | 5,320,000 |
| Korea, Republic of | 307 | 298 | 411,000 | 2,490 | 2,420 | 3,420,000 |
| Mexico | 22 | 21 | 35,300 | 113 | 110 | 361,000 |
| Netherlands | 19 | 19 | 226,000 | 244 | 235 | 2,130,000 |
| United Kingdom | 18 | 17 | 23,600 | 67 | 65 | 87,800 |
| Venezuela | -- | -- | -- | 74 | 72 | 105,000 |
| Other (16 countries) | 11 | 11 | 18,800 | 180 | 174 | 686,000 |
| Total | 565 | 550 | 1,340,000 | 7,320 | 7,070 | 27,900,000 |
| Total silicon metal | 2,210 | 2,190 | 124,000,000 | 25,100 | 24,800 | 1,150,000,000 |

^eEstimated. XX Not applicable. -- Zero.

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

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

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN NOVEMBER 2006^{1,2}

(Metric tons, unless otherwise specified)

| Country | Gross weight | Contained weight | Value | Year to date | | |
|---------------------------------------|--------------|------------------|------------|--------------|------------------|-------------|
| | | | | Gross weight | Contained weight | Value |
| Ferrosilicon: | | | | | | |
| 55% - 80% silicon, over 3% Ca: | | | | | | |
| Brazil | -- | -- | -- | 20 | 13 | \$24,500 |
| Canada | -- | -- | -- | 19 | 14 | 10,100 |
| China | -- | -- | -- | 1,740 | 1,270 | 1,290,000 |
| France | 276 | 177 | \$443,000 | 1,230 | 772 | 1,970,000 |
| Total | 276 | 177 | 443,000 | 3,010 | 2,070 | 3,300,000 |
| 55% - 80% silicon, Other: | | | | | | |
| Brazil | 212 | 158 | 210,000 | 3,820 | 2,850 | 3,130,000 |
| Canada | 1,180 | 888 | 1,240,000 | 11,900 | 8,950 | 11,100,000 |
| China | 12,200 | 9,180 | 8,610,000 | 109,000 | 82,100 | 73,300,000 |
| France | 347 | 249 | 646,000 | 3,600 | 2,470 | 6,490,000 |
| Germany | 37 | 28 | 162,000 | 477 | 355 | 2,190,000 |
| Norway | 132 | 94 | 194,000 | 7,080 | 5,250 | 8,920,000 |
| Russia | 5,790 | 4,370 | 4,140,000 | 50,200 | 37,400 | 35,200,000 |
| South Africa | -- | -- | -- | 2,520 | 1,880 | 1,640,000 |
| Ukraine | -- | -- | -- | 3,050 | 2,300 | 1,740,000 |
| Venezuela | -- | -- | -- | 47,900 | 35,900 | 34,500,000 |
| Other (5 countries) | 69 | 50 | 128,000 | 490 | 353 | 769,000 |
| Total | 19,900 | 15,000 | 15,300,000 | 240,000 | 180,000 | 179,000,000 |
| More than 90% silicon, China | -- | -- | -- | 21 | 19 | 6,300 |
| Magnesium ferrosilicon: | | | | | | |
| Argentina | 357 | 159 | 334,000 | 2,380 | 1,060 | 2,230,000 |
| Brazil | 736 | 328 | 694,000 | 2,610 | 1,170 | 2,410,000 |
| Canada | 778 | 362 | 799,000 | 6,970 | 3,250 | 7,100,000 |
| China | -- | -- | -- | 343 | 157 | 340,000 |
| France | 8 | 4 | 11,800 | 995 | 476 | 901,000 |
| India | 20 | 9 | 18,500 | 108 | 54 | 99,500 |
| Netherlands | -- | -- | -- | 409 | 188 | 297,000 |
| Norway | 82 | 37 | 79,900 | 7,760 | 3,570 | 6,980,000 |
| Russia | -- | -- | -- | 2,100 | 943 | 854,000 |
| South Africa | 10 | 5 | 11,900 | 123 | 59 | 145,000 |
| Other (4 countries) | 32 | 16 | 60,500 | 233 | 108 | 449,000 |
| Total | 2,020 | 919 | 2,010,000 | 24,000 | 11,000 | 21,800,000 |
| Other ferrosilicon: | | | | | | |
| Argentina | -- | -- | -- | 60 | 27 | 54,200 |
| Brazil | 20 | 3 | 27,800 | 155 | 26 | 143,000 |
| Canada | 713 | 177 | 622,000 | 8,110 | 2,140 | 6,970,000 |
| China | -- | -- | -- | 20,000 | 4,110 | 6,140,000 |
| France | -- | -- | -- | 113 | 67 | 164,000 |
| India | -- | -- | -- | 71 | 31 | 59,700 |
| United Kingdom | -- | -- | -- | 5 | 2 | 8,840 |
| Total | 733 | 180 | 649,000 | 28,500 | 6,410 | 13,500,000 |
| Total ferrosilicon | 22,900 | 16,300 | 18,400,000 | 296,000 | 199,000 | 218,000,000 |

See footnotes at end of table.

TABLE 3--Continued
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN NOVEMBER 2006^{1,2}

(Metric tons, unless otherwise specified)

| Country | Gross weight | Contained weight | Value | Year to date | | |
|----------------------------|--------------|------------------------|-------------------|----------------|--------------------------|--------------------|
| | | | | Gross weight | Contained weight | Value |
| Metal: | | | | | | |
| More than 99.99% silicon: | | | | | | |
| Canada | -- | XX | -- | 19 | XX | \$30,700 |
| China | 7 | XX | \$409,000 | 66 | XX | 3,650,000 |
| France | 1 | XX | 38,100 | 32 | XX | 2,770,000 |
| Germany | 63 | XX | 5,740,000 | 775 | XX | 64,100,000 |
| Italy | 30 | XX | 3,390,000 | 286 | XX | 28,700,000 |
| Japan | 32 | XX | 2,960,000 | 310 | XX | 26,500,000 |
| Korea, Republic of | 6 | XX | 1,630,000 | 48 | XX | 11,000,000 |
| Poland | -- | XX | -- | 13 | XX | 146,000 |
| Russia | (3) | XX | 66,300 | 11 | XX | 2,800,000 |
| Taiwan | 1 | XX | 13,200 | 10 | XX | 1,070,000 |
| Other (19 countries) | 4 | XX | 413,000 | 53 | XX | 1,750,000 |
| Total | 143 | 143^e | 14,700,000 | 1,620 | 1,620^e | 143,000,000 |
| 99.00% - 99.99% silicon: | | | | | | |
| Australia | 1,370 | 1,350 | 2,200,000 | 11,900 | 11,800 | 18,100,000 |
| Brazil | 3,640 | 3,620 | 5,510,000 | 43,000 | 42,600 | 64,400,000 |
| Canada | 1,810 | 1,790 | 2,910,000 | 17,000 | 16,800 | 27,300,000 |
| China | -- | -- | -- | 83 | 76 | 119,000 |
| Japan | -- | -- | -- | 10 | (3) | 12,800 |
| Norway | 584 | 577 | 1,060,000 | 6,670 | 6,610 | 12,800,000 |
| Philippines | 48 | 48 | 65,700 | 987 | 927 | 1,190,000 |
| South Africa | -- | -- | -- | 33,400 | 33,200 | 52,400,000 |
| Sweden | -- | -- | -- | 25 | 25 | 159,000 |
| United Kingdom | 37 | (3) ⁴ | 48,100 | 467 | 30 | 755,000 |
| Other (2 countries) | -- | -- | -- | (3) | (3) | 9,230 |
| Total | 7,490 | 7,390 | 11,800,000 | 114,000 | 112,000 | 177,000,000 |
| Other silicon: | | | | | | |
| Australia | -- | -- | -- | 240 | 235 | 371,000 |
| Brazil | 1,190 | 1,180 | 1,770,000 | 7,290 | 6,990 | 9,990,000 |
| Canada | 785 | 771 | 1,260,000 | 8,240 | 7,800 | 11,500,000 |
| Italy | -- | -- | -- | 18 | 18 | 23,700 |
| Japan | 4 | 3 | 3,820 | 105 | 13 | 138,000 |
| Norway | -- | -- | -- | 1,060 | 1,040 | 1,660,000 |
| Philippines | 131 | 130 | 177,000 | 335 | 296 | 437,000 |
| Sweden | 55 | 15 | 94,400 | 353 | 85 | 496,000 |
| Ukraine | -- | -- | -- | 1,870 | 1,840 | 2,240,000 |
| United Kingdom | 79 | 78 | 127,000 | 552 | 538 | 792,000 |
| Other (5 countries) | 18 | 18 | 25,200 | 50 | 44 | 123,000 |
| Total | 2,270 | 2,200 | 3,460,000 | 20,100 | 18,900 | 27,800,000 |
| Total silicon metal | 9,900 | 9,720 | 30,000,000 | 135,000 | 133,000 | 348,000,000 |

^eEstimated. XX Not applicable. -- Zero.

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

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

³Less than ½ unit.

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

Source: U.S. Census Bureau.