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# Mineral Industry Surveys

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## CHROMIUM IN NOVEMBER 2007

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2007 decreased by 4% compared with revised consumption in October 2007, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. Government stockpile inventory of chromium materials in November 2007, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2007, and U.S. foreign trade data for selected chromium-containing materials in October 2007.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

| | 2006 | 2007 | | | | |
|---|---|---|---|---|---|---|
| | January-December | September | Third quarter | October | November | January-November[2] |
| Production: | | | | | | |
| Stainless steel production[3] | 2,460,000 | 128,000 | 426,000 | 170,000 | 187,000 | 2,010,000 [4] |
| Components of U.S. supply: | | | | | | |
| Stainless steel scrap receipts | 1,050,000 | 73,500 | 217,000 | 78,100 | 74,100 | 882,000 |
| Stainless steel scrap consumption | 1,500,000 | 111,000 | 338,000 | 119,000 | 119,000 | 1,320,000 |
| Imports for consumption: | | | | | | |
| Chromite ore | 150,000 | 1,750 | 42,900 | 3,540 | (5) | 99,800 [6] |
| Ferrochromium: | | | | | | |
| More than 4% carbon | 393,000 | 31,000 | 78,300 | 36,900 | (5) | 316,000 [6] |
| More than 0.5%, but not more than 3% carbon | 29 | -- | 714 | 200 | (5) | 5,410 [6] |
| Not more than 0.5% carbon | 28,100 | 3,740 | 7,420 | 2,570 | (5) | 26,000 [6] |
| Ferrochromium silicon | 38,300 | -- | 12,800 [r] | 2,760 | (5) | 33,300 [6] |
| Total ferroalloy imports | 459,000 | 34,700 | 99,200 [r] | 42,400 | (5) | 381,000 [6] |
| Chromium metal[7] | 10,900 | 849 | 3,340 | 1,050 | (5) | 10,400 [6] |
| Stainless steel | 872,000 | 58,100 | 198,000 | 59,800 | (5) | 693,000 [6] |
| Stainless steel scrap | 180,000 | 4,230 | 15,200 | 9,570 | (5) | 95,000 [6] |
| Distribution of U.S. supply: | | | | | | |
| Consumption, industry, chromium ferroalloys and metal | 553,000 | 33,300 [r] | 109,000 [r] | 37,000 [r] | 35,500 | 414,000 |
| Exports: | | | | | | |
| Chromite ore | 53,900 | 406 | 2,120 | 6,340 | (5) | 36,500 [6] |
| Chromium ferroalloys: | | | | | | |
| High-carbon ferrochromium | 18,800 | 2,870 | 4,270 | 482 | (5) | 23,300 [6] |
| Low-carbon ferrochromium | 16,600 | 1,160 | 2,120 | 452 | (5) | 14,600 [6] |
| Ferrochromium silicon | 248 | 4 | 44 [r] | -- | (5) | 297 [6] |
| Total ferroalloy exports | 35,700 | 4,030 | 6,430 | 933 | (5) | 38,100 [6] |
| Chromium metal | 1,020 | 95 | 320 | 74 | (5) | 1,020 [6] |
| Stainless steel | 410,000 | 31,800 | 102,000 | 38,900 | (5) | 405,000 [6] |
| Stainless steel scrap | 506,000 | 68,900 | 209,000 | 79,000 | (5) | 716,000 [6] |
| Stocks at end of period: | | | | | | |
| Consumer, industry, chromium ferroalloys and metal | XX | 12,100 | XX | 11,700 [r] | 12,200 | XX |
| Government stockpile: | | | | | | |
| Chromium ferroalloys | XX | 174,000 | XX | 169,000 | 162,000 | XX |
| Chromium metal | XX | 5,150 | XX | 5,090 | 5,030 | XX |

[r]Revised. XX Not applicable. -- Zero.

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

[2]May include revised data that are not broken out by specific month.

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

[4]May include revised data that are not broken out by specific month.

[5]Data to be published in a subsequent issue.

[6]January through October data only.

[7]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2007[1, 2]

(Metric tons, gross weight unless otherwise noted)

| | October | November | January-November[3] |
|---|---|---|---|
| Consumption by end use: | | | |
| Alloy uses: | | | |
| Iron alloys: | | | |
| Steel: | | | |
| Carbon steel | 552 | 315 | 3,860 |
| High-strength low-alloy steel | 240 r | 220 | 2,710 |
| Stainless and heat-resisting steel | 30,900 | 29,500 | 348,000 |
| Full alloy steel | 1,590 r | 1,730 | 16,200 |
| Electrical steel | W | W | W |
| Tool steel | 426 | 408 | 4,710 |
| Unspecified steel | W | W | W |
| Cast irons | W | W | W |
| Superalloys | 403 r | 403 | 6,880 |
| Other alloys[4] | 62 r | 62 | 637 |
| Total | 37,000 r | 35,500 | 414,000 |
| Total, chromium content | 21,600 r | 21,000 | 243,000 |
| Consumption by material: | | | |
| Low-carbon ferrochromium | 2,420 r | 2,390 | 27,200 |
| High-carbon ferrochromium | 31,700 r | 30,200 | 352,000 |
| Ferrochromium silicon | W | W | 28,100 |
| Chromium metal | 203 r | 206 | 3,640 |
| Chromite ore | W | W | W |
| Chromium-aluminum alloy | W | W | W |
| Other chromium materials | W | W | W |
| Total | 37,000 r | 35,500 | 414,000 |
| Total, chromium content | 21,600 r | 21,000 | 243,000 |
| Consumer stocks: | | | |
| Low-carbon ferrochromium | 1,870 r | 1,860 | XX |
| High-carbon ferrochromium | 8,660 r | 9,040 | XX |
| Ferrochromium silicon | 910 r | 1,050 | XX |
| Chromium metal | 148 r | 146 | XX |
| Chromite ore | W | W | XX |
| Chromium-aluminum alloy | W | W | XX |
| Other chromium materials | 15 r | 14 | XX |
| Total | 11,700 r | 12,200 | XX |
| Total, chromium content | 6,800 r | 7,200 | XX |

rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

[2]Includes estimates.

[3]May include revised data.

[4]Includes welding and alloy hard-facing rods and materials; wear- and corrosion-resistant alloys; and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS[1, 2]

(Metric tons)

| Period | Chromium ferroalloys | | Chromium metal |
|---|---|---|---|
| | High-carbon ferro-chromium | Low-carbon ferro-chromium | |
| 2006: | | | |
| November | 255,000 | 132,000 | 5,280 |
| December | 229,000 | 118,000 | 5,280 |
| 2007: | | | |
| January | 223,000 | 111,000 | 5,280 |
| February | 215,000 | 108,000 | 5,280 |
| March | 204,000 | 98,900 | 5,280 |
| April | 191,000 | 94,900 | 5,280 |
| May | 177,000 | 91,300 | 5,280 |
| June | 177,000 | 86,700 | 5,280 |
| July | 177,000 | 86,700 | 5,150 |
| August | 170,000 | 92,200 | 5,150 |
| September | 113,000 | 61,000 | 5,150 |
| October | 108,000 | 60,500 | 5,090 |
| November | 104,000 | 57,800 | 5,030 |

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

[2]These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract, however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

Source: Defense National Stockpile Center.

TABLE 4

U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

| Period | Chromite ore | | Chromium ferroalloys[2] | | | Chromium metal[3, 4] | |
|---|---|---|---|---|---|---|---|
| | Gross weight (metric tons) | Value (thousands) | Gross weight (metric tons) | Chromium content (metric tons) | Value (thousands) | Gross weight (metric tons) | Value (thousands) |
| 2006: | | | | | | | |
| October | 445 | $157 | 2,050 | 1,240 | $2,360 | 95 | $1,830 |
| November | 22,700 | 1,240 | 2,560 | 1,610 | 3,650 | 85 | 1,720 |
| December | 286 | 116 | 7,380 | 4,410 | 8,550 | 62 | 1,490 |
| January-December | 53,900 | 10,200 | 35,700 | 21,300 | 38,100 | 1,020 | 21,300 |
| 2007: | | | | | | | |
| January | 455 | 185 | 5,410 | 3,330 | 6,050 | 107 | 1,990 |
| February | 821 | 361 | 16,300 | 11,100 | 15,500 | 115 | 1,600 |
| March | 899 | 368 | 1,320 | 745 | 1,620 | 80 | 1,600 |
| April | 12,000 | 748 | 1,820 | 1,070 | 2,310 | 140 | 2,490 |
| May | 13,100 | 1,150 | 4,060 | 2,540 | 5,740 | 105 | 1,440 |
| June | 790 | 308 | 1,830 | 1,040 | 2,680 | 75 | 1,520 |
| July | 844 | 350 | 1,130 | 657 | 1,760 | 102 | 1,760 |
| August | 874 | 364 | 1,270 | 747 | 1,960 | 123 | 2,690 |
| September | 406 | 231 | 4,030 | 2,470 | 6,760 | 95 | 1,670 |
| October | 6,340 | 812 | 933 | 568 | 1,620 | 74 | 1,390 |
| January-October | 36,500 | 4,880 | 38,100 | 24,300 | 46,000 | 1,020 | 18,100 |

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

[2]Includes low- and high-carbon ferrochromium and ferrochromium silicon.

[3]Includes chromium metal, waste and scrap, and unwrought powders.

[4]May include revised data that are not broken out by specific month.

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

| | 2006 | 2007 | | | |
|---|---|---|---|---|---|
| | January-December[2] | August | September | October | January-October[2, 3] |
| Chromite ore: | | | | | |
| Not more than 40%: | | | | | |
| Gross weight | 117 | 10 | -- | 20 | 35 |
| Chromic oxide content | 45 | 4 | -- | 7 | 13 |
| More than 40% but less than 46% chromic oxide: | | | | | |
| Gross weight | 3,810 | 10 | -- | 144 | 26,300 |
| Chromic oxide content | 1,750 | 4 | -- | 66 | 12,100 |
| 46% or more chromic oxide: | | | | | |
| Gross weight | 146,000 | 35,800 | 1,750 | 3,380 | 73,500 |
| Chromic oxide content | 76,300 | 16,500 | 805 | 1,620 | 34,100 |
| Total, all grades: | | | | | |
| Gross weight | 150,000 | 35,800 | 1,750 | 3,540 | 99,800 |
| Chromic oxide content | 78,100 | 16,500 | 805 | 1,700 | 46,200 |
| Ferrochromium: | | | | | |
| Low-carbon:[4] | | | | | |
| Not more than 0.5%: | | | | | |
| Gross weight | 28,100 | 1,930 | 3,740 | 2,570 | 26,000 |
| Chromium content | 19,300 | 1,340 | 1,920 | 1,770 | 17,200 |
| More than 0.5% but not more than 3%: | | | | | |
| Gross weight | 29 | 200 | -- | 200 | 5,410 |
| Chromium content | 23 | 108 | -- | 108 | 3,110 |
| Total, low-carbon: | | | | | |
| Gross weight | 28,100 | 2,130 | 3,740 | 2,770 | 31,400 |
| Chromium content | 19,300 | 1,440 | 1,920 | 1,880 | 20,300 |
| High-carbon:[5] | | | | | |
| Gross weight | 393,000 | 29,000 | 31,000 | 36,900 | 316,000 |
| Chromium content | 230,000 | 14,900 | 16,000 | 22,100 | 177,000 |
| Total, all grades: | | | | | |
| Gross weight | 421,000 | 31,200 | 34,700 | 39,600 | 348,000 |
| Chromium content | 249,000 | 16,400 | 17,900 | 23,900 | 197,000 |
| Chromium metal: | | | | | |
| Unwrought powders | 1,250 | 22 | 63 | 23 | 701 |
| Waste and scrap | 90 | 57 | 35 | 72 | 274 |
| Other than waste and scrap and unwrought powders | 9,540 | 1,210 | 751 | 953 | 9,400 |
| Total, all grades: | 10,900 | 1,290 | 849 | 1,050 | 10,400 |

-- Zero.

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

[2]May include revised data.

[3]May include revised data that are not broken out by specific month.

[4]Ferrochromium containing not more than 3% carbon.

[5]Ferrrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2007,
BY GRADE AND BY COUNTRY[1]

| Grade and country | October | | | January-October[2] | | |
|---|---|---|---|---|---|---|
| | Gross weight (metric tons) | Chromium content (metric tons) | Value[3] (thousands) | Gross weight (metric tons) | Chromium content (metric tons) | Value[3] (thousands) |
| High-carbon ferrochromium:[4] | | | | | | |
| India | -- | -- | -- | 463 | 283 | $460 |
| Kazakhstan | 17,000 | 11,700 | $30,900 | 79,200 | 55,300 | 102,000 |
| Mexico | -- | -- | -- | 20 | 14 | 32 |
| Russia | 494 | 310 | 889 | 15,600 | 9,790 | 17,400 |
| South Africa | 13,400 | 6,550 | 10,700 | 200,000 | 99,300 | 147,000 |
| Sweden | -- | -- | -- | 41 | 28 | 105 |
| Switzerland | -- | -- | -- | 3,500 | 1,680 | 2,130 |
| Tajikistan | -- | -- | -- | 5 | 3 | 9 |
| Zimbabwe | 6,000 | 3,530 | 10,300 | 17,100 | 10,200 | 23,700 |
| Total | 36,900 | 22,100 | 52,900 | 316,000 | 177,000 | 293,000 |
| Low-carbon ferrochromium:[5] | | | | | | |
| Not more than 0.5% carbon: | | | | | | |
| Brazil | -- | -- | -- | 5 | 3 | 10 |
| China | -- | -- | -- | 225 | 148 | 479 |
| France | -- | -- | -- | 6 | 4 | 21 |
| Germany | 440 | 310 | 793 | 5,200 | 3,650 | 11,700 |
| Japan | 440 | 293 | 709 | 4,340 | 2,910 | 8,180 |
| Kazakhstan | 794 | 550 | 1,740 | 2,490 | 1,740 | 4,610 |
| Russia | 873 | 601 | 2,410 | 12,800 | 8,150 | 23,900 |
| South Africa | -- | -- | -- | 718 | 427 | 1,050 |
| Sweden | 19 | 14 | 87 | 180 | 126 | 456 |
| Turkey | -- | -- | -- | 8 | 5 | 26 |
| Total | 2,570 | 1,770 | 5,740 | 26,000 | 17,200 | 50,400 |
| More than 0.5% but not more than 3%: | | | | | | |
| Kazakhstan | -- | -- | -- | 1,110 | 777 | 2,090 |
| South Africa | 200 | 108 | 244 | 4,300 | 2,330 | 4,340 |
| Total | 200 | 108 | 244 | 5,410 | 3,110 | 6,440 |
| All grades: | | | | | | |
| Brazil | -- | -- | -- | 5 | 3 | 10 |
| China | -- | -- | -- | 225 | 148 | 479 |
| France | -- | -- | -- | 6 | 4 | 21 |
| Germany | 440 | 310 | 793 | 5,200 | 3,650 | 11,700 |
| India | -- | -- | -- | 463 | 283 | 460 |
| Japan | 440 | 293 | 709 | 4,340 | 2,910 | 8,180 |
| Kazakhstan | 17,800 | 12,200 | 32,600 | 82,800 | 57,800 | 109,000 |
| Mexico | -- | -- | -- | 20 | 14 | 32 |
| Russia | 1,370 | 912 | 3,300 | 28,400 | 17,900 | 41,300 |
| South Africa | 13,600 | 6,650 | 11,000 | 205,000 | 102,000 | 153,000 |
| Sweden | 19 | 14 | 87 | 220 | 154 | 562 |
| Switzerland | -- | -- | -- | 3,500 | 1,680 | 2,130 |
| Tajikistan | -- | -- | -- | 5 | 3 | 9 |
| Turkey | -- | -- | -- | 8 | 5 | 26 |
| Zimbabwe | 6,000 | 3,530 | 10,300 | 17,100 | 10,200 | 23,700 |
| Total | 39,600 | 23,900 | 58,800 | 348,000 | 197,000 | 350,000 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown. Chromium ferroalloys comprise ferrochromium and ferrochromium silicon.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2007,
BY GRADE AND BY COUNTRY[1]

| Grade and country | October | | January-October[2] | |
|---|---|---|---|---|
| | Gross weight (metric tons) | Value[3] (thousands) | Gross weight (metric tons) | Value[3] (thousands) |
| Unwrought powders: | | | | |
| China | (4) | $3 | 118 | $2,210 |
| France | -- | -- | 8 | 68 |
| Germany | (4) | 7 | 42 | 269 |
| Japan | 7 | 289 | 48 | 1,700 |
| Russia | 16 | 86 | 215 | 2,060 |
| Singapore | -- | -- | 1 | 11 |
| Spain | -- | -- | 31 | 171 |
| United Kingdom | -- | -- | 238 | 2,060 |
| Total | 23 | 385 | 701 | 8,550 |
| Waste and scrap: | | | | |
| Germany | -- | -- | 18 | 102 |
| Japan | 7 | 87 | 35 | 294 |
| Korea, Republic of | -- | -- | (4) | 8 |
| Malaysia | 11 | 47 | 11 | 47 |
| Mexico | 55 | 348 | 204 | 1,070 |
| Singapore | -- | -- | 4 | 102 |
| Taiwan | -- | -- | 2 | 28 |
| Total | 73 | 482 | 274 | 1,660 |
| Other than waste and scrap and unwrought powders: | | | | |
| China | 162 | 1,350 | 1,760 | 14,200 |
| France | 304 | 2,610 | 2,250 | 19,900 |
| Germany | 25 | 240 | 101 | 1,550 |
| Hong Kong | -- | -- | (4) | 8 |
| Italy | -- | -- | (4) | 19 |
| Japan | 1 | 23 | 20 | 177 |
| Russia | 140 | 1,070 | 3,760 | 26,400 |
| Switzerland | -- | -- | (4) | 5 |
| United Kingdom | 321 | 2,580 | 1,510 | 12,100 |
| Total | 953 | 7,880 | 9,400 | 74,300 |
| All grades: | | | | |
| China | 162 | 1,350 | 1,880 | 16,400 |
| France | 304 | 2,610 | 2,260 | 20,000 |
| Germany | 25 | 247 | 161 | 1,920 |
| Hong Kong | -- | -- | (4) | 8 |
| Italy | -- | -- | (4) | 19 |
| Japan | 14 | 398 | 102 | 2,170 |
| Korea, Republic of | -- | -- | (4) | 8 |
| Malaysia | 11 | 47 | 11 | 47 |
| Mexico | 55 | 348 | 204 | 1,070 |
| Russia | 156 | 1,160 | 3,970 | 28,400 |
| Singapore | -- | -- | 5 | 113 |
| Spain | -- | -- | 31 | 171 |
| Switzerland | -- | -- | (4) | 5 |
| Taiwan | -- | -- | 2 | 28 |
| United Kingdom | 321 | 2,580 | 1,750 | 14,100 |
| Total | 1,050 | 8,740 | 10,400 | 84,500 |

-- Zero.

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

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2007[1]

| Stainless steel product | October | | January-October | |
|---|---|---|---|---|
| | Gross weight (metric tons) | Value[2] (thousands) | Gross weight (metric tons) | Value[2] (thousands) |
| Exports: | | | | |
| Ingot | 1,590 | $7,430 | 12,900 | $82,300 |
| Flat-rolled (width > 600 mm) | 21,600 | 63,100 | 226,000 | 672,000 |
| Flat-rolled (width < 600 mm) | 7,520 | 38,100 | 81,000 | 434,000 |
| Bars and rods in irregular coils | 443 | 2,220 | 6,810 | 34,400 |
| Other bars and rods | 3,230 | 24,000 | 32,500 | 238,000 |
| Wire | 798 | 5,890 | 7,470 | 53,200 |
| Tubes, pipes, hollow profiles | 3,660 | 28,100 | 37,900 | 280,000 |
| Total | 38,900 | 169,000 | 405,000 | 1,790,000 |
| Stainless steel scrap | 79,000 | 115,000 | 716,000 | 1,370,000 |
| Grand total | 118,000 | 284,000 | 1,120,000 | 3,170,000 |
| Imports: | | | | |
| Ingot | 9,490 | 44,200 | 108,000 | 537,000 |
| Flat-rolled (width > 600 mm) | 22,000 | 84,400 | 290,000 | 1,270,000 |
| Flat-rolled (width < 600 mm) | 3,870 | 19,100 | 36,800 | 200,000 |
| Bars and rods in irregular coils | 1,910 | 9,650 | 24,100 | 122,000 |
| Other bars and rods | 8,610 | 52,200 | 85,500 | 483,000 |
| Wire | 3,640 | 23,000 | 36,100 | 236,000 |
| Tubes, pipes, hollow profiles | 10,300 | 97,600 | 112,000 | 887,000 |
| Total | 59,800 | 330,000 | 693,000 | 3,730,000 |
| Stainless steel scrap | 9,570 | 15,300 | 95,000 | 149,000 |
| Grand total | 69,400 | 345,000 | 788,000 | 3,880,000 |

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

[2]Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.