

Mineral Industry Surveys

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VANADIUM IN MARCH 2011

Reported domestic consumption of vanadium in March 2011 was 8% more than that of the previous month, and was about 4% more than that of March 2010, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 206 metric tons (t) at the beginning of 2011 and 172 t at the end of March.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$14.333 to \$14.750 per pound of vanadium content in March, compared with \$13.706 to \$14.050 in February. European FeV prices ranged from \$30.500 to \$31.500 per kilogram in both February and March. Vanadium pentoxide (V_2O_5) prices ranged from \$6.917 to \$7.417 per pound in March, compared with \$7.000 to \$7.500 in February.

American Vanadium Corp. (Vancouver, British Columbia,

Canada) announced that a feasibility study for their Gibellini open pit heap leach project in Nevada was on schedule to be finished by the end of May 2011. Revised resource figures were expected to be released by June 2011. According to the company, at full production capacity (6,350 metric tons per year V_2O_5), the Gibellini project could boost U.S. production of V_2O_5 by 50% (American Vanadium Corp., 2011).

Reference Cited

American Vanadium Corp., 2011, Gibellini vanadium project on target for production: Vancouver, British Columbia, Canada, American Vanadium Corp., March 24. (Accessed May 20, 2011, at http://www.americanvanadium.com/pdf/2011/NR_3-24-2011.pdf.)

TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM¹

(Kilograms, contained vanadium)

| | 2010 ^P | | 2011 | | | | | |
|---------------------------|-------------------|---------|----------------------|----------------------|-------------|---------|---------------|---------|
| | Consumption | Stocks | February | | March | | January-March | |
| | | | Consumption | Stocks | Consumption | Stocks | Consumption | Stocks |
| Ferrovandium ² | 4,160,000 | 154,000 | 348,000 ^r | 144,000 ^r | 366,000 | 119,000 | 1,060,000 | 119,000 |
| Vanadium-aluminum alloy | W | W | (3) | 40,100 ^r | (3) | 52,700 | (3) | 52,700 |
| Other ⁴ | 785,000 | 51,900 | (3) | (5) | (3) | (5) | (3) | (5) |
| Total | 4,940,000 | 206,000 | 415,000 | 184,000 | 447,000 | 172,000 | 1,270,000 | 172,000 |

^PPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

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

²Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

³Withheld to avoid disclosing company proprietary data; included in "Total."

⁴Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

⁵Withheld to avoid disclosing company proprietary data; included in "Vanadium-aluminum alloy."

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE¹

(Kilograms, contained vanadium)

| | 2010 ^P | 2011 | | |
|--------------------------------------------|-------------------|----------------------|---------|---------------|
| | | February | March | January-March |
| Steel: | | | | |
| Carbon | 663,000 | 59,800 ^r | 64,400 | 176,000 |
| High-strength low-alloy | 1,530,000 | W | W | W |
| Stainless and heat-resisting | 120,000 | 5,110 | 5,110 | 15,500 |
| Full alloy | 1,970,000 | 165,000 | 178,000 | 512,000 |
| Tool | 417,000 | W | W | W |
| Total steel | 4,700,000 | 230,000 ^r | 247,000 | 704,000 |
| Superalloys | 5,550 | 483 | 483 | 1,370 |
| Miscellaneous and unspecified ² | 242,000 | W | W | W |
| Total consumption | 4,940,000 | 415,000 ^r | 447,000 | 1,270,000 |

^PPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included in

"Total consumption."

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

²Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND VANADIUM
METAL, INCLUDING WASTE AND SCRAP¹

(Kilograms, gross weight)

| | Aluminum-vanadium master alloy | | Vanadium metal, including waste and scrap | |
|---------------------------------|-----------------------------------|--------------|----------------------------------------------|-----------|
| | Quantity | Value | Quantity | Value |
| Imports for consumption: | | | | |
| 2010 | 9,200,000 | \$20,200,000 | 9,660 | \$434,000 |
| 2011: | | | | |
| January | 1,130,000 | 2,780,000 | 10 | 13,900 |
| February: | | | | |
| Canada | 5,000 | 37,400 | -- | -- |
| China | 6,080 | 46,900 | 500 | 270,000 |
| Germany | -- | -- | 3,200 | 228,000 |
| Mexico | 69,400 | 153,000 | -- | -- |
| United Kingdom | -- | -- | 100 | 3,430 |
| Total | 80,500 | 238,000 | 3,800 | 502,000 |
| Year to date | 1,210,000 | 3,010,000 | 3,810 | 515,000 |
| Exports: | | | | |
| 2010 | 11,900,000 | 33,300,000 | 21,200 | 671,000 |
| 2011: | | | | |
| January | 1,020,000 | 3,270,000 | 111 | 4,270 |
| February: | | | | |
| Canada | 482,000 | 1,290,000 | -- | -- |
| Czech Republic | 742 | 3,840 | -- | -- |
| India | 2,270 | 18,200 | -- | -- |
| Israel | 755 | 17,300 | -- | -- |
| Japan | -- | -- | 3,190 | 192,000 |
| Mexico | 286,000 | 978,000 | -- | -- |
| United Kingdom | 431 | 5,600 | 5,560 | 169,000 |
| Total | 772,000 | 2,310,000 | 8,750 | 361,000 |
| Year to date | 1,800,000 | 5,580,000 | 8,860 | 365,000 |

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND
OTHER OXIDES AND HYDROXIDES OF VANADIUM¹

(Kilograms, contained vanadium)

| | Ferrovanadium | | Vanadium pentoxide (anhydride) ² | | Other oxides and hydroxides of vanadium | |
|---------------------------------|---------------|--------------|------------------------------------------------|--------------|--------------------------------------------|-------------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Imports for consumption: | | | | | | |
| 2010 | 1,340,000 | \$41,100,000 | 4,000,000 | \$53,700,000 | 167,000 | \$3,330,000 |
| 2011: | | | | | | |
| January | 78,500 | 2,230,000 | 322,000 | 3,820,000 | 48,300 | 893,000 |
| February: | | | | | | |
| Austria | -- | -- | 100 | 6,160 | 8,370 | 220,000 |
| Brazil | 24,700 | 106,000 | -- | -- | -- | -- |
| Canada | 67,100 | 1,770,000 | -- | -- | -- | -- |
| China | -- | -- | 6,860 | 202,000 | -- | -- |
| Germany | 27 | 3,230 | -- | -- | -- | -- |
| Korea, Republic of | 7,670 | 262,000 | -- | -- | -- | -- |
| Russia | -- | -- | 151,000 | 1,680,000 | -- | -- |
| South Africa | -- | -- | 51,300 | 1,340,000 | 40,000 | 638,000 |
| Total | 99,500 | 2,140,000 | 209,000 | 3,230,000 | 48,400 | 858,000 |
| Year to date | 178,000 | 4,370,000 | 531,000 | 7,050,000 | 96,700 | 1,750,000 |
| Exports: | | | | | | |
| 2010 | 882,000 | 18,100,000 | 140,000 | 2,140,000 | 1,100,000 | 10,600,000 |
| 2011: | | | | | | |
| January | 61,600 | 1,230,000 | 45 | 3,040 | 2,250 | 20,000 |
| February: | | | | | | |
| Austria | -- | -- | -- | -- | 454 | 4,050 |
| Brazil | -- | -- | 18,100 | 260,000 | 6,230 | 55,400 |
| Canada | 27,700 | 627,000 | -- | -- | -- | -- |
| China | -- | -- | -- | -- | 10,500 | 143,000 |
| Germany | -- | -- | -- | -- | 2,250 | 20,000 |
| India | 18,900 | 277,000 | -- | -- | -- | -- |
| Japan | -- | -- | -- | -- | 899 | 8,000 |
| Korea, Republic of | 2,320 | 88,500 | -- | -- | -- | -- |
| Netherlands | 18,800 | 300,000 | -- | -- | -- | -- |
| Total | 67,800 | 1,290,000 | 18,100 | 260,000 | 20,300 | 230,000 |
| Year to date | 129,000 | 2,520,000 | 18,100 | 263,000 | 22,600 | 250,000 |

-- Zero.

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

²May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG¹

(Kilograms, contained vanadium pentoxide, unless otherwise specified)

| | Ash and residues | | Ash and residues (not from the manufacture of iron and steel) | | Slag, from the manufacture of iron and steel | |
|--------------|------------------|---------|------------------------------------------------------------------|---------|-------------------------------------------------|------------|
| | Quantity | Value | Quantity | Value | Quantity (gross weight) | Value |
| | 2010 | 521,000 | \$5,570,000 | 490,000 | \$1,370,000 | 62,800,000 |
| 2011: | | | | | | |
| January | 135,000 | 600,000 | 27,400 | 59,400 | 143,000 | 47,200 |
| February: | | | | | | |
| Canada | 47,800 | 35,100 | 13,000 | 39,500 | 47,600 | 12,900 |
| Germany | -- | -- | 9,900 | 77,400 | -- | -- |
| Total | 47,800 | 35,100 | 22,900 | 117,000 | 47,600 | 12,900 |
| Year to date | 183,000 | 635,000 | 50,400 | 176,000 | 191,000 | 60,100 |

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS¹

(Kilograms, contained vanadium)

| | Sulfates | | Vanadates | |
|--------------|----------|-----------|-----------|-------------|
| | Quantity | Value | Quantity | Value |
| 2010 | 48,200 | \$608,000 | 158,000 | \$4,050,000 |
| 2011: | | | | |
| January | 3,930 | 45,700 | -- | -- |
| February: | | | | |
| Belgium | 18,700 | 429,000 | -- | -- |
| China | 3,980 | 71,500 | -- | -- |
| Germany | -- | -- | 156 | 12,100 |
| Netherlands | -- | -- | 5,620 | 131,000 |
| Total | 22,700 | 500,000 | 5,770 | 143,000 |
| Year to date | 26,600 | 546,000 | 5,770 | 143,000 |

-- Zero.

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

Source: U.S. Census Bureau.