

Mineral Industry Surveys

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VANADIUM IN APRIL 2007

Reported domestic consumption of vanadium in April 2007 was about 5% less than that of the previous month, and was about 13% more than that of April 2006, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 296 metric tons (t) at the beginning of 2007 and 349 t at the end of April.

According to Ryan's Notes (2007), U.S. ferrovanadium (FeV) prices ranged from \$19.000 to \$19.500 per pound of vanadium content in April, as compared with \$17.806 to \$18.433 in March. European FeV prices ranged from \$39.813 to \$41.438 per kilogram in April, as compared \$37.444 to \$39.444 in March. Vanadium pentoxide (V₂O₅) prices ranged from \$7.688 to \$8.094 per pound in April, as compared with \$6.778 to \$7.033 in March.

Chinese exports of V₂O₅ in 2006 increased 33% year-on-year to reach about 10,500 t. About one-third went to the Republic of Korea, where it was believed to have been converted to FeV,

which would bypass China's export tax on FeV. With a number of new vanadium projects currently underway, the Government of China took steps to control the increase in vanadium production by canceling toll trading tax benefits for vanadium on April 26. Companies that toll process vanadium for re-export would be liable for import/export taxes as well as value added taxes unless registered in a tax-free zone prior to the announcement. China was also considering canceling the 5% rebate on export of V₂O₅ and possibly imposing an export duty on V₂O₅ (Metal Bulletin Research, 2007).

References Cited

Metal Bulletin Research, 2007, Vanadium highlights: Metal Bulletin Research, issue 176, April 30, p. 15.
Ryan's Notes, 2007, [untitled]: Ryan's Notes, v. 13, no. 19, May 7, p. 10.

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

(Kilograms, contained vanadium)

| | 2006 ^P | | 2007 | | | | | |
|---------------------------|-------------------|---------|-------------|---------|-------------|---------|--------------|---------|
| | | | March | | April | | Year to date | |
| | Consumption | Stocks | Consumption | Stocks | Consumption | Stocks | Consumption | Stocks |
| Ferrovandium ² | 3,350,000 | 247,000 | 299,000 | 287,000 | 286,000 | 300,000 | 1,140,000 | 300,000 |
| Vanadium-aluminum alloy | W | W | W | W | W | W | W | W |
| Other ³ | 298,000 | 48,100 | 73,000 | 54,900 | 68,400 | 48,600 | 244,000 | 48,600 |
| Total | 3,650,000 | 296,000 | 372,000 | 342,000 | 355,000 | 349,000 | 1,390,000 | 349,000 |

^PPreliminary. 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.

³Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

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

(Kilograms, contained vanadium)

| | 2006 ^P | 2007 | | |
|--|-------------------|---------|---------|--------------|
| | | March | April | Year to date |
| Steel: | | | | |
| Carbon | 931,000 | 87,300 | 82,100 | 326,000 |
| High-strength low-alloy | 1,020,000 | 106,000 | 106,000 | 392,000 |
| Stainless and heat-resisting | 60,700 | 5,110 | 5,110 | 20,400 |
| Full alloy | 1,020,000 | 101,000 | 101,000 | 385,000 |
| Tool | 322,000 | 44,400 | 37,300 | 148,000 |
| Total steel | 3,350,000 | 344,000 | 331,000 | 1,270,000 |
| Superalloys | 4,130 | 660 | 673 | 2,190 |
| Miscellaneous and unspecified ² | 296,000 | 27,300 | 22,600 | 115,000 |
| Total consumption | 3,650,000 | 372,000 | 355,000 | 1,390,000 |

^PPreliminary.

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: | | | | |
| 2006 | 102,000 | \$312,000 | 121,000 | \$5,270,000 |
| 2007: | | | | |
| February | -- | -- | -- | -- |
| March: | | | | |
| Canada | 797,000 | \$1,120,000 | -- | -- |
| Total | 797,000 | 1,120,000 | -- | -- |
| Year to date | 797,000 | 1,120,000 | -- | -- |
| Exports: | | | | |
| 2006 | 17,000,000 | 54,500,000 | 491,000 | 3,160,000 |
| 2007: | | | | |
| February | 1,160,000 | 4,590,000 | -- | -- |
| March: | | | | |
| Australia | 2,060 | 26,800 | -- | -- |
| Belgium | 18,600 | 540,000 | -- | -- |
| Canada | 465,000 | 1,500,000 | -- | -- |
| India | 3,330 | 17,900 | -- | -- |
| Japan | 100,000 | 1,250,000 | -- | -- |
| Mexico | 1,120,000 | 3,400,000 | -- | -- |
| United Kingdom | 35,000 | 984,000 | -- | -- |
| Total | 1,750,000 | 7,730,000 | -- | -- |
| Year to date | 4,790,000 | 17,400,000 | -- | -- |

-- 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: | | | | | | |
| 2006 | 2,140,000 | \$90,500,000 | 1,920,000 | \$45,200,000 | 129,000 | \$3,370,000 |
| 2007: | | | | | | |
| February | 256,000 | 6,770,000 | 162,000 | 3,130,000 | -- | -- |
| March: | | | | | | |
| Austria | 19,900 | 526,000 | 25 | 2,900 | -- | -- |
| Canada | 79,400 | 1,960,000 | -- | -- | -- | -- |
| China | -- | -- | 34,000 | 837,000 | -- | -- |
| Czech Republic | 200,000 | 5,530,000 | -- | -- | -- | -- |
| Germany | -- | -- | 2,000 | 29,500 | -- | -- |
| Russia | -- | -- | 94,500 | 1,140,000 | -- | -- |
| South Africa | -- | -- | 124,000 | 2,550,000 | -- | -- |
| Total | 299,000 | 8,020,000 | 254,000 | 4,570,000 | -- | -- |
| Year to date | 811,000 | 20,800,000 | 498,000 | 9,720,000 | -- | -- |
| Exports: | | | | | | |
| 2006 | 389,000 | 11,400,000 | 341,000 | 7,150,000 | 832,000 | 7,780,000 |
| 2007: | | | | | | |
| February | 9,730 | 373,000 | 18,500 | 334,000 | 11,000 | 157,000 |
| March: | | | | | | |
| Australia | 340 | 17,300 | -- | -- | -- | -- |
| Brazil | -- | -- | -- | -- | 2,720 | 40,000 |
| Canada | 26,600 | 1,060,000 | -- | -- | 18,900 | 168,000 |
| Germany | -- | -- | 1,300 | 17,500 | 6,540 | 91,100 |
| Japan | -- | -- | -- | -- | 16,000 | 268,000 |
| Korea | -- | -- | -- | -- | 1,860 | 17,900 |
| Netherlands | -- | -- | -- | -- | 14,100 | 158,000 |
| Singapore | -- | -- | -- | -- | 961 | 13,900 |
| Spain | -- | -- | 12,100 | 148,000 | -- | -- |
| Trinidad & Tobago | -- | -- | 1,180 | 23,200 | -- | -- |
| Total | 27,000 | 1,080,000 | 14,600 | 189,000 | 61,000 | 758,000 |
| Year to date | 41,900 | 1,670,000 | 35,100 | 566,000 | 75,000 | 930,000 |

-- 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)

| | Ash and residues | | Ash and residues (not from the manufacture of iron and steel) | |
|--------------|------------------|-------------|--|-------------|
| | Quantity | Value | Quantity | Value |
| 2006 | 637,000 | \$7,320,000 | 1,140,000 | \$1,130,000 |
| 2007: | | | | |
| February | 59,100 | 590,000 | 41,700 | 57,900 |
| March: | | | | |
| Canada | -- | -- | 81,800 | 125,000 |
| Mexico | 127,000 | 1,520,000 | -- | -- |
| Total | 127,000 | 1,520,000 | 81,800 | 125,000 |
| Year to date | 223,000 | 2,540,000 | 209,000 | 299,000 |

-- 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 |
| 2006 | 16 | \$26,700 | 115,000 | \$3,330,000 |
| 2007: | | | | |
| February | 20,200 | 193,000 | 291 | 25,500 |
| March: | | | | |
| China | 20,000 | 199,000 | 5,600 | 176,000 |
| India | 1,230 | 7,370 | -- | -- |
| South Africa | -- | -- | 17,100 | 271,000 |
| Total | 21,200 | 206,000 | 22,700 | 447,000 |
| Year to date | 81,400 | 772,000 | 39,800 | 815,000 |

-- Zero.

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

Source: U.S. Census Bureau.