

Mineral Industry Surveys

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VANADIUM IN APRIL 2005

Reported domestic consumption of vanadium in April 2005 was about 9% less than that of the previous month and was about 14% more than that of April 2004, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 398 metric tons (t) at the beginning of 2005 and 319 t at the end of April.

According to Ryan's Notes (2005c), U.S. ferrovanadium (FeV) prices ranged from \$56.778 to \$58.778 per pound of vanadium content in April, as compared with \$35.222 to \$36.556 in March. European FeV prices ranged from \$119.444 to \$129.444 per kilogram (kg) in April, as compared with \$82.111 to \$88.000 in March. Vanadium pentoxide (V₂O₅) prices ranged from \$21.556 to \$23.444 per pound in April as compared with \$16.833 to \$18.222 in March.

Prices of FeV in the United States caught up to and then surpassed prices in Europe, with the U.S. price hitting \$60-\$65 per pound. Prices for FeV in Europe were reported in a range of \$140-\$145, an increase of approximately 45% over the range for the previous month. The high FeV prices created credit problems for both buyers and sellers. Consumers who were reluctant to buy in March again postponed purchases wherever possible. Producers and consumers agreed that the FeV price spike was due to a shortage of V₂O₅ feed material. One industry observer looking for signs of relief doubted that Highveld Steel and Vanadium's announcement that it planned to increase V₂O₅ production by 30% during the next 18 months would improve the current short supply (Ryan's Notes, 2005a). The key player

behind the current bull run in prices was China. In the past, China was a net exporter of vanadium material, but the situation reversed itself in 2005, as China became a net importer (Metal Bulletin Research, 2005).

Precious Metals Australia (PMA) won a small victory in its effort to seek damages against Xstrata, plc. for mothballing the Windimurra Mine in Western Australia in December 2002. Xstrata Alloys, a subsidiary of Xstrata, plc., agreed to pay PMA A\$10 million to cover royalty payments and final rehabilitation of the Windimurra site and A\$5 million in full and final settlement of all outstanding claims by PMA related to Windimurra. In a separate transaction, Xstrata will sell to PMA the tenements, remaining Windimurra project assets, and all project information. The transaction was conditional on the Western Australian government approving the transfers and necessary releases within the next 6 months. Industry sources doubted that PMA could reopen Windimurra any time soon (Ryan's Notes, 2005b).

References Cited

- Metal Bulletin Research, 2005, Vanadium highlights: Metal Bulletin Research, Ferro-alloys Monthly, no. 152, April 26, p. 15.
- Ryan's Notes, 2005a, US FeV catches up to Europe: Ryan's Notes, v. 11, no. 15, April 11, p. 3.
- Ryan's Notes, 2005b, Xstrata settles with PMA: Ryan's Notes, v. 11, no. 17, April 25, p. 1.
- Ryan's Notes, 2005c, [untitled]: Ryan's Notes, v. 11, no. 18, May 2, p. 10.

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

(Kilograms, contained vanadium)

	2004 ^p		2005			
	Consumption	Stocks	March		April	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	3,510,000	298,000	318,000 ^r	287,000 ^r	289,000	244,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	214,000	101,000	27,800	91,300	20,600	75,500
Total	3,730,000	398,000	346,000 ^r	378,000 ^r	309,000	319,000

^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.

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)

	2004 ^p	2005		
		March	April	Year to date
Steel:				
Carbon	996,000	83,500 ^r	67,500	341,000
High-strength low-alloy	1,150,000	99,600	90,600	374,000
Stainless and heat-resisting	64,500	4,880	4,880	19,500
Full alloy	1,060,000	96,600 ^r	90,500	359,000
Tool	238,000	33,100	34,800	124,000
Total steel	3,510,000	318,000 ^r	288,000	1,220,000
Superalloys	8,350	1,010 ^r	827	3,450
Miscellaneous and unspecified ²	211,000	27,300 ^r	20,000	206,000
Total consumption	3,730,000	346,000 ^r	309,000	1,430,000

^pPreliminary. ^rRevised.

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:				
2004	19,100	\$66,700	31,200	\$1,710,000
2005:				
January	--	--	3,110	480,000
February	1	3,770	475	22,700
March:				
Germany	--	--	1,160	49,000
Russia	--	--	193	31,400
Total	--	--	1,360	80,400
Year to date	1	3,770	4,940	583,000
Exports:				
2004	10,900,000	24,000,000	522,000	7,760,000
2005:				
January	1,260,000	2,890,000	29,900	679,000
February	677,000	1,800,000	35,600	1,150,000
March:				
Austria	--	--	1,300	35,100
Brazil	7,110	32,400	--	--
Canada	72,300	210,000	--	--
France	--	--	2,660	121,000
India	2,150	10,800	--	--
Ireland	963	12,500	--	--
Japan	6,450	79,600	--	--
Mexico	209,000	446,000	--	--
Taiwan	30,200	139,000	--	--
Thailand	49,300	229,000	--	--
United Kingdom	22,000	117,000	18,300	391,000
Total	399,000	1,280,000	22,200	547,000
Year to date	2,330,000	5,970,000	87,800	2,380,000

-- 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:						
2004	3,020,000	\$62,100,000	1,040,000	\$8,600,000	120,000	\$1,650,000
2005:						
January	215,000	9,790,000	87,500	1,610,000	8,390	321,000
February	1,010,000	12,800,000	130,000	3,610,000	8,400	361,000
March:						
Australia	19,000	916,000	--	--	--	--
Austria	15,300	1,120,000	--	--	--	--
Canada	7,600	268,000	--	--	--	--
China	59,800	94,000	40,200	1,090,000	--	--
Czech Republic	9,000,000	7,120,000	--	--	--	--
Japan	8,320	77,900	--	--	--	--
South Africa	--	--	20,500	834,000	--	--
Swaziland	32,100	1,630,000	--	--	--	--
Total	9,140,000	11,200,000	60,700	1,920,000	--	--
Year to date	10,400,000	33,800,000	279,000	7,150,000	24,800	682,000
Exports:						
2004	267,000	8,770,000	240,000	2,090,000	584,000	4,140,000
2005:						
January	266	5,350	8,000	156,000	63,300	613,000
February	9,700	550,000	5,010	100,000	58,100	1,030,000
March:						
Canada	--	--	--	--	14,400	144,000
Mexico	21,200	705,000	--	--	--	--
Venezuela	--	--	--	--	13,500	139,000
Total	21,200	705,000	--	--	27,800	283,000
Year to date	31,100	1,260,000	13,000	256,000	149,000	1,920,000

-- 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)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity	Value
2004	4,260,000	\$8,520,000	11,100,000	\$2,000,000	244,000,000	\$10,400,000
2005:						
January	321,000	189,000	264,000	63,900	--	--
February	129,000	239,000	499,000	98,800	149,000	522,000
March:						
Canada	--	--	638,000	116,000	105,000	20,200
Mexico	200,000	471,000	--	--	--	--
Total	200,000	471,000	638,000	116,000	105,000	20,200
Year to date	650,000	900,000	1,400,000	278,000	254,000	542,000

-- 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
2004	500	\$19,100	74,700	\$1,150,000
2005:				
January	--	--	320	21,700
February	--	--	330	19,300
March:				
South Africa	--	--	6,250	172,000
Total	--	--	6,250	172,000
Year to date	--	--	6,900	213,000

-- Zero.

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

Source: U.S. Census Bureau.