

Mineral Industry Surveys

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VANADIUM IN NOVEMBER 2003

Reported domestic consumption of vanadium in November 2003 was about 5% more than that of the previous month and was about 12% more than that of November 2002, according to the U.S. Geological Survey. Vanadium consumption from January through November was about 4% less than during the same period in 2002. Consumer stocks of vanadium, in all forms, were 209 metric tons (t) at the beginning of 2003 and 173 t at the end of November.

According to Ryan's Notes (2003c), the range for U.S. ferrovanadium (FeV) prices during November was \$5.379 to \$5.543 per pound of vanadium content, as compared with \$5.372 to \$5.522 in October. European FeV prices ranged from \$10.671 to \$10.943 per kilogram of vanadium content in November as compared with \$10.889 to \$11.089 in October. In November, vanadium pentoxide (V_2O_5) prices ranged from \$2.121 to \$2.207 per pound, as compared with \$2.050 to \$2.150 in October.

The price of FeV in the United States was marginally higher in November compared with that in October. The price of V_2O_5 in the United States was about \$0.06 per pound higher while the price of European FeV decreased by about \$0.10 per kilogram. In the United States and Europe, spot V_2O_5 prices jumped to a range of \$2.30 to \$2.35 per pound at the end of November,

from about \$2.20 to \$2.25 at the end of October. Converters of V_2O_5 to FeV reported that they continue to be squeezed by the V_2O_5 price, as it was so out of line with achievable FeV prices (Ryan's Notes, 2003a).

Despite the announcement in October that Xstrata, Plc would cease production at its Vantech operation in South Africa, effective January 1, 2004, spot ferrovanadium prices were only slightly affected in November. Removing 4,500 t (10 million pounds) of V_2O_5 production by closing Vantech should have resulted in price increases, but Xstrata had been gradually decreasing production at Vantech in 2003 while increasing production at its Rhovan plant (Ryan's Notes, 2003b). In addition, sellers caution that Xstrata may hold sizeable inventories, estimated as high as 18,000 t (40 million pounds), which they have gradually released.

References Cited

- Ryan's Notes, 2003a, Ferroalloy notes, ferrovanadium prices are slightly firmer: Ryan's Notes, v. 9, no. 47, November 24, p. 3.
Ryan's Notes, 2003b, Vantech closure has little impact on FeV: Ryan's Notes, v. 9, no. 46, November 17, p. 2.
Ryan's Notes, 2003c, [untitled]: Ryan's Notes, v. 9, no. 49, December 8, p. 4.

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

(Kilograms, contained vanadium)

	2002		2003			
	Consumption	Stocks	October		November	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	2,730,000	189,000	237,000	185,000	249,000	165,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	349,000	20,200	17,100	7,340	17,700	7,330
Total	3,080,000	209,000	254,000	192,000	267,000	173,000

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)

	2002	2003		
		October	November	Year to date ²
Steel:				
Carbon	731,000	60,700	78,900	718,000
High-strength low-alloy	900,000	77,600	78,000	848,000
Stainless and heat-resisting	37,500	2,290	2,290	24,500
Full alloy	748,000	69,100	62,100	735,000
Tool	270,000	22,900	23,200	238,000
Total steel	2,690,000	233,000	244,000	2,560,000
Superalloys	12,400	1,550	1,230	12,800
Miscellaneous and unspecified ³	382,000	20,100	21,200	217,000
Total consumption	3,080,000	254,000	267,000	2,790,000

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

²Includes revisions to prior month's data.

³Includes 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:				
2002	97,500	\$206,000	32,300	\$1,270,000
2003:				
August	--	--	37,300	578,000
September	38,300	97,700	8,950	117,000
October:				
Canada	20,100	39,800	--	--
Germany	--	--	23,800	272,000
Russia	--	--	269	16,600
Total	20,100	39,800	24,100	289,000
Year to date	232,000	425,000	126,000	1,920,000
Exports:				
2002	529,000	11,700,000	49,200	898,000
2003:				
August	803,000	1,710,000	1,110	37,700
September	754,000	1,400,000	2,100	45,000
October:				
Austria	--	--	118	127,000
Canada	412,000	662,000	--	--
Japan	2,050	25,600	--	--
Mexico	406,000	677,000	--	--
Norway	4,830	38,200	--	--
United Kingdom	3,130	42,400	--	--
Total	828,000	1,450,000	118	127,000
Year to date	4,970,000	13,200,000	189,000	3,750,000

-- 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:						
2002	2,520,000	\$19,400,000	406,000	\$1,990,000	42,300	\$560,000
2003:						
August	140,000	1,270,000	7,490	67,200	7,580	139,000
September	136,000	1,430,000	--	--	--	--
October:						
Austria	15,300	169,000	--	--	--	--
Canada	36,600	396,000	--	--	--	--
China	--	--	--	--	3,380	40,300
Czech Republic	16,400	172,000	--	--	--	--
Switzerland	32,300	365,000	--	--	--	--
Total	101,000	1,100,000	--	--	3,380	40,300
Year to date	905,000	9,050,000	394,000	2,960,000	28,200	492,000
Exports:						
2002	142,000	1,550,000	91,200	568,000	203,000	1,700,000
2003:						
August	12,100	186,000	9,160	40,000	11,800	156,000
September	37,900	553,000	6,000	48,700	19,500	262,000
October:						
Bahamas	--	--	450	4,050	--	--
Brazil	338	11,200	--	--	--	--
Canada	--	--	--	--	8,660	126,000
Mexico	20,600	281,000	--	--	--	--
Total	21,000	292,000	450	4,050	8,660	126,000
Year to date	351,000	4,820,000	185,000	1,540,000	233,000	2,160,000

-- 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
2002	3,830,000	\$520,000	10,300,000	\$1,560,000	243,000,000	\$19,900,000
2003:						
August	784,000	1,130,000	1,370,000	309,000	40,900,000	346,000
September	1,080,000	762,000	2,130,000	352,000	29,200,000	501,000
October:						
Canada	--	--	1,420,000	277,000	46,600,000	588,000
Mexico	472,000	123,000	--	--	--	--
United Kingdom	--	--	38,500	59,600	--	--
Total	472,000	123,000	1,460,000	337,000	46,600,000	588,000
Year to date	3,410,000	2,380,000	11,600,000	2,440,000	252,000,000	3,900,000

-- 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
2002	14,100	\$390,000	48,100	\$567,000
2003:				
August	--	--	16,000	181,000
September	--	--	9,290	154,000
October:				
Japan	--	--	38	6,620
South Africa	--	--	6,270	81,500
Total	--	--	6,310	88,100
Year to date	--	--	53,900	718,000

-- Zero.

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

Source: U.S. Census Bureau.