

Mineral Industry Surveys

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VANADIUM IN FEBRUARY 2006

Reported domestic consumption of vanadium in February 2006 was about the same as that of the previous month and was about 8% less than that of February 2005, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 361 metric tons (t) at the beginning of 2006 and 345 t at the end of February.

According to Ryan's Notes (2006b), U.S. ferrovanadium (FeV) prices ranged from \$19.625 to \$20.188 per pound of vanadium content in February, as compared with \$19.444 to \$20.222 in January. European FeV prices ranged from \$44.875 to \$46.750 per kilogram in February, as compared with \$36.222 to \$38.222 in January. Vanadium pentoxide (V_2O_5) prices ranged from \$8.688 to \$9.250 per pound in February, as compared with \$8.250 to \$8.856 in January.

Xstrata Plc. (Zug, Switzerland) expected to complete an environmental assessment of a potential expansion of its Rhovan, South Africa, vanadium operation by mid-2006. V_2O_5

production capacity at Rhovan would be increased from about 9,000 t (20 million pounds) to about 13,000 t (29 million pounds) of V_2O_5 . Production costs for V_2O_5 increased slightly in 2005 owing to an overburden removal campaign. Xstrata expected production costs at the Rhovan operation to decrease in 2006 following completion of overburden removal. Xstrata also expected the proposed expansion to further lower production costs through economies of scale. Carbon steel production, the major market for vanadium, was expected to remain strong in 2006 (Ryan's Notes, 2006a).

References Cited

- Ryan's Notes, 2006a, Xstrata plans V_2O_5 capacity hike: Ryan's Notes, v. 12, no. 10, March 6, p. 2.
Ryan's Notes, 2006b, [untitled]: Ryan's Notes, v. 12, no. 10, March 6, p. 10.

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

(Kilograms, contained vanadium)

	2005 ^p		2006			
	Consumption	Stocks	January		February	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	3,430,000	335,000	266,000 ^r	366,000 ^r	262,000	316,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	260,000	25,700	21,200 ^r	20,500 ^r	24,900	28,200
Total	3,690,000	361,000	287,000 ^r	386,000 ^r	287,000	345,000

^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)

	2005 ^p	2006		
		January	February	Year to date
Steel:				
Carbon	902,000	64,600 ^r	60,700	125,000
High-strength low-alloy	1,060,000	82,500 ^r	83,600	166,000
Stainless and heat-resisting	59,900	5,080	5,080	10,200
Full alloy	1,000,000	90,500	86,600	177,000
Tool	401,000	23,000	25,900	48,900
Total steel	3,430,000	266,000	262,000	528,000
Superalloys	9,610	645	655	1,300
Miscellaneous and unspecified ²	253,000	20,700 ^r	24,400	45,100
Total consumption	3,690,000	287,000 ^r	287,000	574,000

^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:				
2005	1,010	\$15,500	54,800	\$3,800,000
2006:				
January:				
Germany	--	--	1,240	144,000
Total	--	--	1,240	144,000
Exports:				
2005	14,100,000	42,000,000	293,000	1,640,000
2006:				
January:				
Austria	--	--	3,710	94,000
Belgium	240	3,120	--	--
Brazil	14,500	47,400	--	--
Canada	231,000	714,000	--	--
China	1,930	10,100	--	--
Germany	--	--	3,510	271,000
Guyana	1,680	4,680	--	--
India	3,330	11,200	--	--
Japan	170,000	955,000	7,460	403,000
Mexico	4,090,000	3,570,000	--	--
Thailand	94,400	459,000	--	--
United Kingdom	14,100	72,300	18,400	869,000
Sweden	--	--	50	8,750
Total	4,620,000	5,840,000	33,100	1,650,000

-- 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:						
2005	12,000,000	\$131,000,000	1,410,000	\$52,900,000	213,000	\$6,540,000
2006:						
January:						
Austria	--	--	48	2,870	6,940	440,000
Canada	19,000	1,220,000	--	--	--	--
China	--	--	26,500	954,000	--	--
Czech Republic	162,000	7,600,000	--	--	--	--
South Africa	--	--	52,100	2,070,000	--	--
Total	181,000	8,820,000	78,600	3,030,000	6,940	440,000
Exports:						
2005	500,000	19,100,000	247,000	5,340,000	822,000	14,500,000
2006:						
January:						
Australia	170	8,450	--	--	--	--
Canada	5,020	107,000	--	--	35,800	324,000
Germany	--	--	1,000	25,400	2,580	16,300
Italy	--	--	37,800	794,000	--	--
Mexico	3,220	110,000	--	--	--	--
Russia	--	--	--	--	37,900	668,000
Saudi Arabia	--	--	125	7,750	--	--
Venezuela	3,950	218,000	--	--	--	--
Total	12,400	443,000	38,900	827,000	76,300	1,010,000

-- 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
2005	4,360,000	\$9,820,000	6,850,000	\$1,100,000
2006:				
January:				
Canada	--	--	146,000	126,000
Mexico	19,000	252,000	11,500	21,600
United Kingdom	--	--	--	--
Total	19,000	252,000	157,000	148,000

-- 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
2005	35,000	\$77,000	91,700	\$2,800,000
2006:				
January:				
Japan	--	--	1	2,020
Korea, Republic of	--	--	4,640	25,500
South Africa	--	--	6,270	271,000
United Kingdom	--	--	6,690	66,200
Total	--	--	17,600	365,000

-- Zero.

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

Source: U.S. Census Bureau.