

Mineral Industry Surveys

For information, contact:

Michael J. Magyar, Vanadium Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4964, Fax: (703) 648-7757
E-mail: mmagyar@usgs.gov

Subina W. Pandey (Data)
Telephone: (703) 648-7966
Fax: (703) 648-7975
E-mail: spandey@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

VANADIUM IN MARCH 2004

Reported domestic consumption of vanadium in March 2004 was about 10% more than that of the previous month and was about 1% more than that of March 2003, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 238 metric tons (t) at the beginning of 2004, and 210 t at the end of March.

According to Ryan's Notes (2004b), U.S. ferrovanadium (FeV) prices ranged from \$12.889 to \$13.500 per pound of vanadium content in March, as compared with \$12.325 to \$13.263 in February. European FeV prices ranged from \$23.678 to \$24.611 per kilogram (kg) in March as compared with \$22.850 to \$23.438 in February. In the United States, FeV spot sales were booked up to \$14.00 per pound, and European FeV spot prices were \$24.00 to \$25.00 per kg at the end of March (Ryan's Notes, 2004a). In March, vanadium pentoxide (V_2O_5) prices ranged from \$5.111 to \$5.544 per pound, as compared with \$4.338 to \$4.600 in February. V_2O_5 spot sales in the United States rose to \$5.20 to \$5.70 per pound from about \$5.00 to \$5.15 in February.

The European vanadium market is usually the pricing leader, but that situation was reversed during March as the United States market was more severely affected by a shortage of vanadium material, resulting in price increases. New building regulations in China have forced mills to add greater quantities

of vanadium to steel, which increased Chinese consumption and left less material available for export. The ongoing strike at Shieldalloy Metallurgical Corporation's Cambridge works, together with the antidumping duties on converted vanadium from Russia, South Africa, and China, has exacerbated the situation (Metal Bulletin Research, 2004).

Alpicom S.A., the ferrovanadium sales agent for Russia's Tulachermet-Vanadium (Tula), has appointed Green Trading Corp. as its sales agent in Japan. Tula had been selling ferrovanadium through several traders. Japan's imports from Russia dropped to 60,000 kg in 2003 from 220,000 kg in 2002. Japan's total imports however, rose to 4.3 million kg in 2003 from 3.2 million kg in 2002. Green trading will continue Tula's policy of selling directly to end-use customers only (Ryan's Notes, 2004a).

References Cited

- Metal Bulletin Research, 2004, Vanadium highlights, US market sees strongest gains as tight supply conditions bite: Metal Bulletin Research, Ferro-alloys Monthly, no. 139, March 26, p. 15.
Ryan's Notes, 2004a, US ferrovanadium prices narrowed: Ryan's Notes, v. 10, no. 11, March 15, p. 4.
Ryan's Notes, 2004b, [untitled]: Ryan's Notes, v. 10, no. 14, April 5, p. 4.

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

(Kilograms, contained vanadium)

	2003 ^p		2004			
	Consumption	Stocks	February		March	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	2,860,000	201,000	232,000 ^r	190,000	251,000	202,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	195,000	37,400	19,000 ^r	26,900 ^r	24,900	7,940
Total	3,060,000	238,000	251,000 ^r	217,000 ^r	276,000	210,000

^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)

	2003 ^p	2004		
		February	March	Year to date
Steel:				
Carbon	782,000	54,700	72,600	196,000
High-strength low-alloy	928,000	82,000	79,100	240,000
Stainless and heat-resisting	26,800	5,360 ^r	5,360	16,100
Full alloy	802,000	75,600	76,800	229,000
Tool	261,000	14,100 ^r	17,200	44,300
Total steel	2,800,000	232,000 ^r	251,000	726,000
Superalloys	13,800	603 ^r	508	1,790
Miscellaneous and unspecified ³	242,000	18,800 ^r	24,700	66,200
Total consumption	3,060,000	251,000 ^r	276,000	794,000

^pPreliminary. ^rRevised.

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:				
2003	232,000	\$425,000	186,000	\$2,850,000
2004:				
January	--	--	1,260	220,000
February:				
Germany	--	--	108	58,800
Russia	--	--	438	28,900
Switzerland	--	--	148	11,700
Total	--	--	694	99,300
Year to date	--	--	1,960	319,000
Exports:				
2003	6,710,000	16,700,000	201,000	3,910,000
2004:				
January	208,000	659,000	300	39,700
February:				
Austria	--	--	149	53,100
Canada	13,400	43,100	--	--
Ecuador	994	3,290	--	--
Germany	--	--	4,350	53,700
Hong Kong	2,110	52,000	--	--
Indonesia	2,010	6,630	--	--
Ireland	--	--	--	--
Japan	15,300	188,000	--	--
Mexico	328,000	575,000	--	--
Russia	--	--	--	--
United Kingdom	3,790	30,900	593	37,000
Singapore	5,020	22,900	--	--
Spain	--	--	--	--
Total	370,000	922,000	5,100	144,000
Year to date	578,000	1,580,000	5,400	183,000

-- 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:						
2003	1,360,000	\$14,300,000	474,000	\$3,610,000	38,700	\$769,000
2004:						
January	223,000	2,670,000	56,100	394,000	--	--
February:						
Austria	31,100	608,000	--	--	--	--
Canada	51,800	434,000	--	--	--	--
Czech Republic	169,000	3,190,000	--	--	--	--
South Africa	--	--	50,200	302,000	--	--
Switzerland	25,700	545,000	--	--	--	--
Total	277,000	4,780,000	50,200	302,000	--	--
Year to date	500,000	7,450,000	106,000	696,000	--	--
Exports:						
2003	397,000	5,420,000	185,000	1,540,000	284,000	2,450,000
2004:						
January	7,830	148,000	6,790	64,500	61,300	482,000
February:						
Canada	3,910	62,500	--	--	31,800	447,000
Chile	--	--	--	--	51,100	240,000
Italy	177	133	--	--	--	--
Japan	--	--	--	--	627	10,800
Mexico	11,100	211,000	--	--	--	--
South Africa	--	--	--	--	32,000	148,000
Trinidad and Tobago	--	--	1,000	9,800	--	--
Total	15,200	274,000	1,000	9,800	116,000	846,000
Year to date	23,000	425,000	7,790	74,300	177,000	1,330,000

-- 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
2003	4,940,000	\$3,030,000	14,300,000	\$3,140,000	369,000,000	\$6,190,000
2004:						
January	--	--	1,450,000	293,000	16,800	28,600
February:						
Canada	--	--	1,490,000	281,000	8,440	14,200
Germany	--	--	--	--	103,000	178,000
Mexico	60,000	10,300	--	--	--	--
United Kingdom	--	--	--	--	4,000	5,400
Total	60,000	10,300	1,490,000	281,000	115,000	197,000
Year to date	60,000	10,300	2,940,000	574,000	132,000	226,000

-- 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
2003	--	--	72,900	\$902,000
2004:				
January	--	--	18,000	344,000
February, Germany	--	--	208	25,100
Year to date	--	--	18,200	369,000

-- Zero.

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

Source: U.S. Census Bureau.