

Mineral Industry Surveys

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VANADIUM IN OCTOBER 2004

Reported domestic consumption of vanadium in October 2004 was about 7% more than that of the previous month and was about 30% more than that of October 2003, according to the U.S. Geological Survey. Year-to-date consumption of vanadium from January through October was about 20% more than during the same period in 2003. Consumer stocks of vanadium, in all forms, were 238 metric tons (t) at the beginning of 2004 and 203 t at the end of October.

According to Ryan's Notes (2004), U.S. ferrovanadium (FeV) prices ranged from \$12.522 to \$13.039 per pound of vanadium content in October, as compared with \$10.650 to \$11.025 in September. European FeV prices ranged from \$28.222 to \$29.278 per kilogram in October, as compared with \$23.563 to \$24.563 in September. Vanadium pentoxide (V₂O₅) prices ranged from \$5.889 to \$6.306 per pound in October as compared with \$5.063 to \$5.344 in September.

U.S. ferrovanadium prices rose in October owing to production slowdowns in Europe and China. A European converter of vanadium-bearing slag was reported to have shut down in October because slag was not available. A U.S. producer stated "With prices higher in Europe, it made sense to sell material there rather than in the United States" (Platts Metals Week, 2004). U.S. imports of ferrovanadium from

China and South Africa have been subject to antidumping duties since December 2002.

Chinese vanadium producer Panzhihua Iron & Steel Company reportedly shut down one of its vanadium trioxide furnaces at the end of October for about 45 days of regular maintenance. Vanadium trioxide can be used as an alternative to vanadium pentoxide in the production of ferrovanadium. Panzhihua, China's leading producer of vanadium, has the capacity to produce 2,800 metric tons per year of ferrovanadium. Russian vanadium producer Tulachermet-Vanadium (Tula) reportedly cut production by about 30% in October owing to unexpected maintenance work. Representatives of Tula stated it might be mid-November before they re-enter the ferrovanadium spot market. Traders expected these developments to exert further upward pressure on vanadium prices in the coming months (Metal Bulletin Research, 2004).

References Cited

- Metal Bulletin Research, 2004, Vanadium highlights: Metal Bulletin Research, Ferro-alloys Monthly, no. 146, October 27, p. 15.
Platts Metals Week, 2004, US ferrovanadium prices surge: Platts Metals Week, v. 75, no. 43, October 25, p. 4.
Ryan's Notes, 2004, [untitled]: Ryan's Notes, v. 10, no. 44, November 1, p. 4.

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

(Kilograms, contained vanadium)

	2003		2004			
	Consumption	Stocks	September		October	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	2,770,000	201,000	287,000 ^r	221,000 ^r	311,000	194,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	188,000	37,400	21,000	11,900	18,200	8,750
Total	2,960,000	238,000	308,000 ^r	233,000 ^r	330,000	203,000

^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	2004		
		September	October	Year to date ²
Steel:				
Carbon	783,000	77,900 ^r	93,200	810,000
High-strength low-alloy	924,000	93,300 ^r	97,700	964,000
Stainless and heat-resisting	64,500	5,360	5,360	53,700
Full alloy	799,000	90,100 ^r	92,500	880,000
Tool	143,000	19,700	22,200	169,000
Total steel	2,710,000	286,000 ^r	311,000	2,880,000
Superalloys	10,000	854 ^r	821	6,690
Miscellaneous and unspecified ³	235,000	20,700	17,800	171,000
Total consumption	2,960,000	308,000 ^r	330,000	3,050,000

^rRevised. W Withheld to avoid disclosing company proprietary data.

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:				
July	9	5,710	83	45,300
August	58	2,800	9,850	303,000
September:				
Germany	--	--	142	76,800
Switzerland	68	4,080	--	--
United Kingdom	--	--	1	4,860
Total	68	4,080	143	81,700
Year to date	19,100	66,700	28,600	1,510,000
Exports:				
2003	6,710,000	16,700,000	201,000	3,910,000
2004:				
July	380,000	990,000	28,800	516,000
August	633,000	1,460,000	26,800	544,000
September:				
Canada	297,000	616,000	--	--
Cyprus	477	6,200	--	--
Germany	11,300	182,000	--	--
Hong Kong	738	21,700	--	--
Japan	966	3,620	25,400	537,000
Korea, Republic of	351	3,490	--	--
Mexico	258,000	499,000	--	--
Norway	5,050	44,500	--	--
Taiwan	9,010	41,400	--	--
Thailand	19,500	87,600	--	--
United Kingdom	22,000	98,800	21,400	387,000
Total	624,000	1,610,000	46,700	925,000
Year to date	6,010,000	13,400,000	235,000	4,140,000

-- 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:						
July	246,000	5,220,000	13,200	169,000	4,450	75,400
August	186,000	3,750,000	107,000	915,000	--	--
September:						
Austria	--	--	--	--	6,940	204,000
Canada	13,900	296,000	--	--	--	--
Czech Republic	123,000	3,120,000	--	--	--	--
South Africa	--	--	17,500	270,000	--	--
Swaziland	79,800	1,200,000	--	--	--	--
Total	216,000	4,620,000	17,500	270,000	6,940	204,000
Year to date	2,300,000	45,000,000	842,000	6,480,000	120,000	1,640,000
Exports:						
2003	397,000	5,420,000	185,000	1,540,000	284,000	2,450,000
2004:						
July	15,600	235,000	1,000	12,500	56,500	455,000
August	--	--	4,360	49,300	48,700	313,000
September:						
Canada	--	--	--	--	10,300	91,600
Japan	--	--	--	--	309	2,750
Mexico	7,560	228,000	1,500	18,800	--	--
South Africa	--	--	--	--	16,000	74,100
Total	7,560	228,000	1,500	18,800	26,600	168,000
Year to date	133,000	3,090,000	225,000	1,780,000	489,000	3,580,000

-- 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:						
July	396,000	918,000	966,000	225,000	28,800,000	1,030,000
August	288,000	535,000	607,000	91,300	10,900,000	811,000
September:						
Canada	--	--	780,000	144,000	--	--
Germany	--	--	--	--	--	--
Guatemala	17,400	9,840	--	--	--	--
Mexico	307,000	780,000	--	--	--	--
South Africa	--	--	--	--	2,000,000	448,000
Total	324,000	789,000	780,000	144,000	2,000,000	448,000
Year to date	3,380,000	6,310,000	10,100,000	1,820,000	170,000,000	7,380,000

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 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:				
July	500	19,100	707	34,300
August	--	--	6,280	70,700
September:				
Germany	--	--	695	23,700
Japan	--	--	31	4,400
South Africa	--	--	1,290	15,900
Total	--	--	2,020	44,000
Year to date	500	19,100	53,300	822,000

-- Zero.

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

Source: U.S. Census Bureau.