

Mineral Industry Surveys

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VANADIUM IN NOVEMBER 2006

Reported domestic consumption of vanadium in November 2006 was about 9% less than that of the previous month, and was about 3% less than that of November 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 311 t at the end of November.

According to Ryan's Notes (2006b), U.S. ferrovanadium (FeV) prices ranged from \$16.929 to \$17.714 per pound of vanadium content in November, as compared with \$17.306 to \$18.056 in October. European FeV prices ranged from \$34.714 to \$35.714 per kilogram in November, as compared with \$37.111 to \$38.111 in October. Vanadium pentoxide (V₂O₅) prices ranged from \$7.000 to \$7.357 per pound in November, as compared with \$7.400 to \$7.822 in October.

JFE Material Co. Ltd., Toyama, Japan, began production of 50% FeV from spent desulfurization catalysts and petroleum residues in May and began shipments to JFE Steel Corp. and other JFE group companies in November. JFE Material expected to meet its 2006 production target of 700 to 800 t of vanadium contained in FeV. In addition, the plant expected to recover about 350 to 400 t each of both nickel and molybdenum metal in 2006 (Ryan's Notes, 2006a).

References Cited

Ryan's Notes, 2006a, Ferroalloy notes: Ryan's Notes, v. 12, no. 44, November 6, p. 4.
Ryan's Notes, 2006b, [untitled]: Ryan's Notes, v. 12, no. 48, December 4, p. 10.

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

(Kilograms, contained vanadium)

	2005 ^p		2006			
	Consumption	Stocks	October		November	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	3,430,000	335,000	273,000 ^r	251,000 ^r	252,000	289,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	260,000	25,700	34,100	30,800	28,300	21,700
Total	3,690,000	361,000	307,000 ^r	282,000 ^r	280,000	311,000

^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		
		October	November	Year to date
Steel:				
Carbon	902,000	76,800	62,100	857,000
High-strength low-alloy	1,060,000	78,300	78,200	937,000
Stainless and heat-resisting	59,900	5,060	5,060	55,600
Full alloy	1,000,000	82,900 ^r	79,200	945,000
Tool	401,000	29,600 ^r	27,500	295,000
Total steel	3,430,000	273,000 ^r	252,000	3,090,000
Superalloys	9,610	353	301	3,780
Miscellaneous and unspecified ²	253,000	33,800 ^r	28,100	270,000
Total consumption	3,690,000	307,000 ^r	280,000	3,360,000

^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:				
August	--	--	33,800	1,200,000
September	--	--	99	69,800
October:				
Germany	--	--	106	75,300
United Kingdom	--	--	1	2,920
Total	--	--	107	78,200
Year to date	102,000	312,000	102,000	4,470,000
Exports:				
2005	14,100,000	42,000,000	293,000	1,640,000
2006:				
August	966,000	3,320,000	24,800 ^r	743,000 ^r
September	1,380,000	5,050,000	72,600	2,140,000
October:				
Austria	--	--	3,330	94,000
Belgium	21,300	627,000	--	--
Brazil	25,800	122,000	--	--
Canada	403,000	1,160,000	--	--
China	73,600	373,000	--	--
Germany	--	--	20,500	745,000
Japan	18,100	531,000	6,310	244,000
Malaysia	12	8,040	--	--
Mexico	745,000	2,160,000	--	--
Thailand	62,400	340,000	--	--
United Kingdom	87,000	453,000	5,060	171,000
Total	1,440,000	5,770,000	35,200	1,250,000
Year to date	14,000,000	43,100,000	445,000	11,800,000

^rRevised. -- 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:						
August	204,000	8,310,000	199,000	4,390,000	--	--
September	133,000	6,000,000	108,000	2,420,000	--	--
October:						
Austria	--	--	50	5,280	--	--
Canada	2,860	97,700	--	--	--	--
China	--	--	34,300	1,060,000	--	--
Czech Republic	145,000	5,670,000	--	--	--	--
Germany	109	11,600	--	--	--	--
Korea, Republic of	30,600	1,130,000	--	--	--	--
Mexico	75	10,500	--	--	2,360	104,000
Russia	--	--	56,800	845,000	--	--
South Africa	--	--	30,100	618,000	--	--
Total	179,000	6,920,000	121,000	2,520,000	2,360	104,000
Year to date	1,790,000	77,500,000	1,650,000	39,600,000	107,000	3,010,000
Exports:						
2005	500,000	19,100,000	247,000	5,340,000	822,000	14,500,000
2006:						
August	37,600	947,000	31,400	596,000	88,200	785,000
September	79,300	2,700,000	18,000	970,000	70,800	700,000
October:						
Australia	227	10,400	--	--	--	--
Belgium	--	--	18,000	384,000	--	--
Brazil	--	--	--	--	2,710	39,900
Canada	4,640	195,000	--	--	60,100	535,000
France	--	--	--	--	7,280	111,000
Italy	--	--	--	--	449	4,000
Mexico	5,230	181,000	--	--	--	--
Spain	--	--	10,000	175,000	--	--
United Kingdom	--	--	40,000	882,000	--	--
Total	10,100	386,000	68,000	1,440,000	70,600	691,000
Year to date	375,000	10,900,000	310,000	6,520,000	807,000	7,400,000

-- 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	1,060,000	\$9,820,000	1,200,000	\$1,100,000
2006:				
August	--	--	77,400	90,100
September	145,000	1,650,000	127,000	95,600
October:				
Canada	--	--	108,000	77,300
Mexico	100,000	1,120,000	--	--
Total	100,000	1,120,000	108,000	77,300
Year to date	374,000	4,210,000	1,000,000	967,000

-- 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:				
August	--	--	6,260	172,000
September	--	--	299	5,370
October, Germany	--	--	5,590	149,000
Year to date	16	25,800	101,000	2,880,000

-- Zero.

¹Data are rounded to no more than three significant digits.

Source: U.S. Census Bureau.