

Mineral Industry Surveys

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VANADIUM IN DECEMBER 2006

Reported domestic consumption of vanadium in December 2006 was about 6% more than that of the previous month, and was about 3% less than that of December 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 297 t at the end of December.

According to Ryan's Notes (2006b), U.S. ferrovanadium (FeV) prices ranged from \$16.250 to \$16.889 per pound of vanadium content in December, as compared with \$16.929 to \$17.714 in November. European FeV prices ranged from \$33.000 to \$34.000 per kilogram in December, as compared with \$34.714 to \$35.714 in November. Vanadium pentoxide (V_2O_5) prices ranged from \$6.333 to \$6.722 per pound in December, as compared with \$7.000 to \$7.357 in November.

The V_2O_5 content of vanadium-bearing slag in China was expected to increase 1,500 t to about 14,000 t in 2006 owing to increased raw steel production. Overall Chinese V_2O_5 production was expected to increase 2,000 t to about 16,000 t in 2006. Domestic vanadium consumption, as either V_2O_5 or FeV, was expected to increase 1,000 t to about 9,000 t of V_2O_5 content in 2006 with the remaining vanadium-bearing material available for export (Ryan's Notes, 2006a).

References Cited

Ryan's Notes, 2006a, Vanadium prices soften worldwide: Ryan's Notes, v. 12, no. 50, December 18, p. 2.
Ryan's Notes, 2006b, [untitled]: Ryan's Notes, v. 13, no. 1, January 1, p. 10.

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

(Kilograms, contained vanadium)

	2005 ^p		2006			
	Consumption	Stocks	November		December	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	3,430,000	335,000	247,000 ^r	297,000 ^r	266,000	249,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	260,000	25,700	28,300	21,700	26,200	47,800
Total	3,690,000	361,000	275,000 ^r	319,000 ^r	292,000	297,000

^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		
		November	December	Year to date
Steel:				
Carbon	902,000	56,600 ^r	78,400	931,000
High-strength low-alloy	1,060,000	78,200	78,200	1,020,000
Stainless and heat-resisting	59,900	5,060	5,060	60,700
Full alloy	1,000,000	79,200	77,100	1,020,000
Tool	401,000	27,400	27,300	322,000
Total steel	3,430,000	247,000 ^r	266,000	3,350,000
Superalloys	9,610	263 ^r	430	4,130
Miscellaneous and unspecified ²	253,000	28,100	25,900	296,000
Total consumption	3,690,000	275,000 ^r	292,000	3,650,000

^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:				
September	--	--	99	69,800
October	--	--	107	78,200
November:				
Germany	--	--	17,800	558,000
Russia	--	--	543	71,400
Total	--	--	18,400	630,000
Year to date	102,000	312,000	120,000	5,090,000
Exports:				
2005	14,100,000	42,000,000	293,000	1,640,000
2006:				
September	1,380,000	5,050,000	72,600	2,140,000
October	1,440,000	5,770,000	35,200	1,250,000
November:				
Australia	680	20,000	--	--
Belgium	49,000	1,440,000	5,040	177,000
Canada	464,000	1,390,000	--	--
China	47,900	237,000	--	--
Hungary	400	4,150	--	--
India	23,600	132,000	--	--
Italy	2,250	64,800	--	--
Japan	7,100	79,100	2,160	71,700
Mexico	1,350,000	4,000,000	--	--
Taiwan	9,740	54,200	--	--
Thailand	6,300	34,200	--	--
United Kingdom	40,800	218,000	--	--
Total	2,000,000	7,670,000	7,210	249,000
Year to date	16,000,000	50,600,000	452,000	12,100,000

-- 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:						
September	133,000	6,000,000 ^r	108,000	2,420,000	--	--
October	179,000	6,920,000	121,000	2,520,000	2,360	104,000
November:						
Austria	16,100	627,000	50	4,520	--	--
Canada	27,100	1,020,000	--	--	--	--
China	--	--	17,000	515,000	--	--
Czech Republic	97,700	3,720,000	--	--	--	--
Germany	222	16,100	76	7,450	--	--
Korea, Republic of	15,300	546,000	--	--	--	--
Russia	--	--	56,500	837,000	--	--
South Africa	--	--	41,100	1,310,000	--	--
Total	156,000	5,930,000	115,000	2,670,000	--	--
Year to date	1,950,000	83,400,000	1,740,000	42,300,000	107,000	3,010,000
Exports:						
2005	500,000	19,100,000	247,000	5,340,000	822,000	14,500,000
2006:						
September	79,300	2,700,000	18,000	348,000 ^r	70,800	700,000
October	10,100	386,000	68,000	1,440,000	70,600	691,000
November:						
Argentina	8,000	294,000	--	--	--	--
Brazil	--	--	--	--	5,430	79,800
Canada	996	40,800	--	--	--	--
China	--	--	--	--	9,500	146,000
Italy	504	16,800	16,200	348,000	449	4,000
Mexico	150	9,700	1,760	58,700	--	--
Spain	--	--	10,400	154,000	--	--
Total	9,650	362,000	28,300	561,000	15,400	230,000
Year to date	373,000	11,200,000	338,000	7,080,000	822,000	7,630,000

^rRevised. -- 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:				
September	145,000	1,650,000	127,000	95,600
October	100,000	1,120,000	108,000	77,300 [†]
November:				
Canada	--	--	80,500	87,200
Mexico	63,600	747,000	--	--
Total	63,600	747,000	80,500	87,200
Year to date	437,000	4,960,000	1,080,000	967,000

[†]Revised. -- 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:				
September	--	--	299	5,370
October	--	--	5,590	149,000
November, Germany	--	--	5,850	177,000
Year to date	16	25,800	107,000	3,060,000

-- Zero.

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

Source: U.S. Census Bureau.