

# Mineral Industry Surveys

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## VANADIUM IN MAY 2009

Reported domestic consumption of vanadium in May 2009 was slightly more than that of the previous month, and was about 13% less than that of May 2008, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 308 metric tons (t) at the beginning of 2009 and 251 t at the end of May.

According to Ryan's Notes (2009b), U.S. ferrovanadium (FeV) prices ranged from \$8.417 to \$8.700 per pound of vanadium content in May, as compared with \$8.456 to \$8.925 in April. European FeV prices ranged from \$18.778 to \$19.528 per kilogram in May, as compared with \$18.569 to \$19.500 in April. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices ranged from \$3.956 to \$4.300 per pound in May, as compared with \$6.656 to \$4.156 in April.

Canadian Largo Resources Ltd. announced that it may have gained access to one of the world's largest known vanadium deposits outside of China, after it signed a 20-year lease agreement with Brazil's Companhia Baiana de Pesquisa Mineral. The leased property is located at Campo Alegre de

Lourdes in northeast Brazil, which also contains iron ore and titanium. Under the terms of the deal, Largo was expected to take a 100% stake in the property following an initial payment of approximately \$250,000, payable in 5 installments over 10 months (Metal-Pages Ltd., 2009).

Xstrata Alloys Ltd. (South Africa) announced that its FeV production fell 31% to 731 t in the first quarter of 2009 compared with 1,057 t in the first quarter of 2008. Xstrata's V<sub>2</sub>O<sub>5</sub> production decreased by 22% to 3,540 t compared with 4,520 t in the first quarter of 2008 (Ryan's Notes, 2009a).

### References Cited

- Metal-Pages Ltd., 2009, Largo hails new Brazil vanadium site deal: Metal-Pages Ltd., May 21. (Accessed July 29, 2009, via <http://www.metalpages.com/news/>)
- Ryan's Notes, 2009a, Ferroalloy notes: Ryan's Notes, v. 15, no. 19, May 11, p. 6.
- Ryan's Notes, 2009b, [untitled]: Ryan's Notes, v. 15, no. 22, June 1, p. 10.

TABLE 1  
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM<sup>1</sup>

(Kilograms, contained vanadium)

	2008		2009					
	Consumption	Stocks	April		May		January-May	
			Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium <sup>2</sup>	4,030,000	231,000	323,000	210,000	334,000	204,000	1,650,000	204,000
Vanadium-aluminum alloy	W	W	W	W	W	W	W	W
Other <sup>3</sup>	817,000	76,400	65,700	50,700	59,700	46,900	302,000	46,900
Total	4,850,000	308,000	388,000	261,000	393,000	251,000	1,950,000	251,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

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

<sup>2</sup>Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

<sup>3</sup>Includes 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 USE<sup>1</sup>

(Kilograms, contained vanadium)

	2008	2009		
		April	May	January-May
Steel:				
Carbon	760,000	47,000	53,800	243,000
High-strength low-alloy	1,540,000	128,000	130,000	644,000
Stainless and heat-resisting	116,000	5,110	5,110	25,500
Full alloy	2,000,000	152,000	155,000	789,000
Tool	151,000	34,700	34,700	174,000
Total steel	4,570,000	368,000	379,000	1,870,000
Superalloys	2,490	216	141	1,110
Miscellaneous and unspecified <sup>2</sup>	275,000	20,600	14,500	76,000
Total consumption	4,850,000	388,000	393,000	1,950,000

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

<sup>2</sup>Includes 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 SCRAP<sup>1</sup>

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
2008	1,110,000	\$2,110,000	3,620	\$198,000
2009:				
March	12,000	46,600	93	19,400
April:				
Germany	--	--	1,750	136,000
Netherlands	12,200	61,100	--	--
Total	12,200	61,100	1,750	136,000
Year to date	248,000	840,000	2,190	287,000
Exports:				
2008	21,900,000	76,200,000	57,100	3,740,000
2009:				
March	549,000	2,760,000	--	--
April:				
Brazil	394	7,810	--	--
Canada	75,900	169,000	--	--
Guyana	8,180	50,200	--	--
India	649	8,440	--	--
Japan	--	--	6,550	231,000
Mexico	425,000	921,000	--	--
Total	510,000	1,160,000	6,550	231,000
Year to date	3,650,000	9,670,000	20,900	919,000

-- Zero.

<sup>1</sup>Data 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 VANADIUM<sup>1</sup>

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) <sup>2</sup>		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
2008	2,800,000	\$159,000,000	3,700,000	\$115,000,000	144,000	\$4,320,000
2009:						
March	7,370	337,000	131,000	1,680,000	--	--
April:						
Austria	--	--	8,310	144,000	8,390	183,000
China	--	--	50,400	1,180,000	--	--
Korea, Republic of	9,000	286,000	--	--	--	--
South Africa	--	--	119,000	1,330,000	--	--
Total	9,000	286,000	178,000	2,660,000	8,390	183,000
Year to date	131,000	5,280,000	533,000	8,580,000	8,390	183,000
Exports:						
2008	281,000	12,600,000	249,000	5,650,000	1,040,000	11,300,000
2009:						
March	42,800	982,000	83,200	440,000	53,100	472,000
April:						
Argentina	--	--	200	9,700	--	--
Brazil	--	--	16,600	169,000	--	--
Canada	2,980	60,600	--	--	728	6,480
China	8,160	295,000	--	--	--	--
Korea, Republic of	14,300	274,000	19,200	165,000	--	--
Mexico	821	16,300	596	10,400	--	--
Saudi Arabia	--	--	540	10,100	--	--
Total	26,300	646,000	37,200	365,000	728	6,480
Year to date	189,000	4,590,000	165,000	1,610,000	103,000	913,000

-- Zero.

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

<sup>2</sup>May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG<sup>1</sup>

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)	
	Quantity	Value	Quantity	Value
2008	1,040,000	\$18,000,000	601,000	\$795,000
2009:				
March	14,400	57,600	42,700	107,000
April:				
Canada	--	--	64,100	125,000
Mexico	63,600	945,000	--	--
Total	63,600	945,000	64,100	125,000
Year to date	328,000	5,210,000	178,000	308,000

-- Zero.

<sup>1</sup>Data 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 CHEMICALS<sup>1</sup>

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
2008	2,160	\$119,000	187,000	\$4,230,000
2009:				
March	5	3,700	22,100	320,000
April:				
China	1,950	18,700	--	--
Germany	--	--	260	19,500
South Africa	--	--	14,800	204,000
Total	1,950	18,700	15,100	224,000
Year to date	1,950	22,400	37,300	571,000

-- Zero.

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

Source: U.S. Census Bureau.