

Mineral Industry Surveys

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VANADIUM IN MAY 2011

Reported domestic consumption of vanadium in May 2011 was slightly less than that of the previous month and was slightly more than that of May 2010, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 204 metric tons (t) at the beginning of 2011 and 188 t at the end of May.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$15.144 to \$15.511 per pound of vanadium content in May, as compared with \$14.867 to \$15.289 in April. European FeV prices ranged from \$29.889 to \$30.500 per kilogram in May, as compared with \$30.500 to \$31.500 in April. Vanadium pentoxide (V_2O_5) prices ranged from \$6.500 to \$7.000 per pound in May, as compared with \$6.556 to \$7.056 in April.

Evrax Highveld Steel and Vanadium Ltd. (Emalahleni, Mpumalanga, South Africa) announced a 20% increase in its vanadium slag production to 16,417 t (containing 2,221 t of V in

the form of V_2O_5) in the first quarter of 2011 compared with 13,691 t (containing 1,902 t of V in the form of V_2O_5) of production in the first quarter of 2010. Highveld began an upgrade to one of its furnaces in March and announced that it had made adequate provisions to ensure sufficient vanadium stock during the upgrade, which was expected to be finished by September. The company was converting the furnace to open slag bath technology that was expected to reduce dependence on metallurgical coal, reduce electricity use, and improve vanadium recovery (Evrax Highveld Steel and Vanadium Ltd., 2011, p. 2).

Reference Cited

Evrax Highveld Steel and Vanadium Ltd., 2011, Group unaudited results for the three months ended 31 March 2011: Emalahleni, Mpumalanga, South Africa, Evrax Highveld Steel and Vanadium Ltd., March 31, 13 p. (Accessed August 1, 2011, at http://www.evraxhighveld.co.za/sens/Evrax_Highveld_March_Results.pdf)

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

(Kilograms, contained vanadium)

	2010 ^p		2011				Stocks, end of period	
	Consumption	Stocks	April		May			January–May
			Consumption	Stocks	Consumption	Stocks	Consumption	
Ferrovandium ²	4,210,000 ^r	187,000 ^r	347,000 ^r	136,000 ^r	339,000	131,000	1,700,000	131,000
Vanadium-aluminum alloy	W	W	(3)	52,500 ^r	(3)	57,300	(3)	57,300
Other ⁴	815,000 ^r	61,600 ^r	(3)	(5)	(3)	(5)	(3)	(5)
Total	5,030,000 ^r	248,000 ^r	415,000 ^r	188,000 ^r	402,000	188,000	2,050,000	188,000

^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.

³Withheld to avoid disclosing company proprietary data; included in "Total."

⁴Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

⁵Withheld to avoid disclosing company proprietary data; included in "Vanadium-aluminum alloy."

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE¹

(Kilograms, contained vanadium)

	2010 ^P	2011		
		April	May	January–May
Steel:				
Carbon	843,000 ^r	56,400	56,500	289,000
High-strength low-alloy	1,530,000	W	W	W
Stainless and heat-resisting	120,000	5,120 ^r	5,110	25,700
Full alloy	2,030,000 ^r	180,000	171,000	863,000
Tool	246,000 ^r	W	W	W
Total steel	4,770,000 ^r	241,000	232,000	1,180,000
Superalloys	9,230 ^r	W	W	8,550
Miscellaneous and unspecified ²	252,000 ^r	W	W	W
Total consumption	5,030,000 ^r	415,000 ^r	402,000	2,050,000

^PPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total consumption."

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:				
2010	9,200,000	\$20,200,000	9,660	\$434,000
2011:				
March	16,000	87,800	22,100	680,000
April:				
China	4,000	23,300	--	--
Germany	--	--	478	94,900
Total	4,000	23,300	478	94,900
January–April	1,230,000	3,120,000	26,400	1,290,000
Exports:				
2010	11,900,000	33,300,000	21,200	671,000
2011:				
March	530,000	2,470,000	2,160	83,200
April:				
Canada	14,600	50,400	366	12,500
Hong Kong	255	7,500	--	--
Japan	11,400	335,000	5,430	149,000
Korea, Republic of	--	--	616	52,800
Malaysia	398	5,180	--	--
Mexico	603,000	2,330,000	--	--
Turkey	280	3,780	--	--
Total	629,000	2,730,000	6,410	215,000
January–April	2,960,000	10,800,000	17,400	663,000

-- 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:						
2010	1,340,000	\$41,100,000	4,000,000	\$53,700,000	167,000	\$3,330,000
2011:						
March	101,000	3,000,000	469,000	6,520,000	48,500	897,000
April:						
Austria	31,500	990,000	--	--	8,400	242,000
Canada	71,800	2,290,000	5,880	48,200	--	--
China	--	--	23,800	508,000	--	--
Czech Republic	32,000	850,000	--	--	--	--
Germany	363	20,000	--	--	--	--
Korea, Republic of	8,140	278,000	--	--	--	--
Russia	--	--	357,000	4,420,000	--	--
South Africa	--	--	30,600	866,000	80,200	1,380,000
Taiwan	--	--	19,200	415,000	--	--
Total	144,000	4,430,000	436,000	6,260,000	88,600	1,620,000
January–April	423,000	11,800,000	1,440,000	19,800,000	234,000	4,270,000
Exports:						
2010	882,000	18,100,000	140,000	2,140,000	1,100,000	10,600,000
2011:						
March	28,400	640,000	18,400	262,000	--	--
April:						
Canada	17,900	372,000	--	--	--	--
Germany	--	--	--	--	3,370	30,000
India	18,200	277,000	--	--	--	--
Korea, Republic of	2,180	91,800	--	--	--	--
Mexico	--	--	396	11,100	436	3,880
Netherlands	--	--	5,000	83,800	33,700	300,000
Spain	--	--	8,700	134,000	--	--
Trinidad and Tobago	--	--	1,090	24,000	--	--
Total	38,300	741,000	15,200	253,000	37,500	334,000
January–April	196,000	3,900,000	51,700	777,000	60,100	584,000

-- 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, unless otherwise specified)

	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 (gross weight)	Value
	2010	521,000	\$5,570,000	490,000	\$1,370,000	62,800,000
2011:						
March	55,900	34,700	--	--	19,300,000	849,000
April:						
Belgium	21,900	93,300	--	--	--	--
Canada	81,100	55,300	--	--	34,700	15,200
Germany	--	--	--	--	48,500	12,400
Total	103,000	149,000	--	--	83,300	27,600
January–April	342,000	818,000	50,400	176,000	19,600,000	937,000

-- 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
2010	48,200	\$608,000	158,000	\$4,050,000
2011:				
March	7,210	83,300	446	147,000
April:				
China	1,540	20,100	--	--
Germany	--	--	6,830	239,000
Total	1,540	20,100	6,830	239,000
January–April	35,400	649,000	13,100	529,000

-- Zero.

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

Source: U.S. Census Bureau.