

# Mineral Industry Surveys

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## VANADIUM IN JUNE 2011

Reported domestic consumption of vanadium in June 2011 was slightly more than that of the previous month, and was slightly more than that of June 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 170 t at the end of June.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$15.688 to \$16.000 per pound of vanadium content in June, as compared with \$15.144 to \$15.511 in May. European FeV prices ranged from \$29.188 to \$29.875 per kilogram in June, as compared with \$29.889 to \$30.500 in May. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices ranged from \$6.500 to \$7.000 per pound in both May and June.

Atlantic Ltd. (Perth, Western Australia, Australia) announced that its Windimurra vanadium project, located 600 kilometers north of Perth, remained on track to begin production in the third quarter of 2011. The construction costs were expected to remain in budget. The company also announced that the project's vanadium output forecast was increased by 11% to 6,300 tons of contained vanadium per year (Atlantic Ltd., 2011).

### Reference Cited

Atlantic Ltd., 2011, Quarterly report: Perth, Western Australia, Australia, Atlantic Ltd., July 11. (Accessed August 9, 2011, at <http://atlanticltd.com.au/upload/documents/InvestorRelations/quarterly/110711QuarterlyActivitiesReport.pdf>.)

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

(Kilograms, contained vanadium)

	2010 <sup>p</sup>		2011					
			May		June		January–June	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks, end of period
Ferrovandium <sup>2</sup>	4,210,000	187,000	339,000	131,000	340,000	116,000	2,040,000	116,000
Vanadium-aluminum alloy	W	W	(3)	57,300	(3)	53,800	(3)	53,800
Other <sup>4</sup>	815,000	61,600	(3)	(5)	(3)	(5)	(3)	(5)
Total	5,030,000	248,000	402,000	188,000	413,000	170,000	2,460,000	170,000

<sup>p</sup>Preliminary. 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>Withheld to avoid disclosing company proprietary data; included in "Total."

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

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

TABLE 2  
U.S. CONSUMPTION OF VANADIUM, BY END USE<sup>1</sup>

(Kilograms, contained vanadium)

	2010 <sup>p</sup>	2011		
		May	June	January–June
Steel:				
Carbon	843,000	56,500	59,800	349,000
High-strength low-alloy	1,530,000	W	W	W
Stainless and heat-resisting	120,000	5,110	5,110	30,800
Full alloy	2,030,000	171,000	171,000	1,030,000
Tool	246,000	W	W	W
Total steel	4,770,000	232,000	236,000	1,410,000
Superalloys	9,230	W	423	8,970
Miscellaneous and unspecified <sup>2</sup>	252,000	W	W	W
Total consumption	5,030,000	402,000	413,000	2,460,000

<sup>p</sup>Preliminary. W Withheld to avoid disclosing company proprietary data; included in "Total consumption."

<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
<b>Imports for consumption:</b>				
2010	9,200,000	\$20,200,000	9,660	\$434,000
<b>2011:</b>				
April	4,000	23,300	478	94,900
<b>May:</b>				
China	10,000	60,900	--	--
United Kingdom	14,100	75,900	--	--
Total	24,100	137,000	--	--
January–May	1,260,000	3,260,000	26,400	1,290,000
<b>Exports:</b>				
2010	11,900,000	33,300,000	21,200	671,000
<b>2011:</b>				
April	629,000	2,730,000	6,410	215,000
<b>May:</b>				
Canada	27,900	74,800	2,130	71,800
Chile	198	4,440	--	--
China	1,230	7,080	--	--
Colombia	--	--	3,880	86,200
India	17,700	185,000	--	--
Israel	1,540	20,000	--	--
Japan	--	--	5,400	146,000
Korea, Republic of	--	--	248	14,600
Mexico	370,000	1,510,000	--	--
Singapore	249	3,240	--	--
Total	419,000	1,800,000	11,700	319,000
January–May	3,370,000	12,600,000	29,100	982,000

-- 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
<b>Imports for consumption:</b>						
2010	1,340,000	\$41,100,000	4,000,000	\$53,700,000	167,000	\$3,330,000
2011:						
April	144,000	4,430,000	436,000	6,260,000	88,600	1,620,000
May:						
Austria	15,600	511,000	--	--	16,800	452,000
Canada	31,800	1,100,000	--	--	--	--
China	--	--	246,000	3,760,000	--	--
Czech Republic	32,200	851,000	--	--	--	--
India	50	2,400	--	--	--	--
South Africa	--	--	30,700	855,000	187,000	3,420,000
Taiwan	--	--	120	201,000	--	--
Total	79,600	2,460,000	277,000	4,810,000	204,000	3,870,000
January–May	503,000	14,300,000	1,710,000	24,600,000	438,000	8,130,000
<b>Exports:</b>						
2010	882,000	18,100,000	140,000	2,140,000	1,100,000	10,600,000
2011:						
April	38,300	741,000	15,200	253,000	37,500	334,000
May:						
Brazil	18,000	269,000	18,100	258,000	6,230	55,400
Canada	22,400	543,000	--	--	--	--
Colombia	814	20,300	--	--	--	--
Germany	--	--	252	2,850	3,370	30,000
Korea, Republic of	2,180	93,200	--	--	--	--
Mexico	--	--	396	11,100	--	--
Netherlands	--	--	--	--	20,800	185,000
Saudi Arabia	--	--	1,160	22,000	--	--
Total	43,400	926,000	20,000	294,000	30,400	270,000
January–May	239,000	4,830,000	71,700	1,070,000	90,400	854,000

-- 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, 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	\$3,710,000
2011:						
April	103,000	149,000	--	--	83,300	27,600
May:						
Canada	63,200	59,000	--	--	7,400,000	259,000
Germany	--	--	12,000	92,700	--	--
Total	63,200	59,000	12,000	92,700	7,400,000	259,000
January–May	405,000	877,000	62,400	269,000	27,000,000	1,200,000

-- 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
2010	48,200	\$608,000	158,000	\$4,050,000
2011:				
April	1,540	20,100	6,830	239,000
May:				
Austria	--	--	2,000	29,000
Japan	50	3,090	--	--
South Africa	--	--	22,300	383,000
Total	50	3,090	24,300	412,000
January–May	35,400	652,000	37,300	941,000

-- 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.