

Mineral Industry Surveys

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VANADIUM IN NOVEMBER 2010

Reported domestic consumption of vanadium in November 2010 was about 6% more than that of the previous month, and was about 12% more than that of November 2009, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 278 metric tons (t) at the beginning of 2010 and 203 t at the end of November.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$13.188 to \$13.863 per pound of vanadium content in November, as compared with \$13.889 to \$14.389 in October. European FeV prices ranged from \$29.263 to \$29.913 per kilogram in November, as compared with \$29.500 to \$30.500 in October. Vanadium pentoxide (V₂O₅) prices ranged from \$6.200 to \$6.500 per pound in both October and November.

Denison Mines Corp. (Toronto, Ontario, Canada) announced third quarter vanadium production of 474 t of V₂O₅. The company announced a change in its production schedule for the fourth quarter to allow for toll milling of a third party's ore during November. Total 2010 vanadium production was expected to decline to 1,090 t V₂O₅ from the previous estimate of 1,270 t V₂O₅ (Denison Mines Corp., 2010).

Reference Cited

Denison Mines Corp., 2010, Denison Mines Corp. reports third quarter 2010 results, Denison Mines Corp., November 4. (Accessed February 3, 2011, at http://www.denisonmines.com/s/SiteResources/data/MediaArchive/pdfs/press_releases/2010/nov4-10pr.pdf.)

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

(Kilograms, contained vanadium)

	2009		2010					
	Consumption	Stocks	October		November		January-November	
			Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	4,030,000	227,000	350,000	159,000	361,000	157,000	3,820,000	XX
Vanadium-aluminum alloy	W	W	(3)	(3)	(3)	(3)	(3)	XX
Other ⁴	694,000	51,700	(3)	(3)	(3)	(3)	(3)	XX
Total	4,720,000	278,000	414,000	205,000	437,000	203,000	4,520,000	XX

W Withheld to avoid disclosing company proprietary data; included with "Other." XX Not applicable.

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.

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

(Kilograms, contained vanadium)

	2009	2010		
		October	November	January-November
Steel:				
Carbon	610,000	55,300	70,000	615,000
High-strength low-alloy	1,540,000	W	W	W
Stainless and heat-resisting	119,000	5,110	5,110	115,000
Full alloy	1,880,000	172,000	169,000	1,800,000
Tool	417,000	W	W	W
Total steel	4,570,000	233,000 [†]	244,000	2,530,000
Superalloys	5,410	362	454	4,970
Miscellaneous and unspecified ²	151,000	W	W	W
Total consumption	4,720,000	414,000	437,000	4,520,000

[†]Revised. 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:				
2009	282,000	\$979,000	21,700	\$940,000
2010:				
September	1,220,000	2,670,000	--	--
October:				
China	--	--	2,400	50,500
Mexico	1,890,000	4,180,000	--	--
United Kingdom	15,400	92,300	--	--
Total	1,900,000	4,270,000	2,400	50,500
Year to date	6,170,000	13,700,000	9,660	434,000
Exports:				
2009	11,200,000	27,800,000	22,700	1,040,000
2010:				
September	919,000	2,590,000	--	--
October:				
Canada	663,000	1,680,000	--	--
France	319	4,150	--	--
Germany	251	3,260	--	--
Israel	539	10,000	--	--
Japan	--	--	3,000	165,000
Mexico	247,000	743,000	--	--
Taiwan	18,100	55,500	--	--
Total	930,000	2,500,000	3,000	165,000
Year to date	9,860,000	27,200,000	6,190	267,000

-- 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:						
2009	353,000	\$12,600,000	1,120,000	\$16,500,000	25,200	\$551,000
2010:						
September	104,000	3,000,000	404,000	5,660,000	35,100	718,000
October:						
Austria	15,600	470,000	--	--	--	--
Canada	39,400	1,320,000	--	--	--	--
Korea, Republic of	29,500	818,000	--	--	--	--
Russia	--	--	227,000	2,470,000	--	--
South Africa	--	--	88,600	1,790,000	--	--
Total	84,400	2,610,000	315,000	4,260,000	--	--
Year to date	1,190,000	36,700,000	3,460,000	46,700,000	51,800	1,230,000
Exports:						
2009	971,000	15,000,000	401,000	4,970,000	506,000	5,270,000
2010:						
September	105,000	2,340,000	9,000	149,000	147,000	1,310,000
October:						
Austria	213	5,330	--	--	--	--
Canada	46,600	1,130,000	--	--	--	--
Germany	--	--	--	--	2,250	20,000
India	10,000	142,000	--	--	--	--
Mexico	--	--	--	--	34,400	457,000
Spain	--	--	8,700	142,000	--	--
Total	56,800	1,270,000	8,700	142,000	36,600	477,000
Year to date	715,000	14,500,000	83,200	1,410,000	974,000	9,510,000

-- 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
2009	791,000	\$12,300,000	615,000	\$1,260,000	80,500,000	\$2,610,000
2010:						
September	69,300	362,000	32,300	44,500	214,000	110,000
October:						
Canada	--	--	47,000	98,500	19,200,000	501,000
Germany	--	--	--	--	64,900	8,360
Saudi Arabia	6,090	31,200	--	--	--	--
Total	6,090	31,200	47,000	98,500	19,200,000	510,000
Year to date	457,000	5,520,000	409,000	1,080,000	44,600,000	2,970,000

-- 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
2009	16,500	\$182,000	214,000	\$3,390,000
2010:				
September	4,780	46,000	6,820	232,000
October				
China	4,780	46,000	--	--
Germany	600	8,860	6,640	226,000
Total	5,380	54,900	6,640	226,000
Year to date	34,000	442,000	127,000	3,190,000

-- Zero.

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

Source: U.S. Census Bureau.