

# Mineral Industry Surveys

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## VANADIUM IN JANUARY 2010

Reported domestic consumption of vanadium in January 2010 was slightly less than that of the previous month, and was slightly less than that of January 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 282 t at the end of January.

According to Ryan's Notes (2010), U.S. ferrovanadium (FeV) prices ranged from \$11.450 to \$11.875 per pound of vanadium content in January 2010, as compared with \$10.769 to \$11.094 in December 2009. European FeV prices ranged from \$26.688 to \$27.688 per kilogram in January, as compared with \$21.063 to \$22.063 in December. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices

ranged from \$5.531 to \$5.938 per pound in January, as compared with \$5.344 to \$5.594 in December.

China's Panzhihua New Steel and Vanadium Co., Ltd. (a subsidiary of Panzhihua Iron and Steel Group) announced that it expected losses of approximately \$205 million in 2009. The company, based in southwest China's Sichuan Province, which was hit by a massive earthquake on May 12, 2008, attributed the loss to post-quake reconstruction as well as the global economic downturn (China Daily, 2010).

### Reference Cited

China Daily, 2010, Vanadium steel maker forecasts \$205m loss in 2009: China Daily, January 29. (Accessed June 29, 2010, via [www.chinadaily.com.cn/](http://www.chinadaily.com.cn/))

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

(Kilograms, contained vanadium)

	2008		2009				2010	
	Consumption	Stocks	December		January-December		January	
			Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium <sup>2</sup>	4,030,000	231,000	335,000	227,000	4,030,000	XX	335,000	224,000
Vanadium-aluminum alloy	W	W	W	W	W	XX	(3)	W
Other <sup>4</sup>	817,000	76,400	53,900 <sup>r</sup>	51,700 <sup>r</sup>	694,000 <sup>r</sup>	XX	(3)	57,500
Total	4,850,000	308,000	389,000	278,000 <sup>r</sup>	4,720,000	XX	389,000	282,000

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

<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, and other specialty chemicals.

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

(Kilograms, contained vanadium)

	2008	2009		2010
		December	January-December	January
Steel:				
Carbon	760,000	54,800	610,000	53,200
High-strength low-alloy	1,540,000	128,000	1,540,000	W
Stainless and heat-resisting	116,000	5,110	119,000	5,110
Full alloy	2,000,000	157,000	1,880,000	159,000
Tool	151,000	34,700	417,000	W
Total steel	4,570,000	380,000	4,570,000	217,000
Superalloys	2,480 <sup>r</sup>	845 <sup>r</sup>	5,440 <sup>r</sup>	151
Miscellaneous and unspecified <sup>2</sup>	275,000	8,640	151,000	W
Total consumption	4,850,000	389,000	4,720,000	389,000

<sup>r</sup>Revised. 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 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	618,000	\$2,760,000	4,600	\$409,000
2009:				
November	10,800	43,600	508	99,700
December, Germany	--	--	18,100	479,000
Year to date	282,000	979,000	21,700	940,000
Exports:				
2008	21,900,000	76,200,000	57,100	3,740,000
2009:				
November	783,000	1,820,000	--	--
December:				
Belgium	16,300	475,000	--	--
Canada	206,000	461,000	--	--
Germany	629	4,250	--	--
Ireland	5,170	50,300	--	--
Israel	555	10,000	--	--
Japan	3,850	99,300	--	--
Mexico	610,000	1,400,000	--	--
Philippines	292	8,580	--	--
Saudi Arabia	350	9,550	--	--
Spain	291	3,780	--	--
Total	844,000	2,520,000	--	--
Year to date	11,200,000	27,800,000	22,700	1,040,000

-- 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>						
2008	2,800,000	\$158,000,000	3,700,000	\$115,000,000	144,000	\$4,320,000
<b>2009:</b>						
November	323,000	11,900,000	1,050,000	15,400,000	25,200	551,000
<b>December:</b>						
Canada	17,500	467,000	--	--	--	--
Germany	357	22,100	--	--	--	--
India	276	17,900	--	--	--	--
Korea, Republic of	11,400	232,000	--	--	--	--
Russia	--	--	56,800	687,000	--	--
South Africa	--	--	20,400	441,000	--	--
Total	29,500	739,000	77,200	1,130,000	--	--
Year to date	353,000	12,600,000	1,120,000	16,500,000	25,200	551,000
<b>Exports:</b>						
2008	452,000	12,600,000	249,000	5,650,000	1,040,000	11,300,000
<b>2009:</b>						
November	24,900	504,000	37,800	609,000	94,400	896,000
<b>December:</b>						
Argentina	--	--	--	--	1,200	8,380
Brazil	--	--	--	--	7,130	63,400
Canada	17,600	333,000	--	--	24,700	220,000
Japan	--	--	--	--	3,790	50,600
Mexico	12,000	247,000	--	--	--	--
Netherlands	--	--	17,000	304,000	7,420	66,100
Trinidad and Tobago	--	--	3,540	62,300	--	--
Total	29,600	580,000	20,500	366,000	44,300	408,000
Year to date	971,000	15,000,000	401,000	4,970,000	506,000	5,270,000

-- 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)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity gross weight	Value
	2008	1,040,000	\$18,000,000	601,000	\$795,000	27,700,000
2009:						
November	12,200	57,600	52,000	118,000	90,800	33,600
December:						
Canada	--	--	19,600	59,300	39,300	17,300
Germany	--	--	20,600	125,000	15,500	4,910
Mexico	50,000	603,000	--	--	13,800	4,050
Total	50,000	603,000	40,200	184,000	68,600	26,300
Year to date	791,000	12,300,000	615,000	1,260,000	80,500,000	2,610,000

-- 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:				
November	--	--	50,500	856,000
December:				
China	4,780	46,000	--	--
Germany	--	--	6,660	242,000
South Africa	--	--	11,100	185,000
Total	4,780	46,000	17,800	428,000
Year to date	16,500	182,000	214,000	3,390,000

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

Source: U.S. Census Bureau.