

Mineral Industry Surveys

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VANADIUM IN DECEMBER 2015

Reported domestic consumption of vanadium in December 2015 was 6% more than that of the previous month and was slightly less than that of December 2014. Consumer stocks of vanadium, in all forms, were 165 metric tons (t) at yearend 2015 and 170 t at yearend 2014.

Ryan's Notes U.S. ferrovanadium (FeV) prices ranged from \$5.985 to \$6.385 per pound of vanadium content in December compared with \$6.400 to \$6.913 in November. European FeV prices ranged from \$13.040 to \$13.530 per kilogram in December compared with \$12.938 to \$13.938 in November.

Vanadium pentoxide (V_2O_5) prices ranged from \$2.550 to \$2.725 per pound in December compared with \$2.806 to \$3.056 in November.

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TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM¹
(Kilograms, contained vanadium)

	2014		2015					
	January–December		November		December		January–December ²	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ³	2,850,000	99,800	218,000	87,500	234,000	94,700	2,770,000	94,700
Vanadium-aluminum alloy and other forms ⁴	803,000	70,100	66,400	70,200	66,400	70,100	803,000	70,100
Total	3,650,000	170,000	285,000	158,000	301,000	165,000	3,570,000	165,000

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

²May include revisions to previously published data.

³Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

⁴Includes vanadium-aluminum alloy, other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, and other specialty chemicals.

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

(Kilograms, contained vanadium)

	2014	2015		
	January– December	November	December	January– December ²
Steel:				
Carbon	532,000	W	W	W
Full alloy	1,470,000	118,000	118,000	1,430,000
High-strength low-alloy	W	W	W	W
Stainless and heat resisting	59,200	4,930	4,940	59,200
Tool	W	W	W	W
Total steel	2,060,000	123,000	178,000	3,260,000
Superalloys	2,140	W	W	2,290
Miscellaneous and unspecified ³	W	W	W	W
Total	3,650,000	285,000	301,000	3,570,000

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

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

²May include revisions to previously published data.

³Includes 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 ALLOYS AND VANADIUM
METAL, INCLUDING WASTE AND SCRAP¹

(Kilograms, gross weight)

	Aluminum-vanadium master alloy ²		Vanadium metal, including waste and scrap ³	
	Quantity	Value	Quantity	Value
Imports for consumption:				
2014	431,000	\$9,820,000	161,000	\$3,860,000
2015:				
November	--	--	351	13,900
December:				
China	--	--	9,050	115,000
Germany	--	--	8,550	207,000
United Kingdom	1	4,820	--	--
Total	1	4,820	17,600	322,000
January–December ⁴	204,000	4,520,000	182,000	3,450,000
Exports:				
2014	443,000	12,400,000	31,900	1,150,000
2015:				
November	--	--	1,000	77,000
December:				
Belgium	9,140	141,000	--	--
Japan	5,920	112,000	--	--
Total	15,100	253,000	--	--
January–December ⁴	229,000	6,440,000	5,200	354,000

-- Zero.

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

²Aluminum-vanadium master alloy consisting of 35% aluminum and 64.5% vanadium. Includes Harmonized Tariff Schedule (HTS) code 8112.99.2000.

³Vanadium metal, including waste and scrap (HTS code 8112.92.7000).

⁴May include revisions to previously published data.

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 ²		Vanadium pentoxide (anhydride) ^{3,4}		Other oxides and hydroxides of vanadium ⁵	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
2014	3,230,000	\$94,500,000	3,410,000	\$46,300,000	104,000	\$1,950,000
2015:						
November	203,000	5,210,000	151,000	1,380,000	--	--
December:						
Austria	38,000	259,000	--	--	--	--
Canada	19,200	268,000	--	--	--	--
China	--	--	10,000	108,000	--	--
Czech Republic	--	1,470,000	--	--	--	--
Germany	--	--	--	--	--	--
Korea	19,800	215,000	--	--	--	--
South Africa	--	--	120,000	830,000	--	--
Total	77,000	2,210,000	130,000	938,000	--	--
January–December	2,030,000	64,700,000	2,870,000	32,800,000	93,700	1,840,000
Exports:						
2014	352,000	7,500,000	201,000	2,910,000	350,000	4,800,000
2015:						
November	12,000	183,000	76,000	546,000	2,520	22,400
December:						
Canada	18,600	315,000	--	--	--	--
Colombia	776	6,020	--	--	--	--
Germany	--	--	--	--	5,990	87,100
Korea	1,900	57,200	--	--	--	--
Mexico	--	--	300	4,310	--	--
Netherlands	--	--	122,000	1,100,000	3,330	29,600
Trinidad & Tobago	--	--	3,270	162,000	11,400	84,500
Total	21,300	379,000	125,000	1,260,000	20,700	201,000
January–December	163,000	3,190,000	356,000	3,430,000	99,800	841,000

-- Zero.

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

²Includes HTS code 7202.92.0000.

³Includes HTS code 2825.30.0010.

⁴May include catalysts containing vanadium pentoxide.

⁵Includes HTS code 2825.30.0050.

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 ²		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity (gross weight)	Value
	2014	6,160,000	\$37,900,000	211,000,000
2015:				
November	956,000	2,510,000	112,000	240,000
December:				
Canada	315,000	560,000	17,600	9,700
Mexico	483,000	1,490,000	37,400	16,000
Russia	161,000	1,120,000	--	--
Total	959,000	3,170,000	55,000	25,700
January–December	9,440,000	36,700,000	87,600,000	4,600,000

-- Zero.

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

²Includes HTS code 2620.40.0030 and 2620.99.1000.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS¹

(Kilograms, contained vanadium)

	Sulfates ²		Vanadates ³	
	Quantity	Value	Quantity	Value
2014	18,600	\$228,000	197,000	\$4,090,000
2015:				
November	899	8,640	20,100	270,000
December:				
Austria	--	--	200	4,360
Japan	31	2,170	--	--
Netherlands	--	--	12,000	136,000
Sweden	--	--	2,610	19,700
Taiwan	--	--	12,300	108,000
United Kingdom	--	--	4,030	77,700
Total	31	2,170	31,200	346,000
January–December	12,600	142,000	173,000	2,330,000

-- Zero.

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

²Sulfates (HTS code 2833.29.3000).

³Vanadates (HTS code 2841.90.1000).

Source: U.S. Census Bureau.