

Mineral Industry Surveys

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VANADIUM IN OCTOBER 2019

Reported domestic consumption of vanadium in October 2019 was slightly less than that of the previous month and slightly less than that of October 2018. Consumer stocks of all forms of vanadium were 200 metric tons (t) at the end of October, an increase from 185 t at yearend 2018 (table 1).

Prices

According to CRU Group (2019), U.S. ferrovandium (FeV) prices ranged from \$13.220 to \$14.290 per pound of contained vanadium in October 2019, compared with \$14.550 to \$15.700 per pound in September 2019. In Europe, FeV prices ranged from \$24.765 to \$25.430 per kilogram of contained vanadium in October 2019, compared with \$30.275 to \$31.375 per kilogram in September 2019. In China, vanadium pentoxide (V₂O₅) prices have ranged from \$10.000 to \$10.500 per pound of contained vanadium, unchanged since June 2019 (fig. 1).

Reference Cited

CRU Group, 2019, Noble alloys and minor metals prices: CRU Group, December 2. (Accessed December 19, 2019, via <http://www.crugroup.com/>)

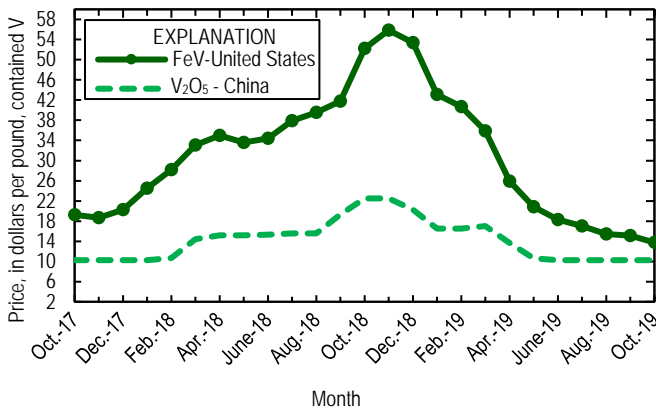


Figure 1. Average monthly prices for FeV and V₂O₅ from October 2017 through October 2019. Source: CRU Group.

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TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM^{p,1}

(Kilograms, contained vanadium)

	2019					
	September		October		January–October	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	220,000	152,000	218,000	162,000	2,200,000	162,000
Vanadium-aluminum alloy and other forms ³	21,000	37,600	21,000	37,600	210,000	37,600
Total	241,000	190,000	239,000	200,000	2,410,000	200,000

^pPreliminary.

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

²Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

³Includes 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)

	2019		
	September	October	January– October
Steel:			
Carbon	W	W	W
Full alloy	101,000	101,000	1,010,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,930	49,400
Tool	W	W	W
Total steel	106,000	106,000	1,060,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	241,000	239,000	2,410,000

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. Includes estimates.

²Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	HTS ² code	2019								
		September			October			January–October		
		Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	2,040,000	201,000	\$3,110,000	2,190,000	215,000	\$2,580,000	18,100,000	1,800,000	\$55,800,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	441,000	432,000	8,210,000	157,000	135,000	4,240,000	3,440,000	3,330,000	101,000,000
Vanadium oxides and hydroxides, other	2825.30.0050	1	1	3,650	13,100	9,070	748,000	142,000	91,300	6,410,000
Vanadium sulfates	2833.29.3000	--	--	--	36,400	34,600	259,000	43,400	39,000	301,000
Vanadates	2841.90.1000	1,980	1,120	153,000	18,300	12,900	330,000	111,000	68,100	3,160,000
Ferrovandium	7202.92.0000	244,000	170,000	8,320,000	202,000	116,000	7,930,000	3,000,000	2,010,000	152,000,000
Vanadium metal, including waste and scrap	8112.92.7000	8	7	3,900	--	--	--	57,200	44,300	3,970,000
Vanadium and articles thereof ³	8112.99.2000	27,000	18,400	1,230,000	20,300	13,400	770,000	257,000	173,000	14,600,000
Total		2,750,000	822,000	21,000,000	2,640,000	536,000	16,900,000	25,200,000	7,560,000	337,000,000

-- Zero.

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

²Harmonized Tariff Schedule of the United States.

³Aluminum-vanadium master alloy consisting of 35% aluminum and 64.5% vanadium.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, OTHER OXIDES AND HYDROXIDES OF VANADIUM,
AND VANADIUM PENTOXIDE (ANHYDRIDE)^{1,2}

(Kilograms, gross and contained weight)

Country or locality	HTS ³ code	2019					
		September		October		January–October	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Brazil		280,000	279,000	38,500	28,000	1,820,000	1,800,000
Germany		--	--	8,000	6,400	129,000	121,000
South Africa		98,700	93,200	110,000	101,000	1,270,000	1,240,000
Other [6 countries and (or) localities]		62,300 ^r	60,500 ^r	--	--	210,000	163,000
Total		441,000	432,000	157,000	135,000	3,440,000	3,330,000
Other oxides and hydroxides of vanadium,	2825.30.0050						
South Africa		--	--	13,100	9,070	142,000	91,300
Germany		1	1	--	--	1	1
Total		1	1	13,100	9,070	142,000	91,300
Ferrovandium	7202.92.0000						
Austria		10,000	7,960	33,000	26,300	649,000	481,000
Canada		42,200	33,300	19,100	7,800	1,090,000	836,000
Japan		30,200	18,300	30,000	15,400	380,000	197,000
Latvia		20,000	10,700	59,900	26,800	219,000	103,000
Russia		100,000	79,500	40,000	31,900	180,000	143,000
Ukraine		40,000	18,100	20,000	8,160	445,000	219,000
Other [4 countries and (or) localities]		2,000 ^r	1,610 ^r	--	--	43,000	31,400
Total		244,000	170,000	202,000	116,000	3,000,000	2,010,000
Exports:							
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Germany		--	--	NA	43,700	NA	49,200
India		--	--	NA	12,100	NA	98,300
Mexico		NA	50	NA	50	NA	100
Trinidad and Tobago		--	--	NA	10,000	NA	31,100
Other [4 countries and (or) localities]		NA	80,100 ^r	NA	--	NA	243,000
Total		XX	80,200	XX	65,800	XX	422,000
Other oxides and hydroxides of vanadium	2825.30.0050						
Canada		--	--	NA	1,400	NA	71,900
Germany		--	--	NA	46,600	NA	46,600
Netherlands		NA	112,000	NA	98,500	NA	413,000
Other [4 countries and (or) localities]		--	--	--	--	NA	58,500
Total		XX	112,000	XX	147,000	XX	591,000
Ferrovandium	7202.92.0000						
Colombia		916	687	916	687	14,000	10,500
Mexico		19,100	14,300	19,500	14,700	286,000	183,000
Other [4 countries and (or) localities]		552 ^r	414 ^r	--	--	87,600	65,200
Total		20,600	15,400	20,500	15,300	388,000	259,000

^rRevised. NA Not available. XX Not applicable. -- Zero.

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

²Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries and (or) localities in October.

³Harmonized Tariff Schedule of the United States.

⁴May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS AND EXPORTS OF ALUMINUM VANADIUM MASTER ALLOY, VANADIUM BEARING ASH AND RESIDUES,
VANADIUM SULFATES, VANADATES, VANADIUM METAL, AND U.S. IMPORTS OF SLAG^{1,2}

(Kilograms, gross and contained weight)

Country or locality	HTS ³ code	2019					
		September		October		January–October	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Slag, from the manufacture of iron and steel	2619.00.9000						
Canada		56,600,000	NA	20,800,000	NA	155,000,000	NA
Mexico		16,900	NA	16,900	NA	344,000	NA
Other [4 countries and (or) localities]		--	--	--	--	128,000	NA
Total		56,600,000	XX	20,800,000	XX	155,000,000	XX
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000						
Canada		2,010,000	197,000	2,190,000	215,000	17,300,000	1,700,000
Other [3 countries and (or) localities]		22,100 ^r	3,090 ^r	--	--	813,000	102,000
Total		2,040,000	201,000	2,190,000	215,000	18,100,000	1,800,000
Sulfates	2833.29.3000						
China		--	--	--	--	7,030	4,390
Finland		--	--	36,400	34,600	36,400	34,600
Total		--	--	36,400	34,600	43,400	39,000
Vanadates	2841.90.1000						
China		1,980	1,120	11,300	7,500	13,200	8,620
Germany		--	--	14	7	14,200	5,620
South Africa		--	--	7,000	5,390	23,300	16,200
Other [5 countries and (or) localities]		--	--	--	--	60,100	37,600
Total		1,980	1,120	18,300	12,900	111,000	68,100
Vanadium metal, including waste and scrap, and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		2,220	1,780	2,010	1,700	49,700	37,900
Mexico		--	--	105	105	2,230	1,800
Russia		20,000	13,400	18,200	11,600	208,000	137,000
Other [6 countries and (or) localities]		4,820 ^r	3,220 ^r	--	--	54,500	40,300
Total		27,000	18,400	20,300	13,400	315,000	217,000
Exports:							
Vanadium bearing ash and residues	2620.50.0030, 2620.99.1000						
Germany		291,000	NA	36,900	NA	1,220,000	NA
Other [2 countries and (or) localities]		--	--	--	--	832,000	NA
Total		291,000	XX	36,900	XX	2,050,000	XX
Vanadium metal, including waste and scrap, and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
France		292	NA	1,240	NA	9,890	NA
United Kingdom		669	NA	711	NA	3,270	NA
Other [11 countries and (or) localities]		13,500 ^r	NA	--	--	60,400	NA
Total		14,500	XX	1,950	XX	73,500	XX

^rRevised. NA Not available. XX Not applicable. -- Zero.

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

²Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries and (or) localities in October.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.