

Mineral Industry Surveys

For information, contact:

Désirée E. Polyak, Vanadium Commodity Specialist
 National Minerals Information Center
 U.S. Geological Survey
 989 National Center
 Reston, VA 20192
 Telephone: (703) 648-4909, Fax: (703) 648-7757
 Email: dpolyak@usgs.gov

Darlene V. Thompson (Data)
 Telephone: (703) 648-7797
 Fax: (703) 648-7975
 Email: dvthompson@usgs.gov

Internet: <https://www.usgs.gov/centers/nmic>

VANADIUM IN OCTOBER 2020

Reported domestic vanadium consumption in October 2020 was slightly less than consumption in September 2020, and 55% more than consumption in October 2019 (tables 1 and 2). However, it is important to note that monthly reported domestic vanadium consumption in 2020 was revised in order to include consumption data from an annually reported domestic vanadium consumer that was not included on a monthly basis in 2019.

Consumer stocks of all forms of vanadium were 179 metric tons (t) of contained vanadium at the end of October 2020, essentially unchanged compared with consumer stocks in September 2020 and a 7% decrease from 192 t at yearend 2019 (table 1).

Prices

According to CRU Group (2020), U.S. ferrovandium (FeV) prices ranged from \$9.750 to \$10.700 per pound of contained vanadium in October 2020, compared with \$9.672 to \$10.633 per pound in September 2020. In Europe, FeV prices ranged from \$24.067 to \$24.600 per kilogram of contained vanadium in October 2020, compared with \$24.711 to \$25.233 per kilogram in September 2020. In China, vanadium pentoxide (V₂O₅) prices have ranged from \$6.300 to \$6.500 per pound of contained vanadium since June 2020 (fig. 1).

Reference Cited

CRU Group, 2020, Noble alloys and minor metals prices: CRU Group, November 2. (Accessed December 16, 2020, via <http://www.crugroup.com/>.)

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/nmic/minerals-information-publication-list-services>.

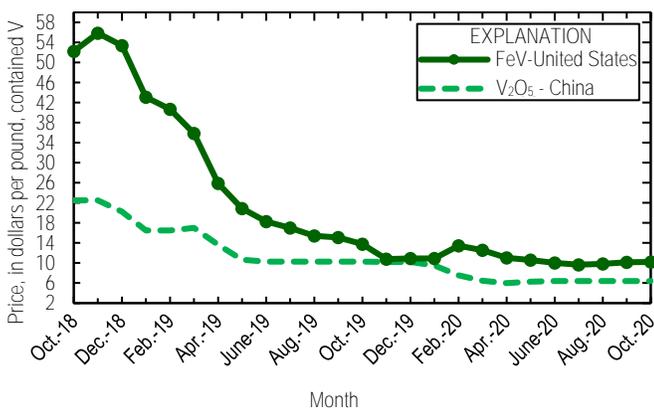


Figure 1. Average monthly prices for FeV and V₂O₅ from October 2018 through October 2020. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2020					
	September		October		January–October	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	350,000	140,000	350,000	139,000	3,460,000	139,000
Vanadium-aluminum alloy and other forms ³	23,500	40,000	19,900	40,100	215,000	40,100
Total	374,000	180,000	370,000	179,000	3,670,000	179,000

^eEstimated.

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 USE^{e,1}

(Kilograms, contained vanadium)

	2020		
	September	October	January– October
Steel:			
Carbon	W	W	W
Full alloy	97,900	97,800	999,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,640	4,530	48,500
Tool	W	W	W
Total steel	103,000	102,000	1,050,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	374,000	370,000	3,670,000

^eEstimated. 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	2020								
		September			October			January–October		
		Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)
Vanadium ores and concentrates	2615.90.6090	--	--	--	--	--	--	6,280	3,560	\$522,000
Vanadium bearing ash and residues	2620.40.0030,									
	2620.99.1000	(3)	(3)	\$144,000	26,300	7,950	\$239,000	387,000	60,000	6,920,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	81,700	77,200	1,200,000	50,600	50,400	720,000	2,230,000	1,540,000	34,800,000
Vanadium oxides and hydroxides, other	2825.30.0050	--	--	--	--	--	--	101,000	66,500	2,830,000
Vanadium sulfates	2833.29.3000	--	--	--	24,500	19,600	179,000	28,800	22,300	208,000
Vanadates	2841.90.1000	11,000	8,470	127,000	75	50	3,620	185,000	103,000	2,000,000
Ferrovandium	7202.92.0000	147,000	109,000	3,030,000	144,000	115,000	3,080,000	1,570,000	1,060,000	47,400,000
Vanadium metal, including waste and scrap	8112.92.7000	1	1	2,310	--	--	--	273	123	65,000
Vanadium and articles thereof ⁴	8112.99.2000	445	443	208,000	1,770	1,150	169,000	129,000	85,900	5,220,000
Total		240,000	195,000	4,710,000	247,000	194,000	4,390,000	4,640,000	2,940,000	100,000,000

-- Zero.

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

²Harmonized Tariff Schedule of the United States.

³Data suppressed according to U.S. Census Bureau; not included in "Total."

⁴Aluminum-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	2020					
		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		40,000	39,900	20,000	20,000	1,320,000	843,000
South Africa		11,000	11,000	30,600	30,400	561,000	388,000
Other [4 countries and (or) localities]		30,700 ^r	26,400 ^r	--	--	345,000	306,000
Total		81,700	77,200	50,600	50,400	2,230,000	1,540,000
Ferrovandium	7202.92.0000						
Austria		20,000	8,160	16,200	13,000	495,000	343,000
Canada		125,000	99,400	128,000	102,000	829,000	611,000
Other [5 countries and (or) localities]		2,000 ^r	1,610 ^r	--	--	247,000	108,000
Total		147,000	109,000	144,000	115,000	1,570,000	1,060,000
Exports:							
Vanadium ores and concentrates	2615.90.6090						
Cambodia		--	--	5,350	NA	23,000	NA
Lithuania		--	--	431	NA	431	NA
Vietnam		--	--	1,320	NA	1,320	NA
Other [4 countries and (or) localities]		--	--	--	--	36,200	NA
Total		--	--	7,100	XX	60,900	XX
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Mexico		--	--	NA	100	NA	500
Other [3 countries and (or) localities]		NA	4,740 ^r	--	--	NA	46,900
Total		XX	4,740	XX	100	XX	47,400
Ferrovandium	7202.92.0000						
Mexico		7,970	5,980	10,000	8,020	52,500	39,900
Other [11 countries and (or) localities]		30,000 ^r	22,500 ^r	--	--	131,000	99,100
Total		38,000	28,400	10,000	8,020	184,000	139,000

^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 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	2020					
		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		1,270,000	NA	1,110,000	NA	6,560,000	NA
Japan		--	--	318	NA	318	NA
Mexico		18,100	NA	33,600	NA	250,000	NA
Other, Finland		1,800 ^r	NA	--	--	21,200	NA
Total		1,290,000	XX	1,140,000	XX	6,830,000	XX
Vanadium bearing ash and residues, Belgium	2620.40.0030, 2620.99.1000	--	--	26,300	7,950	387,000	60,000
Vanadium sulfates	2833.29.3000						
Finland		--	--	24,500	19,600	24,500	19,600
Other [2 countries and (or) localities]		--	--	--	--	4,290	2,680
Total		--	--	24,500	19,600	28,800	22,300
Vanadates	2841.90.1000						
Japan		--	--	75	50	75	50
Other [9 countries and (or) localities]		11,000	8,470	--	--	185,000	103,000
Total		11,000	8,470	75	50	185,000	103,000
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Belgium		--	--	1,250	626	2,750	1,600
Germany		--	--	66	66	2,040	1,580
Mexico		--	--	453	453	840	840
Other [5 countries and (or) localities]		446 ^r	444 ^r	--	--	124,000	82,000
Total		446	444	1,770	1,150	130,000	86,000
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
Belgium		--	--	46,600	NA	46,600	NA
Germany		--	--	35,200	NA	87,200	NA
Italy		--	--	38,500	NA	204,000	NA
Other [4 countries and (or) localities]		191,000 ^r	NA	--	--	368,000	NA
Total		191,000	XX	120,000	XX	706,000	XX
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Spain		--	--	9	NA	49	NA
Other [11 countries and (or) localities]		464 ^r	NA	--	--	24,100	NA
Total		464	XX	9	XX	24,200	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 in October.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.