

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 JUNE 2021

Reported domestic vanadium consumption in June 2021 was slightly more compared with consumption in May 2021 (tables 1 and 2). It is important to note that monthly reported domestic vanadium consumption was revised in the second half of 2020 in order to include consumption data from a domestic vanadium consumer that reports on an annual basis. That data previously had not been included with monthly data.

Consumer stocks of all forms of vanadium were 201 metric tons (t) of contained vanadium at the end of June 2021, a 13% increase compared with consumer stocks at yearend 2020 (table 1).

Prices

According to CRU Group (2021), U.S. ferrovanadium (FeV) prices ranged from \$16.361 to \$17.139 per pound of contained vanadium in June 2021 compared with \$15.775 to \$16.300 per pound in May 2021. In Europe, FeV prices ranged from \$36.178 to \$36.856 per kilogram of contained vanadium in June 2021 compared with \$33.800 to \$34.500 per kilogram of contained vanadium in May 2021. In China, vanadium pentoxide (V_2O_5) prices ranged from \$7.733 to \$8.056 per pound of contained vanadium in June 2021 compared with \$7.400 to \$7.500 per pound of contained vanadium in May 2021 (fig. 1).

Reference Cited

CRU Group, 2021, Noble alloys and minor metals prices: CRU Group, August 2. (Accessed August 17, 2021, 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>.

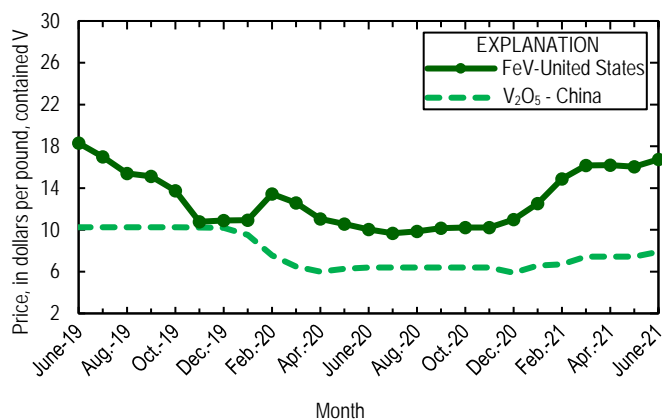


Figure 1. Average monthly prices for ferrovanadium (FeV) and vanadium pentoxide (V_2O_5) from June 2019 through June 2021. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2021					
	May		June		January–June	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	352,000 ^r	163,000 ^r	357,000	163,000	2,130,000	163,000
Vanadium-aluminum alloy and other forms ³	21,000 ^r	38,000 ^r	21,000	38,000	126,000	38,000
Total	373,000	201,000	378,000	201,000	2,250,000	201,000

^rRevised.

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)

	2021		
	May	June	January– June
Steel:			
Carbon	W	W	W
Full alloy	101,000 ^r	101,000	604,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930 ^r	4,930	29,600
Tool	W	W	W
Total steel	106,000 ^r	106,000	634,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	373,000	378,000	2,250,000

^rRevised. 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	2021								
		May			June			January–June		
		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	194	116	\$15,500	--	--	--	3,750	1,690	\$298,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(3)	(3)	700,000	(3)	(3)	612,000	236,000 ⁴	33,100 ⁴	3,510,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	341,000	226,000	6,320,000	125,000	102,000	2,370,000	1,320,000	1,060,000	22,900,000
Vanadium oxides and hydroxides, other	2825.30.0050	10,000	6,570	229,000	10,000	6,560	230,000	20,000	13,100	458,000
Vanadium chlorides	2827.39.1000	8,000	7,620	76,800	--	--	--	12,600	12,000	213,000
Vanadium sulfates	2833.29.3000	--	--	--	36,400	35,700	510,000	56,300	48,300	664,000
Vanadates	2841.90.1000	13,300	10,600	252,000	--	--	--	20,000	14,700	359,000
Hydrides and Nitrides of Vanadium	2850.00.2000	7,040	5,560	75,400	20,200	16,600	242,000	79,500	64,600	895,000
Ferrovandium	7202.92.0000	108,000	90,000	4,040,000	279,000	198,000	8,570,000	1,270,000	965,000	44,200,000
Vanadium metal, including waste and scrap	8112.92.7000	4	4	4,730	312	141	72,300	660	370	161,000
Vanadium and articles thereof ⁵	8112.99.2000	2,310	1,850	117,000	2,220	1,930	142,000	27,700	19,400	1,570,000
Total		491,000	348,000	11,800,000	473,000	361,000	12,700,000	3,040,000	2,230,000	75,300,000

-- 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 by the U.S. Census Bureau; not included in "Total."

⁴Data suppressed by the U.S. Census Bureau except for the months of February and April; not included in "Total."

⁵Aluminum-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	2021					
		May		June		January–June	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium ores and concentrates, Mexico	2615.90.6090	194	116	--	--	3,750	1,690
Vanadium pentoxide (anhydride): ⁴	2825.30.0010						
Brazil		80,000	79,700	40,000	39,800	400,000	398,000
Germany		11,500	6,550	10,000	5,710	43,300	25,900
Netherlands		--	--	10,000	9,950	10,000	9,950
South Africa		250,000	139,000	43,800	34,900	516,000	312,000
Taiwan		--	--	20,800	11,900	51,600	33,700
Other [2 countries and (or) localities]		--	--	--	--	300,000	282,000
Total		341,000	226,000	125,000	102,000	1,320,000	1,060,000
Other oxides and hydroxides of vanadium	2825.30.0050						
China		--	--	30	19	30	19
Germany		--	--	1	1	1	1
South Africa		10,000	6,570	10,000	6,540	20,000	13,100
Total		10,000	6,570	10,000	6,560	20,000	13,100
Ferrovanadium:	7202.92.0000						
Austria		2,000	1,600	76,900	55,000	366,000	272,000
Canada		106,000	88,400	127,000	98,900	526,000	418,000
Japan		--	--	40,000	16,300	40,000	16,300
Latvia		--	--	15,100	12,100	50,700	33,300
Russia		--	--	20,000	16,000	280,000	223,000
Other [2 countries and (or) localities]		--	--	--	--	2,960	2,390
Total		108,000	90,000	279,000	198,000	1,270,000	965,000
Exports:							
Vanadium ores and concentrates:	2615.90.6090						
Brazil		227	NA	--	--	227	NA
Mexico		9,810	NA	--	--	9,810	NA
Other [4 countries and (or) localities]		--	--	--	--	102,000	NA
Total		10,000	XX	--	--	112,000	XX
Vanadium pentoxide (anhydride): ⁴	2825.30.0010						
Australia		--	--	NA	39	NA	456
Brazil		--	--	NA	885	NA	885
Other [2 countries and (or) localities]		--	--	--	--	NA	6,760
Total		--	--	XX	924	XX	8,100
Other oxides and hydroxides of vanadium:	2825.30.0050						
Austria		--	--	NA	29,400	NA	51,300
Other [4 countries and (or) localities]		NA	3,020 ^r	--	--	NA	77,400
Total		XX	3,020	XX	29,400	XX	129,000
Ferrovanadium:	7202.92.0000						
Canada		--	--	7,870	5,900	33,700	25,300
Mexico		68	51	9,070	6,800	44,100	33,100
Other [3 countries and (or) localities]		--	--	--	--	4,930	3,580
Total		68	51	16,900	12,700	82,800	62,000

¹Revised. NA Not available. XX Not applicable. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries or localities in June.

⁴Harmonized Tariff Schedule of the United States.

⁵May 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	2021					
		May		June		January–June	
		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		2,780,000	NA	2,640,000	NA	10,200,000	NA
Finland		--	--	9,100	NA	9,100	NA
Mexico		67,100	NA	67,300	NA	296,000	NA
Other [2 countries and (or) localities]		--	--	--	--	16,500,000	NA
Total		2,850,000	XX	2,710,000	XX	27,000,000	XX
Sulfates	2833.29.3000						
China		--	--	--	--	2,100	1,350
Finland		--	--	36,400	35,700	54,200	46,900
Total		--	--	36,400	35,700	56,300	48,300
Vanadates:	2841.90.1000						
Austria		--	--	--	--	50	22
China		13,300	10,600	--	--	13,300	10,600
Germany		--	--	--	--	6,450	3,980
India		2	1	--	--	7	3
Japan		--	--	--	--	212	122
Total		13,300	10,600	--	--	20,000	14,700
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy:	8112.92.7000, 8112.99.2000						
China		--	--	3	2	3	2
Germany		10	8	1,750	1,290	3,840	2,960
Russia		--	--	779	778	20,800	14,000
Other [4 countries and (or) localities]		2,310 ^r	1,850 ^r	--	--	3,690	2,790
Total		2,320	1,850	2,530	2,070	28,300	19,800
Exports:							
Vanadium bearing ash and residues:	2620.50.0000, 2620.99.1000						
Belgium		50,800	NA	163,000	NA	441,000	NA
Germany		--	--	200,000	NA	200,000	NA
India		--	--	20,000	NA	20,000	NA
Mexico		17,500	NA	17,800	NA	43,400	NA
Other [2 countries and (or) localities]		--	--	--	--	50,300	NA
Total		68,400	XX	401,000	XX	755,000	XX
Hydrides and Nitrides, of vanadium	2850.00.2000						
Germany		--	--	15,800	13,200	52,700	43,400
Ireland		2,990	2,370	2	2	7,090	5,610
South Africa		2,780	2,190	3,820	3,020	16,900	13,400
Sweden		320	253	520	411	1,880	1,490
Other [3 countries and (or) localities]		951 ^r	751 ^r	--	--	979	773
Total		7,040	5,560	20,200	16,600	79,500	64,600
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy:	8112.92.7000, 8112.99.2000						
China		155	NA	363	NA	518	NA
Germany		--	--	332	NA	1,950	NA
Other [6 countries and (or) localities]		26,400 ^r	NA	--	--	45,300	NA
Total		26,500	XX	695	XX	47,800	XX

¹Revised. 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 June.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.