

Mineral Industry Surveys

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VANADIUM IN FEBRUARY 2021

Reported domestic vanadium consumption in February 2021 was essentially unchanged compared with consumption in January 2021 and 54% more than consumption in February 2020 (tables 1 and 2). However, 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 an annually reported domestic vanadium consumer that was not included on a monthly basis prior.

Consumer stocks of all forms of vanadium were 182 metric tons (t) of contained vanadium at the end of February 2021, slightly more compared with consumer stocks at the end of January 2021 (table 1).

Prices

According to CRU Group (2021), U.S. ferrovanadium (FeV) prices ranged from \$14.613 to \$15.131 per pound of contained vanadium in February 2021, compared with \$12.263 to \$12.800 per pound in January 2021. In Europe, FeV prices ranged from \$28.200 to \$28.900 per kilogram of contained vanadium in February 2021, compared with \$26.413 to \$27.050 per kilogram in January 2021. In China, vanadium pentoxide (V_2O_5) prices ranged from \$6.638 to \$6.738 per pound of contained vanadium in February 2021, compared with \$6.475 to \$6.681 per pound of contained vanadium in January 2021 (fig. 1).

Reference Cited

CRU Group, 2021, Noble alloys and minor metals prices: CRU Group, March 1. (Accessed April 21, 2021, via <http://www.crugroup.com/>.)

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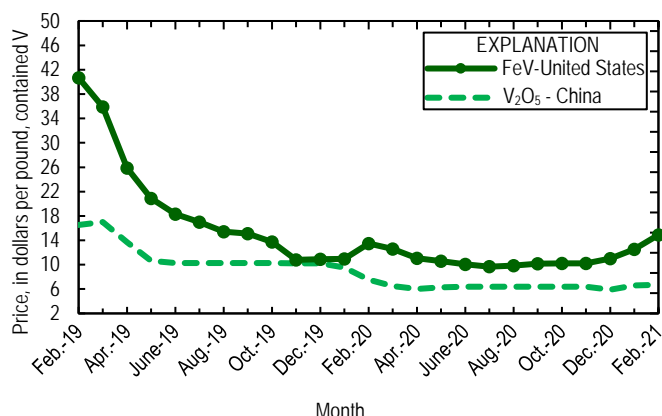


Figure 1. Average monthly prices for FeV and V_2O_5 from February 2019 through February 2021. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2021					
	January		February		January–February	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	351,000	136,000	353,000	137,000	704,000	137,000
Vanadium-aluminum alloy and other forms ³	20,000	43,000	20,500	45,000	40,500	45,000
Total	371,000	179,000	373,000	182,000	744,000	182,000

^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)

	2021		
	January	February	January– February
Steel:			
Carbon	W	W	W
Full alloy	98,000	98,200	196,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,000	4,300	8,300
Tool	W	W	W
Total steel	102,000	103,000	205,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	371,000	373,000	744,000

^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	2021								
		January			February			January–February		
		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	927	367	\$73,700	--	--	--	927	367	\$73,700
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(3)	(3)	482,000	164,000	21,500	\$696,000	164,000	21,500	1,180,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	462,000	435,000	5,830,000	120,000	119,000	2,600,000	582,000	554,000	8,430,000
Vanadium oxides and hydroxides, other	2825.30.0050	--	--	--	--	--	--	--	--	--
Vanadium chlorides	2827.39.1000	--	--	--	--	--	--	--	--	--
Vanadium sulfates	2833.29.3000	--	--	--	2,000	1,250	12,000	2,000	1,250	12,000
Vanadates	2841.90.1000	5,820	3,850	79,200	362	152	12,600	6,180	4,000	91,800
Ferrovandium	7202.92.0000	219,000	172,000	4,750,000	131,000	100,000	2,960,000	350,000	273,000	7,720,000
Vanadium metal, including waste and scrap	8112.92.7000	--	--	--	319	200	73,200	319	200	73,200
Vanadium and articles thereof ⁴	8112.99.2000	741	728	137,000	401	400	111,000	1,140	1,130	248,000
Total		688,000	612,000	11,400,000	418,000	243,000	6,470,000	1,110,000	856,000	17,800,000

-- 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."

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	2021					
		January		February		January–February	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium ores and concentrates	2615.90.6090						
Mexico		927	367	--	--	927	367
Total		927	367	--	--	927	367
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Brazil		140,000	139,000	120,000	119,000	260,000	259,000
China		--	--	62	61	62	61
Other [3 countries and (or) localities]		322,000 ^r	296,000 ^r	--	--	322,000	296,000
Total		462,000	435,000	120,000	119,000	582,000	554,000
Ferrovandium	7202.92.0000						
Austria		116,000	92,700	46,900	33,300	163,000	126,000
Canada		85,200	66,100	24,300	19,500	110,000	85,600
Russia		--	--	60,000	47,700	60,000	47,700
Other, Latvia		17,000 ^r	13,600 ^r	--	--	17,000	13,600
Total		219,000	172,000	131,000	100,000	350,000	273,000
Exports:							
Vanadium ores and concentrates	2615.90.6090						
Taiwan		15,800	NA	14,200	NA	30,000	NA
Other, Cambodia		1,490 ^r	NA	--	--	1,490	NA
Total		17,300	XX	14,200	XX	31,500	XX
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
India		NA	3,160	--	--	NA	3,160
Other [5 countries and (or) localities]		--	--	--	--	--	--
Total		XX	3,160	--	--	XX	3,160
Other oxides and hydroxides of vanadium	2825.30.0050						
India		NA	3,370	--	--	NA	3,370
Netherlands		NA	45,200	--	--	NA	45,200
Total		XX	48,600	--	--	XX	48,600
Ferrovandium	7202.92.0000						
Canada		--	--	3,620	2,710	3,620	2,710
Colombia		916	687	916	687	1,830	1,370
Other, Peru		265	199	--	--	265	199
Total		1,180	886	4,530	3,400	5,710	4,290

^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 February.

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	2021					
		January		February		January–February	
		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		1,410,000	NA	1,510,000	NA	2,920,000	NA
Mexico		--	--	16,300	NA	16,300	NA
Total		1,410,000	XX	1,530,000	XX	2,940,000	XX
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000						
Oman		--	--	120,000	18,600	120,000	18,600
Switzerland		--	--	43,400	2,900	43,400	2,900
Total		--	--	164,000	21,500	164,000	21,500
Vanadium sulfates, China	2833.29.3000	--	--	2,000	1,250	2,000	1,250
Vanadates	2841.90.1000						
Germany		5,700	3,800	300	100	6,000	3,900
India		--	--	5	2	5	2
Japan		115	45	57	50	172	95
Total		5,820	3,850	362	152	6,180	4,000
Vanadium metal, including waste and scrap and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		10	8	355	236	365	244
Russia		680	679	365	364	1,050	1,040
Other [2 countries and (or) localities]		51 ^r	41 ^r	--	--	51	41
Total		741	728	720	600	1,460	1,330
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
Belgium		48,500	NA	135,000	NA	184,000	NA
Italy		--	--	19,900	NA	19,900	NA
Total		48,500	XX	155,000	XX	204,000	XX
Vanadium metal, including waste and scrap and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Australia		--	--	56	NA	56	NA
Other, Germany		1,620 ^r	NA	--	--	1,620	NA
Total		1,620	XX	56	XX	1,680	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 February.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.