

Mineral Industry Surveys

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VANADIUM IN APRIL 2020

Reported domestic vanadium consumption was 236 metric tons (t) of contained vanadium in April 2020, slightly less compared with consumption in March 2020 and 5% less compared with that in April 2019. Consumer stocks of all forms of vanadium were 167 t at the end of April, a decrease from 192 t at yearend 2019, and slightly more than 162 t in March 2020 (table 1).

Prices

According to CRU Group (2020), U.S. ferrovandium (FeV) prices ranged from \$10.611 to \$11.500 per pound of contained vanadium in April 2020, compared with \$12.189 to \$12.989 per pound in March 2020. In Europe, FeV prices ranged from \$25.589 to \$26.272 per kilogram of contained vanadium in April 2020, compared with \$25.661 to \$26.722 per kilogram in March 2020. In China, vanadium pentoxide (V₂O₅) prices ranged from \$5.689 to \$6.300 per pound of contained vanadium in April 2020, compared with \$6.233 to \$6.756 per pound in March 2020 (fig. 1).

Reference Cited

CRU Group, 2020, Noble alloys and minor metals prices: CRU Group, May 1. (Accessed June 15, 2020, via <http://www.crugroup.com/>.)

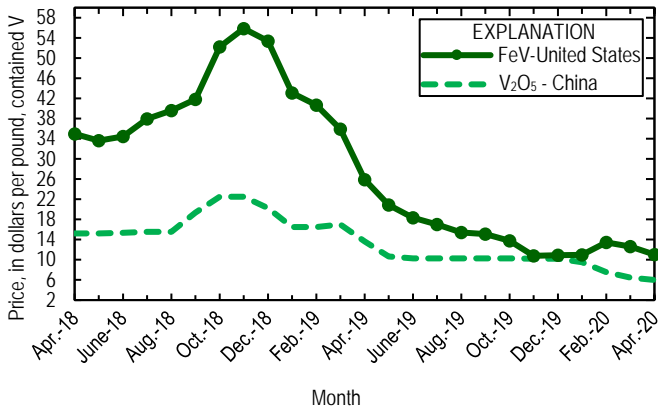


Figure 1. Average monthly prices for FeV and V₂O₅ from April 2018 through April 2020. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2020					
	March		April		January–April	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	218,000 ^r	124,000 ^r	215,000	129,000	873,000	129,000
Vanadium-aluminum alloy and other forms ³	21,000	38,000	21,000	38,000	84,100	38,000
Total	239,000 ^r	162,000 ^r	236,000	167,000	957,000	167,000

^pPreliminary. ^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)

	2020		
	March	April	January– April
Steel:			
Carbon	W	W	W
Full alloy	101,000	101,000	403,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,930	19,700
Tool	W	W	W
Total steel	106,000	106,000	423,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	239,000 [†]	236,000	957,000

[†]Revised. 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								
		March			April			January–April		
		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	72	43	\$14,300	2,180	1,320	\$173,000	3,740	2,200	\$320,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(3)	(3)	716,000	(3)	(3)	509,000	(3)	(3)	4,170,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	561,000	322,000	9,130,000	362,000	234,000	5,790,000	1,530,000	959,000	24,100,000
Vanadium oxides and hydroxides, other	2825.30.0050	20,000	13,100	428,000	20,000	13,200	759,000	61,000	40,100	1,600,000
Vanadium sulfates	2833.29.3000	--	--	--	2,000	1,250	12,000	4,190	2,620	25,200
Vanadates	2841.90.1000	38,100	24,900	390,000	114,000	57,800	1,140,000	158,000	85,400	1,640,000
Ferrovandium	7202.92.0000	212,000	137,000	5,430,000	200,000	132,000	7,630,000	629,000	410,000	27,100,000
Vanadium metal, including waste and scrap	8112.92.7000	--	--	--	--	--	--	--	--	--
Vanadium and articles thereof ⁴	8112.99.2000	1,080	1,060	282,000	8,030	5,390	227,000	47,300	31,400	1,850,000
Total		832,000	498,000	16,400,000	708,000	445,000	16,200,000	2,430,000	1,530,000	60,800,000

-- Zero.

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

²Harmonized Tariff Schedule of the United States.

³Withheld to avoid disclosing company proprietary data; 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					
		March		April		January–April	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium ores and concentrates	2615.90.6090						
Mexico		72	43	2,180	1,320	3,470	2,030
Other, Canada		--	--	--	--	278	167
Total		72	43	2,180	1,320	3,740	2,200
Vanadium pentoxide (anhydride) ³	2825.30.0010						
Brazil		400,000	223,000	200,000	111,000	940,000	524,000
China		--	--	10,000	8,000	15,100	13,000
Germany		--	--	52,900	42,800	77,800	61,300
South Africa		140,000	78,200	78,000	51,200	401,000	267,000
Taiwan		20,800	20,800	20,800	20,800	93,100	93,000
Total		561,000	322,000	362,000	234,000	1,530,000	959,000
Other oxides and hydroxides of vanadium	2825.30.0050						
South Africa		20,000	13,100	20,000	13,200	60,000	39,400
Other, Morocco		--	--	--	--	983	627
Total		20,000	13,100	20,000	13,200	61,000	40,100
Ferrovandium	7202.92.0000						
Austria		70,300	49,000	76,500	58,600	257,000	169,000
Canada		114,000	72,200	103,000	64,300	306,000	207,000
Ukraine		--	--	21,300	8,680	33,300	13,600
Other [2 countries and (or) localities]		27,000	15,600	--	--	32,200	19,800
Total		212,000	137,000	200,000	132,000	629,000	410,000
Exports:							
Vanadium ores and concentrates	2615.90.6090						
India		--	--	5,260	NA	5,260	NA
Ukraine		--	--	1,600	NA	1,600	NA
Other [2 countries and (or) localities]		6,640 ^r	NA	--	--	18,700	NA
Total		6,640	XX	6,860	XX	25,500	XX
Other oxides and hydroxides of vanadium	2825.30.0050						
China		--	--	NA	2,180	NA	2,180
Other [3 countries and (or) localities]		--	--	--	--	NA	23,400
Total		--	--	XX	2,180	XX	25,600
Ferrovandium	7202.92.0000						
Colombia		--	--	916	687	1,120	837
Korea, Republic of		--	--	454	341	2,370	1,780
Other [4 countries and (or) localities]		25,000 ^r	18,800	--	--	45,700	34,200
Total		25,000	18,800	1,370	1,030	49,100	36,900

^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 April.

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					
		March		April		January–April	
		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		13,600	NA	--	--	165,000	NA
Finland		4,060	NA	--	--	4,060	NA
Mexico		33,600	NA	--	--	84,000	NA
Total		51,200	XX	--	--	253,000	XX
Vanadium sulfates, China	2833.29.3000	--	--	2,000	1,250	4,190	2,620
Vanadates	2841.90.1000						
Austria		--	--	57,000	28,900	57,000	28,900
Switzerland		--	--	57,000	28,900	57,000	28,900
Other [5 countries and (or) localities]		38,100 ^r	24,900 ^r	--	--	44,400	27,600
Total		38,100	24,900	114,000	57,800	158,000	85,400
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
China		--	--	8,000	5,360	8,000	5,360
Germany		43	27	4	2	242	224
Netherlands		--	--	22	22	22	22
Other [4 countries and (or) localities]		1,030 ^r	1,030 ^r	--	--	39,000	25,800
Total		1,080	1,060	8,030	5,390	47,300	31,400
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
France		34,700	NA	--	--	34,700	NA
Italy		38,100	NA	--	--	88,300	NA
Other, Netherlands		--	--	--	--	90,700	NA
Total		72,700	XX	--	--	214,000	XX
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Australia		--	--	401	NA	401	NA
France		--	--	601	NA	1,120	NA
Spain		--	--	40	NA	40	NA
Other [8 countries and (or) localities]		13,300 ^r	NA	--	--	14,500	NA
Total		13,300	XX	1,040	XX	16,100	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 April.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.