

Mineral Industry Surveys

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VANADIUM IN MARCH 2020

Reported domestic vanadium consumption was 242 metric tons (t) of contained vanadium in March 2020, essentially unchanged compared with consumption in February 2020 and slightly less compared with that in March 2019. Consumer stocks of all forms of vanadium were 161 t at the end of March, a decrease from 192 t at yearend 2019, and slightly more than 157 t in February 2020 (table 1).

Prices

According to CRU Group (2020), U.S. ferrovandium (FeV) prices ranged from \$12.189 to \$12.989 per pound of contained vanadium in March 2020, compared with \$13.169 to \$13.738 per pound in February 2020. In Europe, FeV prices ranged from \$25.661 to \$26.722 per kilogram of contained vanadium in March 2020, compared with \$27.500 to \$29.663 per kilogram in February 2020. In China, vanadium pentoxide (V₂O₅) prices ranged from \$6.233 to \$6.756 per pound of contained vanadium in March 2020, compared with \$7.200 to \$7.925 per pound in February 2020 (fig. 1).

Reference Cited

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

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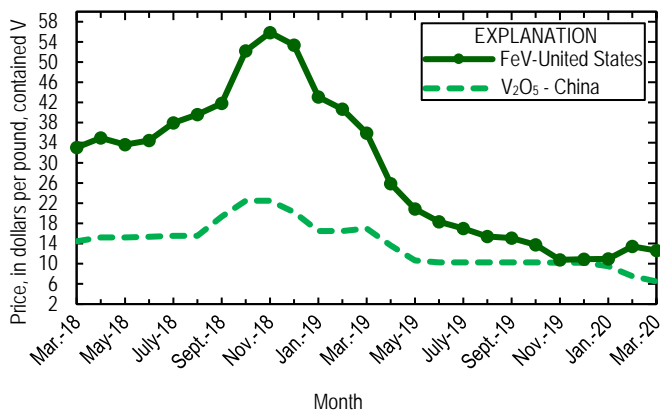


Figure 1. Average monthly prices for FeV and V₂O₅ from March 2018 through March 2020. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2020					
	February		March		January–March	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	221,000	119,000	221,000	123,000	664,000	123,000
Vanadium-aluminum alloy and other forms ³	21,000	38,000	21,000	38,000	63,100	38,000
Total	242,000	157,000	242,000	161,000	727,000	161,000

^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)

	2020		
	February	March	January– March
Steel:			
Carbon	W	W	W
Full alloy	101,000	101,000	302,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,930	14,800
Tool	W	W	W
Total steel	106,000	106,000	317,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	242,000	242,000	727,000

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	2020								
		February			March			January–March		
		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	314	155	\$41,800	72	43	\$14,300	1,560	882	\$147,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(3)	(3)	1,230,000	(3)	(3)	716,000	(3)	(3)	3,660,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	160,000	112,000	2,290,000	561,000	322,000	9,130,000	1,160,000	725,000	18,400,000
Vanadium oxides and hydroxides, other	2825.30.0050	--	--	--	20,000	13,100	428,000	41,000	26,900	844,000
Vanadium sulfates	2833.29.3000	2,190	1,370	13,200	--	--	--	2,190	1,370	13,200
Vanadates	2841.90.1000	6,360	2,750	108,000	38,100	24,900	390,000	44,400	27,600	498,000
Ferrovandium	7202.92.0000	79,100	53,800	6,260,000	212,000	137,000	5,430,000	428,000	278,000	19,400,000
Vanadium metal, including waste and scrap	8112.92.7000	--	--	--	--	--	--	--	--	--
Vanadium and articles thereof ⁴	8112.99.2000	395	394	68,000	1,080	1,060	282,000	39,300	26,000	1,620,000
Total		248,000	170,000	10,000,000	832,000	498,000	16,400,000	1,720,000	1,090,000	44,600,000

-- 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					
		February		March		January–March	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium ores and concentrates	2615.90.6090						
Mexico		314	155	72	43	1,290	715
Other, Canada		--	--	--	--	278	167
Total		314	155	72	43	1,560	882
Vanadium pentoxide (anhydride) ³	2825.30.0010						
Brazil		80,000	44,700	400,000	223,000	740,000	413,000
South Africa		20,000	11,200	140,000	78,200	323,000	216,000
Taiwan		41,500	41,500	20,800	20,800	72,300	72,300
Other [2 countries and (or) localities]		18,000 [†]	14,600 [†]	--	--	29,900	23,500
Total		160,000	112,000	561,000	322,000	1,160,000	725,000
Other oxides and hydroxides of vanadium	2825.30.0050						
South Africa		--	--	20,000	13,100	40,000	26,200
Other, Morocco		--	--	--	--	983	627
Total		--	--	20,000	13,100	41,000	26,900
Ferrovandium	7202.92.0000						
Austria		30,000	14,500	70,300	49,000	181,000	111,000
Canada		49,100	39,300	114,000	72,200	203,000	143,000
Latvia		--	--	20,000	10,100	25,200	14,300
Vietnam		--	--	7,000	5,540	7,000	5,540
Other, Ukraine		--	--	--	--	12,100	4,920
Total		79,100	53,800	212,000	137,000	428,000	278,000
Exports:							
Vanadium ores and concentrates	2615.90.6090						
Cambodia		827	NA	6,640	NA	14,600	NA
Other, Taiwan		--	--	--	--	4,080	NA
Total		827	XX	6,640	XX	18,700	XX
Ferrovandium	7202.92.0000						
Brazil		--	--	20,000	15,000	20,000	15,000
Mexico		18,100	13,600	5,000	3,750	23,800	17,900
Other [4 countries and (or) localities]		--	--	--	--	3,970	2,980
Total		18,100	13,600	25,000	18,800	47,800	35,800

[†]Revised. 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 March.

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					
		February		March		January–March	
		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		65,200	NA	13,600	NA	165,000	NA
Finland		--	--	4,060	NA	4,060	NA
Mexico		50,400	NA	33,600	NA	84,000	NA
Total		116,000	XX	51,200	XX	253,000	XX
Vanadium sulfates, China	2833.29.3000	2,190	1,370	--	--	2,190	1,370
Vanadates	2841.90.1000						
China		614	500	50	25	664	525
Germany		5,740	2,250	400	174	6,140	2,420
Taiwan		--	--	36,000	23,300	36,000	23,300
United Kingdom		--	--	1,650	1,360	1,650	1,360
Other, Russia		5	2	--	--	5	2
Total		6,360	2,750	38,100	24,900	44,400	27,600
Vanadium metal, including waste and scrap and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		194	194	43	27	238	222
Mexico		--	--	352	352	387	387
Russia		--	--	681	680	37,000	24,300
Other [2 countries and (or) localities]		201	200	--	--	1,700	1,180
Total		395	394	1,080	1,060	39,300	26,000
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
France		--	--	34,700	NA	34,700	NA
Italy		30,700	NA	38,100	NA	88,300	NA
Other, Netherlands		90,700 ^r	NA	--	--	90,700	NA
Total		121,000	XX	72,700	XX	214,000	XX
Vanadium metal, including waste and scrap and Aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		--	--	282	NA	282	NA
Italy		--	--	7	NA	7	NA
Kazakhstan		--	--	12,200	NA	12,200	NA
Nicaragua		--	--	126	NA	126	NA
United Kingdom		259	NA	660	NA	919	NA
Other [4 countries and (or) localities]		724 ^r	NA	--	--	1,440	NA
Total		983	XX	13,300	XX	15,000	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 March.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.