

# 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 2020

Reported domestic vanadium consumption was 3% more than consumption in May 2020 and was slightly more than consumption in June 2019. Consumer stocks of all forms of vanadium were 161 metric tons (t) of contained vanadium t at the end of June, a decrease from 192 t at yearend 2019, and 12% less when compared with 183 t in May 2020 (table 1).

**Prices**

According to CRU Group (2020), U.S. ferrovandium (FeV) prices ranged from \$9.750 to \$10.350 per pound of contained vanadium in June 2020, compared with \$10.288 to \$10.863 per pound in May 2020. In Europe, FeV prices ranged from \$24.111 to \$24.600 per kilogram of contained vanadium in June 2020, compared with from \$25.500 to \$25.975 per kilogram in May 2020. In China, vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices ranged from \$6.300 to \$6.500 per pound of contained vanadium in June 2020, compared with \$6.125 to \$6.450 per pound in May 2020 (fig. 1).

**Reference Cited**

CRU Group, 2020, Noble alloys and minor metals prices: CRU Group, July 1. (Accessed August 22, 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>.*

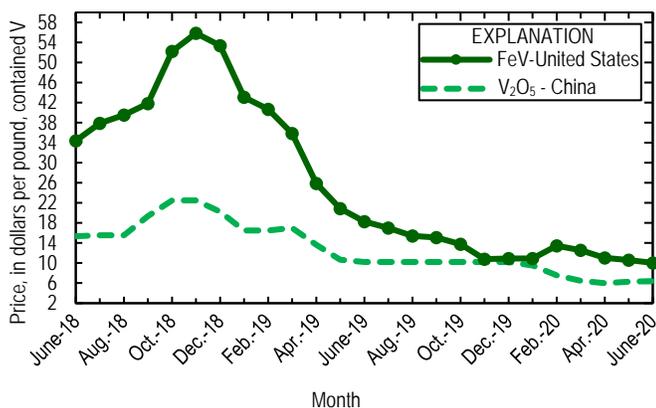


Figure 1. Average monthly prices for FeV and V<sub>2</sub>O<sub>5</sub> from June 2018 through June 2020. Source: CRU Group.

TABLE 1  
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM<sup>p, 1</sup>

(Kilograms, contained vanadium)

	2020					
	May		June		January–June	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium <sup>2</sup>	221,000 <sup>r</sup>	145,000 <sup>r</sup>	227,000	123,000	1,320,000	123,000
Vanadium-aluminum alloy and other forms <sup>3</sup>	21,000	38,000	21,000	38,000	126,000	38,000
<b>Total</b>	<b>242,000 <sup>r</sup></b>	<b>183,000 <sup>r</sup></b>	<b>248,000</b>	<b>161,000</b>	<b>1,450,000</b>	<b>161,000</b>

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown. Includes estimates.

<sup>2</sup>Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

<sup>3</sup>Includes 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<sup>1</sup>

(Kilograms, contained vanadium)

	2020		
	May	June	January– June
Steel:			
Carbon	W	W	W
Full alloy	101,000	101,000	604,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,930	29,600
Tool	W	W	W
Total steel	106,000	106,000	634,000
Superalloys	W	W	W
Miscellaneous and unspecified <sup>2</sup>	W	W	W
Total	242,000 <sup>r</sup>	248,000	1,450,000

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown. Includes estimates.

<sup>2</sup>Includes 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 PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	HTS <sup>2</sup> code	2020								
		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	1,750	977	\$139,000	278	111	\$22,100	5,770	3,290	\$481,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(3)	(3)	627,000	(3)	(3)	625,000	(3)	(3)	5,420,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	255,000	171,000	4,130,000	121,000	114,000	1,660,000	1,900,000	1,240,000	29,900,000
Vanadium oxides and hydroxides, other	2825.30.0050	20,000	13,300	765,000	20,000	13,200	458,000	101,000	66,500	2,830,000
Vanadium sulfates	2833.29.3000	--	--	--	100	62	3,180	4,290	2,680	28,300
Vanadates	2841.90.1000	5,730	2,200	84,300	57	48	4,580	164,000	87,700	1,720,000
Ferrovandium	7202.92.0000	245,000	135,000	4,580,000	93,300	58,900	3,270,000	967,000	604,000	34,900,000
Vanadium metal, including waste and scrap	8112.92.7000	--	--	--	272	122	62,700	272	122	62,700
Vanadium and articles thereof <sup>4</sup>	8112.99.2000	4,030	2,690	123,000	38,700	25,700	1,480,000	90,100	59,900	3,450,000
Total		531,000	326,000	10,500,000	274,000	212,000	7,580,000	3,240,000	2,070,000	78,800,000

-- Zero.

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

<sup>2</sup>Harmonized Tariff Schedule of the United States.

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

<sup>4</sup>Aluminum-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)<sup>1,2</sup>

(Kilograms, gross and contained weight)

Country or locality	HTS <sup>3</sup> code	2020					
		May		June		January–June	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
<b>Imports for consumption:</b>							
Vanadium ores and concentrates	2615.90.6090						
Mexico		1,750	977	278	111	5,490	3,120
Other, Canada		--	--	--	--	278	167
Total		1,750	977	278	111	5,770	3,290
Vanadium pentoxide (anhydride) <sup>3</sup>	2825.30.0010						
Brazil		140,000	78,000	80,000	79,700	1,160,000	682,000
China		4,200	2,340	4,000	2,230	23,300	17,600
Germany		11,100	9,060	16,700	11,400	106,000	81,800
Taiwan		20,800	20,800	20,700	20,700	135,000	135,000
Other [2 countries and (or) localities]		78,800 <sup>r</sup>	60,900 <sup>r</sup>	--	--	479,000	328,000
Total		255,000	171,000	121,000	114,000	1,900,000	1,240,000
Other oxides and hydroxides of vanadium	2825.30.0050						
South Africa		20,000	13,300	20,000	13,200	100,000	65,900
Other, Morocco		--	--	--	--	983	627
Total		20,000	13,300	20,000	13,200	101,000	66,500
Ferrovandium	7202.92.0000						
Austria		70,200	56,300	20,000	15,700	348,000	241,000
Canada		20,000	15,900	60,400	37,900	386,000	261,000
Latvia		--	--	12,900	5,250	38,100	19,600
Other [3 countries and (or) localities]		155,000 <sup>r</sup>	63,100 <sup>r</sup>	--	--	195,000	82,200
Total		245,000	135,000	93,300	58,900	967,000	604,000
<b>Exports:</b>							
Vanadium ores and concentrates	2615.90.6090						
Taiwan		8,860	NA	1,870	NA	14,800	NA
Other [3 countries and (or) localities]		--	--	--	--	21,400	NA
Total		8,860	XX	1,870	XX	36,200	XX
Vanadium pentoxide (anhydride) <sup>3</sup>	2825.30.0010						
Australia		--	--	NA	57	NA	87
Other, Mexico		NA	400	--	--	NA	400
Total		XX	400	XX	57	XX	487
Ferrovandium	7202.92.0000						
India		20,400	16,000	--	--	20,400	16,000
Mexico		970	728	--	--	24,800	18,600
Other [5 countries and (or) localities]		--	--	--	--	25,300	19,000
Total		21,400	16,700	--	--	70,500	53,600

<sup>r</sup>Revised. NA Not available. XX Not applicable. -- Zero.

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

<sup>2</sup>Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries or localities in June.

<sup>3</sup>Harmonized Tariff Schedule of the United States.

<sup>4</sup>May 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<sup>1,2</sup>

(Kilograms, gross and contained weight)

Country or locality	HTS <sup>3</sup> code	2020					
		May		June		January–June	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
<b>Imports for consumption:</b>							
Slag, from the manufacture of iron and steel	2619.00.9000						
Canada		2,980,000	NA	170,000	NA	3,400,000	NA
Mexico		--	--	19,900	NA	121,000	NA
Other, Finland		11,800	NA	--	--	19,400	NA
Total		2,990,000	XX	190,000	XX	3,540,000	XX
Vanadium sulfates	2833.29.3000						
Japan		--	--	100	62	100	62
Other, China		--	--	--	--	4,190	2,620
Total		--	--	100	62	4,290	2,680
Vanadates	2841.90.1000						
Austria		--	--	50	45	57,100	28,900
India		--	--	7	3	7	3
Other [6 countries and (or) localities]		5,730 <sup>r</sup>	2,200 <sup>r</sup>	--	--	107,000	58,700
Total		5,730	2,200	57	48	164,000	87,700
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		24	20	1,700	1,270	1,970	1,510
Russia		--	--	37,300	24,600	74,300	48,900
United Kingdom		--	--	1	1	1	1
Other [5 countries and (or) localities]		4,000 <sup>r</sup>	2,670 <sup>r</sup>	--	--	14,100	9,610
Total		4,030	2,690	39,000	25,900	90,300	60,000
<b>Exports:</b>							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
Germany		--	--	36,600	NA	36,600	NA
Italy		--	--	39,500	NA	128,000	NA
Other [2 countries and (or) localities]		--	--	--	--	125,000	NA
Total		--	--	76,100	XX	290,000	XX
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Australia		--	--	513	NA	914	NA
United Kingdom		137	NA	4,460	NA	5,520	NA
Other [9 countries and (or) localities]		261 <sup>r</sup>	NA	--	--	15,000	NA
Total		398	XX	4,970	XX	21,400	XX

<sup>r</sup>Revised. NA Not available. XX Not applicable. -- Zero.

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

<sup>2</sup>Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries in June.

<sup>3</sup>Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.