

Mineral Industry Surveys

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VANADIUM IN AUGUST 2020

Reported domestic vanadium consumption in August 2020 was slightly more than consumption in July 2020, and 57% more than consumption in August 2019 (tables 1 and 2). However, it is important to note that monthly reported domestic vanadium consumption was revised from January 2020 to June 2020 in order to include consumption data from an annually reported domestic vanadium consumer.

Consumer stocks of all forms of vanadium were 181 metric tons (t) of contained vanadium at the end of August, a decrease from 192 t at yearend 2019, and slightly more when compared with 177 t in July 2020 (table 1).

Prices

According to CRU Group (2020), U.S. ferrovanadium (FeV) prices ranged from \$9.488 to \$10.213 per pound of contained vanadium in August 2020, compared with \$9.428 to \$9.917 per pound in July 2020. In Europe, FeV prices ranged from \$23.325 to \$23.863 per kilogram of contained vanadium in August 2020, compared with from \$22.722 to \$23.222 per kilogram in July 2020. In China, vanadium pentoxide (V_2O_5) prices have ranged from \$6.300 to \$6.500 per pound of contained vanadium since June 2020 (fig. 1).

Reference Cited

CRU Group, 2020, Noble alloys and minor metals prices: CRU Group, September 1. (Accessed November 2, 2020, via <http://www.crugroup.com/>.)

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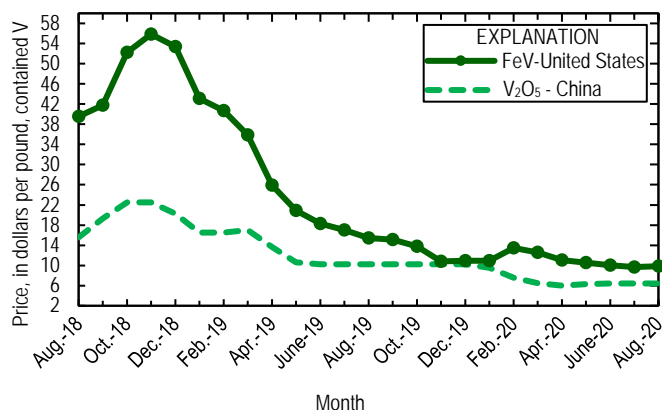


Figure 1. Average monthly prices for FeV and V_2O_5 from August 2018 through August 2020. Source: CRU Group.

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

(Kilograms, contained vanadium)

	2020					
	July		August ^e		January–August ^e	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	351,000	139,000	351,000	140,000	2,760,000	140,000
Vanadium-aluminum alloy and other forms ³	21,000	38,000	24,500	40,500	172,000	40,500
Total	372,000	177,000	376,000	181,000	2,930,000	181,000

^eEstimated. ^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		
	July	August	January– August
Steel:			
Carbon	W	W	W
Full alloy	101,000	98,200 ^e	705,000 ^e
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,810 ^e	34,500 ^e
Tool	W	W	W
Total steel	106,000	103,000 ^e	739,000 ^e
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	372,000	376,000 ^e	2,930,000 ^e

^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	2020								
		July			August			January–August		
		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	511	268	\$40,600	--	--	--	6,280	3,560	\$522,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	261,000	24,900	847,000	100,000	4,270	\$270,000	361,000	29,100	6,540,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	95,900	73,300	1,640,000	98,000	91,700	1,350,000	2,100,000	1,410,000	32,900,000
Vanadium oxides and hydroxides, other	2825.30.0050	1	1	3,820	--	--	--	101,000	66,500	2,830,000
Vanadium sulfates	2833.29.3000	--	--	--	--	--	--	4,290	2,680	28,300
Vanadates	2841.90.1000	--	--	--	9,700	6,640	143,000	174,000	94,300	1,870,000
Ferrovandium	7202.92.0000	187,000	146,000	3,640,000	126,000	87,900	2,730,000	1,280,000	838,000	41,300,000
Vanadium metal, including waste and scrap	8112.92.7000	--	--	--	--	--	--	272	122	62,700
Vanadium and articles thereof ³	8112.99.2000	36,200	23,500	1,230,000	955	953	163,000	127,000	84,300	4,850,000
Total		580,000	268,000	7,400,000	335,000	191,000	4,650,000	4,150,000	2,530,000	90,900,000

-- Zero.

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

²Harmonized Tariff Schedule of the United States.

³Aluminum-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					
		July		August		January–August	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium ores and concentrates	2615.90.6090						
Mexico		511	268	--	--	6,010	3,390
Other, Canada		--	--	--	--	278	167
Total		511	268	--	--	6,280	3,560
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Brazil		23,000	21,600	79,900	79,700	1,260,000	783,000
China		--	--	60	34	23,300	17,600
Germany		21,900	18,400	8,000	6,400	135,000	107,000
South Africa		51,000	33,300	10,000	5,580	520,000	346,000
Other [2 countries and (or) localities]		--	--	--	--	155,000	155,000
Total		95,900	73,300	98,000	91,700	2,100,000	1,410,000
Other oxides and hydroxides of vanadium	2825.30.0050						
Germany		1	1	--	--	1	1
Other [2 countries and (or) localities]		--	--	--	--	101,000	66,500
Total		1	1	--	--	101,000	66,500
Ferrovanadium	7202.92.0000						
Austria		60,000	47,800	51,200	32,600	459,000	322,000
Canada		127,000	98,100	63,300	50,500	576,000	410,000
Latvia		--	--	12,000	4,880	50,100	24,400
Other [3 countries and (or) localities]		--	--	--	--	195,000	82,200
Total		187,000	146,000	126,000	87,900	1,280,000	838,000
Exports:							
Vanadium ores and concentrates	2615.90.6090						
Cambodia		--	--	3,060	NA	17,600	NA
India		--	--	470	NA	5,730	NA
Taiwan		4,330	NA	9,560	NA	28,700	NA
Other [2 countries and (or) localities]		186	NA	--	--	1,790	NA
Total		4,510	XX	13,100	XX	53,800	XX
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
India		--	--	NA	4,210	NA	4,210
Other [3 countries and (or) localities]		NA	37,900 ^r	--	--	NA	38,400
Total		XX	37,900	XX	4,210	XX	42,600
Other oxides and hydroxides of vanadium	2825.30.0050						
China		--	--	NA	816	NA	3,000
Trinidad and Tobago		--	--	NA	7,450	NA	7,450
Other [4 countries and (or) localities]		NA	11,200 ^r	--	--	NA	34,600
Total		XX	11,200	XX	8,270	XX	45,100
Ferrovanadium	7202.92.0000						
China		2,730	2,050	760	570	3,490	2,620
Netherlands		42,300	31,700	9,650	7,230	51,900	38,900
Other [8 countries and (or) localities]		9,830 ^r	7,380 ^r	--	--	80,300	61,000
Total		54,800	41,100	10,400	7,800	136,000	103,000

^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 August.

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					
		July		August		January–August	
		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		195,000	NA	594,000	NA	4,190,000	NA
Mexico		--	--	77,700	NA	198,000	NA
Other, Finland		--	--	--	--	19,400	NA
Total		195,000	XX	671,000	XX	4,400,000	XX
Vanadium bearing ash and residues, Belgium	2620.40.0030, 2620.99.1000	261,000	24,900	100,000	4,270	361,000	29,100
Vanadates	2841.90.1000						
Germany		--	--	5,700	3,800	11,800	6,220
South Africa		--	--	4,000	2,840	4,000	2,840
Other [7 countries and (or) localities]		--	--	--	--	158,000	85,300
Total		--	--	9,700	6,640	174,000	94,300
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Germany		272	122	1	1	1,970	1,510
Russia		36,200	23,500	954	952	111,000	73,300
Other [6 countries and (or) localities]		2 ^r	2 ^r	--	--	14,100	9,620
Total		36,400	23,600	955	953	127,000	84,400
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
France		--	--	13,800	NA	48,400	NA
Germany		--	--	15,400	NA	52,000	NA
Mexico		--	--	2,950	NA	2,950	NA
Other [3 countries and (or) localities]		71,800 ^r	NA	--	--	290,000	NA
Total		71,800	XX	32,100	XX	394,000	XX
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
China		1,100	NA	1,140	NA	2,240	NA
Other [11 countries and (or) localities]		--	--	--	--	21,400	NA
Total		1,100	XX	1,140	XX	23,700	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 August.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.