

Mineral Industry Surveys

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VANADIUM IN AUGUST 2018

Reported domestic consumption of vanadium in August 2018 was essentially unchanged from that of the previous month and 15% less than that of August 2017. Consumer stocks of all forms of vanadium were 191 metric tons (t) at the end of August, an increase from 155 t at yearend 2017 (table 1).

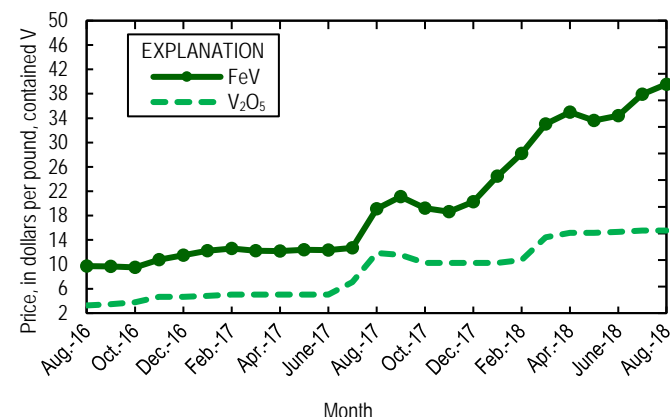


Figure 1. Average monthly prices for FeV and V₂O₅ from August 2016 through August 2018. Prices for FeV are United States prices, and prices for V₂O₅ are United States prices from August 2016 through June 2017 and Chinese prices from July 2017 through August 2018. Source: CRU Group.

According to CRU Group (2018), U.S. ferrovanadium (FeV) prices ranged from \$39.200 to \$39.944 per pound of contained vanadium in August 2018, compared with \$37.444 to \$38.389 per pound in July 2018. European FeV prices ranged from \$81.056 to \$81.833 per kilogram of contained vanadium in August 2018, compared with \$80.772 to \$81.428 per kilogram in July 2018. CRU Group discontinued publishing U.S. vanadium pentoxide (V₂O₅) prices from July 2017 onward. The Chinese V₂O₅ prices ranged from \$15.300 to \$15.800 per pound of contained vanadium in both July 2018 and August 2018 (fig. 1).

Reference Cited

CRU Group, 2018, Noble alloys and minor metals prices: CRU Group, August 31. (Accessed October 26, 2018, via <http://www.crugroup.com/>.)

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

(Kilograms, contained vanadium)

	2018					
	July		August		January–August	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	226,000	141,000	224,000	153,000	1,780,000	153,000
Vanadium-aluminum alloy and other forms ³	21,100	37,800	21,100	37,800	305,000	37,800
Total	247,000	178,000	245,000	191,000	2,090,000	191,000

^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)

	2018		
	July	August	January– August
Steel:			
Carbon	W	W	W
Full alloy	101,000	101,000	857,000
High-strength low-alloy	W	W	W
Stainless and heat resisting	4,930	4,930	39,400
Tool	W	W	W
Total steel	106,000	106,000	897,000
Superalloys	W	W	W
Miscellaneous and unspecified ²	W	W	W
Total	247,000	245,000	2,090,000

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	2018								
		July			August			January–August		
		Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	1,790,000	176,000 [†]	\$4,410,000	2,340,000	225,000	\$6,980,000	16,400,000	1,630,000	\$31,900,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	713,000	696,000	25,200,000	358,000	355,000	13,400,000	3,180,000	3,120,000	101,000,000
Vanadium oxides and hydroxides, other	2825.30.0050	40,000	26,200	1,600,000	--	--	--	140,000	91,300	4,990,000
Vanadium sulfates	2833.29.3000	100	100	6,700	5,070	3,160	30,400	8,060	5,170	75,300
Vanadates	2841.90.1000	17,300	3,030	572,000	19,800	12,400	512,000	353,000	208,000	8,280,000
Ferrovandium	7202.92.0000	378,000	284,000	20,200,000	376,000	281,000	27,800,000	2,730,000	2,040,000	141,000,000
Vanadium metal, including waste and scrap	8112.92.7000	10,600	7,150	706,000	594	382	125,000	18,900	13,900	1,260,000
Vanadium and articles thereof ³	8112.99.2000	30,800	22,000	1,350,000	77,100	50,100	2,640,000	348,000	226,000	12,900,000
Total		2,980,000	1,210,000 [†]	54,000,000	3,180,000	928,000	51,500,000	23,200,000	7,340,000	301,000,000

[†]Revised. -- Zero.

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

²Harmonized Tariff Schedule of the United States (HTS).

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, VANADIUM PENTOXIDE (ANHYDRIDE)
AND OTHER OXIDES AND HYDROXIDES OF VANADIUM^{1,2}

(Kilograms, gross and contained weight)

Country or locality	HTS ³ code	2018					
		July		August		January–August	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:							
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Brazil		440,000	438,000	140,000	140,000	1,460,000	1,450,000
China		109,000	100,000	113,000	112,000	509,000	479,000
Germany		45,800	39,100	1,430	818	85,400	69,800
South Africa		98,000	97,600	90,800	90,400	991,000	987,000
Switzerland		--	--	12,800	12,700	13,800	13,300
Other [2 countries and (or) localities]		20,800 ^r	20,800 ^r	--	--	123,000	120,000
Total		713,000	696,000	358,000	355,000	3,180,000	3,120,000
Other oxides and hydroxides of vanadium:	2825.30.0050						
Germany		--	--	--	--	36	23
South Africa		40,000	26,200	--	--	140,000	91,300
Total		40,000	26,200	--	--	140,000	91,300
Ferrovanadium	7202.92.0000						
Austria		118,000	94,400	215,000	164,000	1,550,000	1,190,000
Canada		92,900	74,300	42,000	33,600	472,000	371,000
India		20,000	16,200	20,000	15,900	100,000	80,200
Russia		80,000	63,800	60,000	47,800	258,000	207,000
Ukraine		--	--	20,000	10,300	25,000	12,700
Other [3 countries and (or) localities]		66,900 ^r	35,100 ^r	18,900	9,780	328,000	183,000
Total		378,000	284,000	376,000	281,000	2,730,000	2,040,000
Exports:							
Vanadium pentoxide (anhydride) ⁴	2825.30.0010						
Czech Republic		--	--	39,700	NA	39,700	NA
India		28,000	NA	71,800	NA	324,000	NA
Mexico		--	--	2,900	NA	9,690	NA
Other [2 countries and (or) localities]		--	--	--	--	23,000	NA
Total		28,000	XX	114,000	XX	397,000	XX
Other oxides and hydroxides of vanadium	2825.30.0050						
Nigeria		--	--	741	NA	741	NA
Other [4 countries and (or) localities]		--	--	--	--	44,900	NA
Total		--	--	741	XX	45,700	XX
Ferrovanadium	7202.92.0000						
Canada		20,000	15,000	21,900	16,400	80,300	60,200
Colombia		--	--	124	93	348	261
Korea, Republic of		--	--	5,110	3,830	12,100	9,090
Mexico		68	51	53,600	40,200	237,000	139,000
Other [4 countries and (or) localities]		7,410 ^r	5,560 ^r	--	--	23,000	15,300
Total		27,500	20,600	80,800	60,600	352,000	224,000

^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 and (or) localities in August.

³Harmonized Tariff Schedule of the United States (HTS).

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)

		2018					
		July		August		January–August	
Country or locality	HTS ³ code	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		213,000	NA	20,300,000	NA	67,500,000	NA
Mexico		18,000	NA	18,700	NA	274,000	NA
Other [2 countries and (or) localities]		20,400,000 ^r	NA	--	--	22,300,000	NA
Total		20,600,000	XX	20,400,000	XX	90,100,000	XX
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000						
Canada		1,790,000	176,000 ^r	2,250,000	220,000	16,000,000	1,570,000
Trinidad and Tobago		--	--	96,100	5,380	96,100	5,380
Other [4 countries and (or) localities]		--	--	--	--	301,000	53,400
Total		1,790,000	176,000 ^r	2,340,000	225,000	16,400,000	1,630,000
Vanadium sulfates	2833.29.3000						
China		100	100	5,070	3,160	7,900	5,070
Other [1 country and (or) locality]		--	--	--	--	160	100
Total		100	100	5,070	3,160	8,060	5,170
Vanadates	2841.90.1000						
Austria		--	--	25	17	114,000	57,800
Germany		--	--	900	100	13,200	4,770
Taiwan		--	--	18,900	12,300	151,000	98,500
Other [6 countries and (or) localities]		17,300 ^r	3,030 ^r	--	--	74,500	47,000
Total		17,300	3,030	19,800	12,400	353,000	208,000
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
China		--	--	37,600	24,500	97,700	63,800
Germany		20,000	14,500	3,380	2,600	25,200	18,800
Latvia		300	297	297	249	1,200	1,050
Russia		20,500	13,600	36,300	23,200	239,000	153,000
Other [5 countries and (or) localities]		729 ^r	728 ^r	--	--	3,970	3,400
Total		41,500	29,200	77,700	50,500	367,000	240,000
Exports:							
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
France		--	--	145,000	NA	145,000	NA
Other [8 countries and (or) localities]		639,000 ^r	NA	--	--	1,520,000	NA
Total		639,000	XX	145,000	XX	1,670,000	XX
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
Australia		4,000	NA	2,000	NA	9,680	NA
Germany		--	--	187	NA	3,150	NA
Japan		5,000	NA	5,350	NA	31,200	NA
United Kingdom		--	--	553	NA	8,120	NA
Other [10 countries and (or) localities]		71,800 ^r	NA	--	--	131,000	NA
Total		80,800	XX	8,090	XX	183,000	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 and (or) localities in August.

³Harmonized Tariff Schedule of the United States.

Source: U.S. Census Bureau.