

Mineral Industry Surveys

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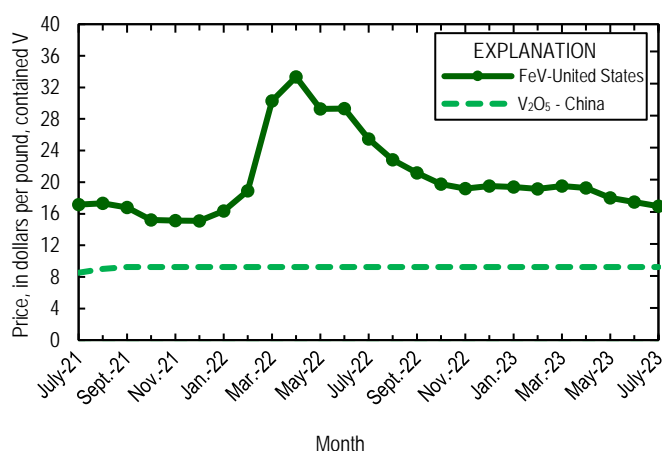
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VANADIUM IN JULY 2023

The amount of vanadium in U.S. imports of select vanadium products on a gross weight basis, excluding vanadium bearing ash and residues, in July 2023 was unchanged from that in June 2023 and 34% more than that in June 2022 (table 1). In July 2023, the only import sources for vanadium pentoxide (V_2O_5), were Brazil, South Africa, and Germany, in descending order of gross and contained weight quantity. In July 2023, the only import sources for ferrovanadium (FeV) were Canada, Austria, and Latvia, in descending order of gross and contained weight quantity (table 2).

Prices

U.S. FeV prices ranged from \$16.469 to \$17.469 per pound of contained vanadium in July 2023 compared with \$17.000 to \$17.944 per pound in June 2023. In Europe, FeV prices ranged from \$32.938 to \$33.938 per kilogram of contained vanadium in July 2023 compared with \$33.000 to \$34.000 in June 2023. In China, V_2O_5 prices ranged from \$9.000 to \$9.500 per pound of contained vanadium in July 2023, unchanged since September 2021 (fig. 1).



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Figure 1. Average monthly prices for ferrovanadium (FeV) and vanadium pentoxide (V_2O_5) from July 2021 through July 2023. Source: CRU Group.

TABLE 1
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	HTS ² codes	2023								
		June			July			January–July		
		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	562	338 ³	\$44,700	41,200	24,700 ³	\$201,000	837,000	491,000 ³	\$3,510,000
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	(4)	(4)	2,600,000	(4)	(4)	1,580,000	(4)	(4)	16,300,000
Chemical compounds:										
Vanadium pentoxide (anhydride)	2825.30.0010	226,000	217,000	5,700,000	282,000	259,000	6,510,000	1,590,000	1,220,000 ⁵	40,500,000
Vanadium oxides and hydroxides, other	2825.30.0050	--	--	--	--	--	--	100,000	65,500	2,470,000
Vanadium chlorides	2827.39.1000	36,900	35,100	611,000	--	--	--	98,100	92,700	3,570,000
Vanadium chloride oxide and chloride hydroxide	2827.49.1000	89,500	55,800	74,700	89,500	55,800	74,700	515,000	321,000	448,000
Vanadium sulfates	2833.29.3000	2,350	1,470	14,100	--	--	--	2,450	1,570	17,100
Vanadates	2841.90.1000	8	5	2,320	908	605	20,300	1,200	797	34,700
Hydrides and nitrides of vanadium	2850.00.2000	19,700	15,700	122,000	43,600	34,900	272,000	146,000	117,000	1,050,000
Ferrovandium	7202.92.0000	218,000	174,000	10,200,000	155,000	119,000	4,410,000	1,830,000	1,390,000	62,500,000
Vanadium metal, including waste and scrap	8112.92.7000	137	115	8,240	27	23	10,200	20,400	19,800	1,110,000
Vanadium and articles thereof ⁶	8112.99.2000	36,000	23,400	1,780,000	18,200	11,700	779,000	279,000	181,000	13,500,000
Total		630,000	XX	21,100,000	630,000	XX	13,900,000	5,420,000	XX	145,000,000

XX Not applicable. -- Zero.

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

²Harmonized Tariff Schedule of the United States.

³Data are in kilograms of vanadium pentoxide.

⁴U.S. Census Bureau has suppressed quantity data for some months; not included in "Total."

⁵Includes U.S. Geological Survey estimates.

⁶Aluminum-vanadium master alloy consisting of 35% aluminum and 64.5% vanadium.

Source: U.S. Census Bureau.

TABLE 2
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		2023					
		June		July		January–July	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:	HTS ³ codes						
Vanadium ores and concentrates	2615.90.6090						
Canada		--	--	40,700	24,400 ⁴	201,000	110,000 ⁴
Mexico		562	338 ⁴	511	306 ⁴	636,000	382,000 ⁴
Other [1 country and (or) locality]		--	--	--	--	9	3 ⁴
Total		562	338 ⁴	41,200	24,700 ⁴	837,000	491,000 ⁴
Vanadium pentoxide (anhydride) ⁵	2825.30.0010						
Brazil		180,000	171,000	200,000	191,000	659,000	630,000
Germany		10,000	10,000	10,900	6,210	78,700	60,100 ⁵
South Africa		36,400	36,100	71,000	61,700	825,000	507,000
Other [3 countries and (or) localities]		--	--	--	--	27,300	26,300 ⁵
Total		226,000	217,000	282,000	259,000	1,590,000	1,220,000 ⁵
Other oxides and hydroxides of vanadium:	2825.30.0050						
Brazil		--	--	--	--	40,000	26,000
South Africa		--	--	--	--	60,000	39,500
Total		--	--	--	--	100,000	65,500
Ferrovandium	7202.92.0000						
Austria		144,000	115,000	24,000	19,200	628,000	502,000
Canada		74,000	59,100	111,000	89,100	904,000	728,000
Latvia		--	--	20,000	10,200	92,000	51,900
Other [1 country and (or) locality]		--	--	--	--	210,000	107,000
Total		218,000	174,000	155,000	119,000	1,830,000	1,390,000
Exports:	Schedule B ³ codes						
Vanadium ores and concentrates	2615.90.6090						
Canada		1,830	NA	--	--	8,120	NA
Other [1 country and (or) locality]		--	--	--	--	519	NA
Total		1,830	XX	--	--	8,640	XX
Vanadium pentoxide (anhydride) ⁶	2825.30.0010						
Australia		NA	21	--	--	NA	21
Other [1 country and (or) locality]		--	--	--	--	NA	1,640
Total		XX	21	--	--	XX	1,660
Other oxides and hydroxides of vanadium:	2825.30.0050						
Germany		--	--	NA	433	NA	433
Other [4 countries and (or) localities]		--	--	--	--	NA	113,000
Total		--	--	XX	433	XX	113,000
Ferrovandium	7202.92.0000						
Canada		--	--	12,300	9,200	33,500	25,100
Mexico		68	51	408	200	11,400	6,960
Other [4 countries and (or) localities]		33,000 ^r	21,900 ^r	--	--	117,000	85,000
Total		33,100	22,000	12,700	9,400	162,000	117,000

^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 leading countries and (or) localities in July.

³Harmonized Tariff Schedule of the United States are imports and Schedule B of the United States are exports.

⁴Data are kilograms of vanadium pentoxide.

⁵Includes U.S. Geological Survey estimates.

⁶May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 3
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		2023					
		June		July		January–July	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption:	HTS ³ codes						
Slag, from the manufacture of iron and steel	2619.00.9000						
Canada		1,340,000	NA	1,050,000	NA	9,180,000	NA
Mexico		92,000	NA	65,200	NA	495,000	NA
Turkey		146,000	NA	730,000	NA	877,000	NA
Other [2 countries and (or) localities]		--	--	--	--	11,300	NA
Total		1,570,000	XX	1,850,000	XX	10,600,000	XX
Vanadium sulfates, China	2833.29.3000	2,350	1,470	--	--	2,450	1,570
Vanadates	2841.90.1000						
United Kingdom		--	--	908	605	908	605
Other [2 countries and (or) localities]		8 ^r	5 ^r	--	--	288	192
Total		8	5	908	605	1,200	797
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
China		36,100	23,500	18,100	11,700	278,000	180,000
France		--	--	27	23	27	23
Mexico		--	--	53	53	259	259
Other [7 countries and (or) localities]		1 ^r	1 ^r	--	--	20,800	20,300
Total		36,100	23,500	18,200	11,800	299,000	201,000
Exports:	Schedule B ³ codes						
Vanadium bearing ash and residues	2620.50.0000, 2620.99.1000						
Austria		--	--	61,500	NA	81,200	NA
France		195,000	NA	110,000	NA	630,000	NA
Italy		--	--	19,500	NA	38,900	NA
Mexico		7,060	NA	11,700	NA	47,700	NA
Other [4 countries and (or) localities]		14,700 ^r	NA	--	--	254,000	NA
Total		216,000	XX	203,000	XX	1,050,000	XX
Hydrides and nitrides of vanadium	2850.00.2000						
Germany		7,310	5,870	29,600	23,800	74,400	60,100
Ireland		--	--	5,260	4,150	9,840	7,770
South Africa		12,400	9,790	8,220	6,500	47,400	37,500
Sweden		--	--	450	450	2,200	2,140
United Kingdom		--	--	20	20	20	20
Other [4 countries and (or) localities]		--	--	--	--	12,400	9,790
Total		19,700	15,700	43,600	34,900	146,000	117,000
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy	8112.92.7000, 8112.99.2000						
France		1,220	NA	622	NA	5,400	NA
Japan		--	--	31,300	NA	49,700	NA
United Kingdom		--	--	795	NA	22,200	NA
Other [3 countries and (or) localities]		2,500 ^r	NA	--	--	2,570	NA
Total		3,720	XX	32,700	XX	79,900	XX

^rRevised. NA Not available. XX Not applicable. -- Zero.

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³Harmonized Tariff Schedule of the United States are imports and Schedule B of the United States are exports.

Source: U.S. Census Bureau.