

Mineral Industry Surveys

For information, contact:

Désirée E. Polyak, Vanadium Commodity Specialist
 National Minerals Information Center
 Telephone: (703) 648-4909
 Email: dpolyak@usgs.gov

Darlene V. Thompson (Data)
 Telephone: (703) 648-7797
 Email: dvthompson@usgs.gov

Internet: <https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys>

VANADIUM IN JANUARY 2024

The amount of vanadium in U.S. imports of select vanadium products on a gross weight basis, excluding vanadium bearing ash and residues, in January 2024, was 20% less than the previous month and 35% less than January 2023 (table 1). In January 2024, the leading import sources for vanadium pentoxide (V₂O₅), were South Africa, Brazil, and Taiwan in descending order of gross weight quantity. In January 2024, the leading import sources for ferrovanadium (FeV) were Canada, Austria, and Japan, in descending order of gross weight quantity (table 2).

V₂O₅ content, ranged from \$6.000 to \$6.5000 per pound in January 2024 compared with \$5.200 to \$6.200 per pound in December 2023 (fig. 1).

Industry News

Australian Vanadium Ltd. (AVL) completed construction of its vanadium electrolyte manufacturing facility in Perth, Western Australia, Australia, in December 2023. The facility was designed to produce up to 33 megawatts per year of high purity electrolyte for vanadium redox flow batteries. Construction of the facility, completed by Primero Group Ltd. (a subsidiary of NRW Holdings), was supported by a grant from the Government of Australia. AVL used electrolyte manufacturing technology licensed from US Vanadium LLC (USV). Initially, the V₂O₅ used for the electrolyte manufacturing facility was expected to be sourced from USV until supply from AVL’s Australian Vanadium Project in Western Australia was complete. The vanadium electrolyte facility was expected to be completed in early 2024 (Australian Vanadium Ltd., 2023, p. 1–2).

Reference Cited

Australian Vanadium Ltd., 2023, Vanadium electrolyte facility construction complete: Perth, Western Australia, Australia, Australia Vanadium Ltd., December 15, 7 p. (Accessed March 26, 2024, at <https://app.sharelinktechnologies.com/announcement/asx/481ba5d324be35a82b1e3b2a22cb43c2>.)

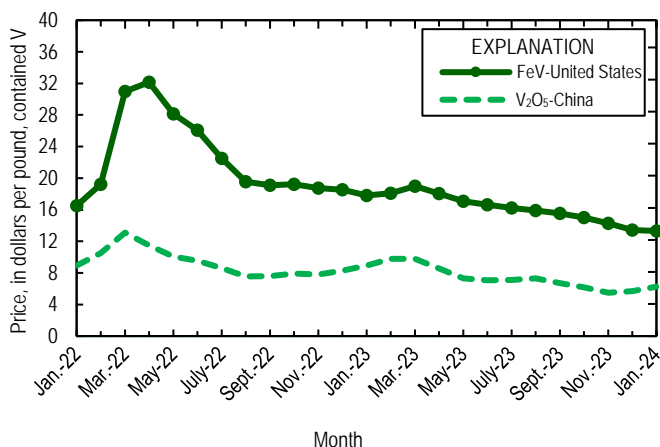


Figure 1. Average monthly prices for ferrovanadium (FeV) in the United States and vanadium pentoxide (V₂O₅) in China from January 2022 through January 2024. Source: Argus Metals International.

Prices

According to Argus Metals International, monthly average U.S. FeV prices, 78–82% vanadium content, ranged from \$12.500 to \$14.000 per pound in January 2024 compared with \$13.000 to \$13.900 per pound in December 2023. Monthly average FeV prices in Europe, 78–82% vanadium content, ranged from \$28.400 to \$30.000 per kilogram of contained vanadium in January 2024 compared with \$24.800 to \$30.000 in December 2023. Monthly average V₂O₅ prices in China, 98%

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/national-minerals-information-center/minerals-information-publication-list-services>.

Table 1. U.S. imports for consumption of vanadium products.

[Data are in kilograms, unless otherwise specified. Data are rounded to no more than three significant digits; may not add to totals shown. —, not applicable. Source U.S. Census Bureau.]

Material	HTS ¹ code	January–December 2023			January 2024		
		Gross weight	Contained weight	Value (thousands)	Gross weight	Contained weight	Value (thousands)
Vanadium ores and concentrates	2615.90.6090	2,200,000	1,200,000 ²	9,770,000	0	0	0
Vanadium bearing ash and residues	2620.40.0030, 2620.99.1000	666	457 ²	26,200,000	(³)	(³)	2,610,000
Chemical compounds							
Vanadium pentoxide (anhydride)	2825.30.0010	3,010,000	2,320,000 ⁴	67,900,000	421,000	313,000	6,830,000
Vanadium oxides and hydroxides, other	2825.30.0050	230,000	151,000	5,280,000	10,000	6,490	210,000
Vanadium chlorides	2827.39.1000	161,000	154,000	5,730,000	0	0	0
Vanadium chloride oxide and chloride hydroxide	2827.49.1000	582,000	363,000	504,000	0	0	0
Vanadium sulfates	2833.29.3000	2,650	1,690	27,500	0	0	0
Vanadates	2841.90.1000	39,800	28,900	783,000	1,010	625	24,500
Hydrides and nitrides of vanadium	2850.00.2000	306,000	245,000	2,010,000	62,800	50,600	445,000
Ferrovandium	7202.92.0000	2,980,000	2,280,000	98,500,000	224,000	158,000	5,990,000
Vanadium metal, including waste and scrap	8112.92.7000	20,800	20,000	1,220,000	0	0	0
Vanadium and articles thereof ⁵	8112.99.2000	336,000	221,000	15,700,000	2,630	1,810	101,000
Total	—	9,870,000	—	234,000,000	722,000	—	16,200,000

¹Harmonized Tariff Schedule of the United States.

²Data are in kilograms of vanadium pentoxide.

³U.S. Census Bureau has suppressed quantity data for some months; not included in “Total.”

⁴Includes U.S. Geological Survey estimates.

⁵Aluminum-vanadium master alloy consisting of 35% aluminum and 64.5% vanadium.

TABLE 2. U.S. imports and exports of ferrovandium, other oxides and hydroxides of vanadium and vanadium pentoxide (anhydride).

[Data are rounded to no more than three significant digits; may not add to totals shown. Presentation of monthly data is based on the quantities (gross weight or contained weight) of the five leading countries or localities in January. Revised data are marked with a superscript "r", NA, not available, —, not applicable. Source: U.S. Census Bureau.]

Country or locality	HTS ¹ code or Schedule B number ²	January–December 2023		December 2023		January 2024	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption							
Vanadium ores and concentrates							
Canada		1,430,000	743,000 ³	416,000	193,000 ³	0	0
China		9	3 ³	0	0	0	0
Mexico	2615.90.6090	767,000	460,000 ³	1,590	953 ³	0	0
Total		2,200,000	1200000 ³	418,000	194,000 ³	0	0
Vanadium pentoxide (anhydride)							
Brazil		1,540,000	1,350,000	220,000	211,000	180,000	154,000
Germany		78,700	60,100	0	0	5,000	2,860
South Africa		1,300,000	820,000	29,400	29,200	217,000	137,000
Taiwan	2825.30.0010	78,300	78,300	0	0	19,800	19,800
Other [3 countries and (or) localities]		11,800 ^r	9,050 ^{r,4}	0	0	0	0
Total		3,010,000	2320000 ⁴	249,000	240,000	421,000	313,000
Other oxides and hydroxides of vanadium							
Brazil		110,000	71,400	0	0	10,000	6,490
Other [1 country and (or) locality]	2825.30.0050	120,000 ^r	79,400 ^r	20,000 ^r	13,300 ^r	0	0
Total		230,000	151,000	20,000	13,300	10,000	6,490
Ferrovanadium							
Austria		1,140,000	911,000	34,000	27,000	30,000	18,800
Canada		1,470,000	1,170,000	125,000	97,700	158,000	122,000
Japan		251,000	128,000	20,000	10,200	20,000	10,200
Latvia	7202.92.0000	122,000	65,700	0	0	15,300	6,250
South Africa		1,450	1,180	0	0	1,000	813
Total		2,980,000	2,280,000	179,000	135,000	224,000	158,000
Exports							
Vanadium ores and concentrates							
Latvia		3,500	NA	0	0	3,060	NA
Other [3 countries and (or) localities]	2615.90.6090	143,000	NA	0	0	0	0
Total		147,000	—	0	0	3,060	—
Vanadium pentoxide (anhydride) ⁵							
India		NA	3,680	0	0	NA	7,680
Netherlands		0	0	0	0	NA	1,280
Other [4 countries and (or) localities]	2825.30.0010	NA	24,500 ^r	NA	10,100 ^r	0	0
Total		—	28,200	—	10,100	—	8,960
Other oxides and hydroxides of vanadium							
Canada		NA	22,600	NA	1,360	NA	31,900
Other [6 countries and (or) localities]	2825.30.0050	NA	114,000	0	0	0	0
Total		NA	136,000	—	1,360	—	31,900
Ferrovanadium							
Canada		34,800	26,100	0	0	12,800	9,610
Mexico		11,500	7,020	0	0	68	51
Other [5 countries and (or) localities]	7202.92.0000	178,000 ^r	118,000 ^r	0	0	0	0
Total		224,000	151,000	0	0	12,900	9,660

¹Harmonized Tariff Schedule of the United States.²Imports for consumption are represented by HTS codes. Exports are represented by Schedule B codes.³Data are kilograms of vanadium pentoxide.⁴Includes U.S. Geological Survey estimates.⁵May include catalysts containing vanadium pentoxide.

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.

[Data are in kilograms, unless otherwise specified. [Data are rounded to no more than three significant digits; may not add to totals shown. Presentation of monthly data is based on the quantities (gross weight or contained weight) of the leading countries and (or) localities in January. Data are in kilograms, gross and contained weight. Revised data are marked with a superscript "r", NA, not available, —, not applicable. Source: U.S. Census Bureau.]

Country or locality	HTS ¹ code or Schedule B number ²	January–December 2023		December 2023		January 2024	
		Gross weight	Contained weight	Gross weight	Contained weight	Gross weight	Contained weight
Imports for consumption							
Slag, from the manufacture of iron and steel							
Canada		19,200,000	NA	1,600,000	NA	1,840,000	NA
Iceland		0	0	0	0	3,010,000	NA
Mexico		730,000	NA	16,600	NA	70,700	NA
Turkey	2619.00.9000	2,220,000	NA	0	0	463,000	NA
Other [3 countries and (or) localities]		22,700 ^r	NA	0	0	0	0
Total		22,200,000	—	1,620,000	—	5,380,000	—
Vanadium sulfates							
China	2833.29.3000	2,650	1,690	0	0	0	0
Vanadates							
Japan		280	187	0	0	104	20
United Kingdom		908	605	0	0	907	605
Other [4 countries and (or) localities]	2841.90.1000	38,600 ^r	28,100 ^r	0	0	0	0
Total		39,800	28,900	0	0	1,010	625
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy							
Belgium		2	1	0	0	2,360	1,540
China		334,000	219,000	0	0	68	68
Mexico	8112.92.7000,	439	439	0	0	205	205
United Kingdom	8112.99.2000	10	10	0	0	1	1
Other [6 countries and (or) localities]		22,300 ^r	21,400 ^r	0	0	0	0
Total		357,000	241,000	0	0	2,630	1,810
Exports							
Vanadium bearing ash and residues							
France		860,000	NA	135,000	NA	115,000	NA
Germany	2620.50.0000,	140,000	NA	63,700	NA	117,000	NA
Other [6 countries and (or) localities]	2620.99.1000	531,000 ^r	NA	20,000	NA	0	NA
Total		1,530,000	—	219,000	—	231,000	—
Hydrides and nitrides of vanadium							
Germany		165,000	133,000	940	930	56,300	45,300
South Africa		117,000	92,100	21,400	16,900	6,020	4,760
Sweden	2850.00.2000	2,430	2,320	0	0	473	473
Other [6 countries and (or) localities]		22,300 ^r	17,600 ^r	0	0	0	--
Total		306,000	245,000	22,300	17,800	62,800	50,600
Vanadium metal, including waste and scrap and aluminum-vanadium master alloy							
France		6,540	NA	530	NA	0	0
Japan	8112.92.7000,	102,000	NA	19,500	NA	0	0
Other [7 countries and (or) localities]	8112.99.2000	26,800	NA	0	0	0	0
Total		135,000	—	20,000	—	0	0

¹Harmonized Tariff Schedule of the United States.

²Imports for consumption are represented by HTS codes. Exports are represented by Schedule B codes.