

Mineral Industry Surveys

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VANADIUM IN AUGUST 2003

Reported domestic consumption of vanadium in August 2003 was slightly less than that of the previous month and was slightly more than that of August 2002, according to the U.S. Geological Survey. Year-to-date consumption of vanadium from January through August was about 6% less than during the same period in 2002. Consumer stocks of vanadium, in all forms, were 209 metric tons (t) at the beginning of 2003 and 215 t at the end of August.

According to Ryan's Notes (2003b), the range for U.S. ferrovanadium (FeV) prices during August was \$5.344 to \$5.500 per pound of vanadium content, as compared with \$5.113 to \$5.500 in July. European FeV ranged from \$10.556 to \$10.767 per kilogram of vanadium content in August as compared with \$10.038 to \$10.381 in July. In August, vanadium pentoxide prices ranged from \$1.922 to \$2.100 per pound, as compared with \$1.963 to \$2.225 in July.

Prices of FeV were marginally higher in August with the price range being narrower and the spread between FeV and vanadium pentoxide prices increasing. In the United States, FeV spot sales at the end of August were reported in a narrow range of \$5.40 to \$5.50 per pound, and in Europe, a German mill reportedly purchased FeV at about \$10.50 per kilogram in the first week of August. European traders reported material continued to be in tight supply but demand was also weak.

Japanese traders reported they raised their prices to above \$12 per kilogram by the end of August (Ryan's Notes, 2003a).

Highveld Steel & Vanadium (Highveld) reduced production of structural steel at its Witbank works in June in response to declining consumption of structural sections and hot rolled flat steel. Spending on construction slowed owing to the strong rand and high interest rates in South Africa, and the lower demand led to steel merchants reducing their inventories (Metal Bulletin, 2003).

Highveld commissioned its FeV joint venture with Nippon Denko and Mitsui, South Africa Japan (SAJ) Vanadium, in July. The SAJ Vanadium plant had a stated capacity of 3,500 t/yr of ferrovanadium, although not all production was for export. The first shipment of SAJ Vanadium material arrived in Japan in August (Metal Bulletin Research, 2003).

References Cited

- Metal Bulletin, 2003, Highveld Steel & Vanadium cuts structural steel output: Metal Bulletin, no. 8797, August 11, p. 13.
- Metal Bulletin Research, Ferro-alloys Monthly, 2003, Japanese import prices jump: Metal Bulletin Research, Ferro-alloys Monthly, no. 132, September 1, p. 15.
- Ryan's Notes, 2003a, Truckload sales of FeV were booked: Ryan's Notes, v. 9, no. 34, August 25, p. 4.
- Ryan's Notes, 2003b, [untitled]: Ryan's Notes, v. 9, no. 35, September 1, p. 4.

TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM¹

(Kilograms, contained vanadium)

	2002 ^p		2003			
	Consumption	Stocks	July		August	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	2,790,000	189,000	244,000 ^r	197,000	239,000	202,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	351,000	20,200	25,200	12,200	25,400	12,200
Total	3,140,000	209,000	269,000 ^r	209,000	265,000	215,000

^pPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

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

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

³Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE¹

(Kilograms, contained vanadium)

	2002 ^p	2003		
		July	August	Year to date ²
Steel:				
Carbon	731,000	65,200	61,200	515,000
High-strength low-alloy	900,000	80,400	79,900	615,000
Stainless and heat-resisting	37,500	2,170	2,290	17,700
Full alloy	748,000	75,700	69,100	539,000
Tool	270,000	17,200	20,600	171,000
Total steel	2,690,000	241,000	233,000	1,860,000
Superalloys	12,400	956	1,670	9,010
Miscellaneous and unspecified ³	382,000	27,900 ^r	29,900	154,000
Total consumption	3,080,000	269,000 ^r	265,000	2,020,000

^pPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

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

²Includes revisions to prior month's data.

³Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND VANADIUM
METAL, INCLUDING WASTE AND SCRAP¹

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
2002	97,500	\$206,000	32,300	\$1,270,000
2003:				
May	16,500	31,600	7,500	108,000
June	57,700	87,000	14,200	231,000
July:				
Canada	31,800	62,100	--	--
Germany	--	--	18,000	219,000
Total	31,800	62,100	18,000	219,000
Year to date	173,000	288,000	56,000	931,000
Exports:				
2002	529,000	11,700,000	49,200	898,000
2003:				
May	470,000	1,070,000	26,700	444,000
June	699,000	1,530,000	57,400	337,000
July:				
Australia	178	5,230	--	--
Canada	401,000	697,000	--	--
India	6,600	40,100	--	--
Japan	8,400	49,100	1,120	18,100
Malaysia	894	11,600	--	--
Mexico	637,000	1,090,000	--	--
Norway	4,750	39,200	--	--
Ukraine	--	--	962	11,200
United Kingdom	2,150	19,800	--	--
Total	1,060,000	1,950,000	2,080	29,300
Year to date	2,590,000	8,680,000	186,000	3,540,000

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND
OTHER OXIDES AND HYDROXIDES OF VANADIUM¹

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) ²		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
2002	2,520,000	\$19,400,000	406,000	\$1,990,000	42,300	\$560,000
2003:						
May	15,500	190,000	81,000	558,000	6,930	117,000
June	126,000	1,460,000	70,500	580,000	4,030	68,200
July:						
Canada	26,100	161,000	--	--	--	--
Germany	--	--	560	30,200	--	--
Mexico	--	--	25,900	431,000	--	--
South Africa	15,000	183,000	39,800	248,000	--	--
Switzerland	47,200	528,000	--	--	--	--
Total	88,300	871,000	66,200	709,000	--	--
Year to date	528,000	5,250,000	386,000	2,890,000	17,300	313,000
Exports:						
2002	142,000	1,550,000	91,200	568,000	203,000	1,700,000
2003:						
May	15,600	249,000	17,800	170,000	16,900	214,000
June	18,300	262,000	12,700	124,000	39,400	373,000
July:						
Canada	3,060	45,900	--	--	13,500	183,000
China	--	--	5,280	50,200	--	--
India	--	--	--	--	1,360	19,800
Japan	--	--	7,640	72,500	--	--
Mexico	18,500	248,000	--	--	--	--
South Africa	--	--	--	--	64,200	233,000
Spain	--	--	10,000	64,500	--	--
Trinidad and Tobago	--	--	3,000	29,800	--	--
Total	21,500	294,000	25,900	217,000	79,100	436,000
Year to date	280,000	3,790,000	170,000	1,450,000	193,000	1,610,000

-- Zero.

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

²May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG¹

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity	Value
2002	3,830,000	\$520,000	10,300,000	\$1,560,000	243,000,000	\$19,900,000
2003:						
May	798,000	132,000	675,000	122,000	906,000	337,000
June	--	--	1,630,000	399,000	83,200,000	1,110,000
July:						
Canada	14,800	2,010	1,080,000	214,000	44,900,000	512,000
United Kingdom	--	--	243,000	79,800	--	--
Total	14,800	2,010	1,320,000	294,000	44,900,000	512,000
Year to date	1,070,000	200,000	6,620,000	1,440,000	136,000,000	2,460,000

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS¹

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
2002	14,100	\$390,000	48,100	\$567,000
2003:				
May	--	--	6,480	68,200
June	--	--	2,700	70,400
July:				
Year to date	--	--	22,300	295,000

-- Zero.

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

Source: U.S. Census Bureau.