

# Mineral Industry Surveys

---

**For information, contact:**

Désirée E. Polyak, Vanadium Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4909, Fax: (703) 648-7757  
Email: dpolyak@usgs.gov

Benjamin N. Bryden (Data)  
Telephone: (703) 648-7953  
Fax: (703) 648-7975  
Email: bbryden@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## VANADIUM IN SEPTEMBER 2014

Reported domestic consumption of vanadium in September 2014 was slightly more than that of the previous month, and was slightly more than that of September 2013. Consumer stocks of vanadium, in all forms, were 166 metric tons (t) at yearend 2013 and 160 t at the end of September.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$12.606 to \$13.144 per pound of vanadium content in September, compared with \$12.289 to \$12.722 in August. European FeV prices ranged from \$25.406 to \$25.900 per kilogram in September, compared with \$25.367 to \$25.778 in August. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices ranged from \$5.300 to \$5.400 per pound in September, as compared with \$5.456 to \$5.867 per pound in August.

EVRAZ Highveld Steel and Vanadium Ltd. (Moscow, Russia) announced that it produced 26,296 t of vanadium slag containing 3,332 t of vanadium for the first 6 months of 2014, compared to the 26,283 t of vanadium slag containing 3,539 t of

vanadium during the same period of 2013 (EVRAZ Highveld Steel and Vanadium Ltd., 2014).

*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 <http://minerals.usgs.gov/minerals/>.*

### Reference Cited

EVRAZ Highveld Steel and Vanadium Ltd., 2014, Group unaudited results for the six months ended 30 June 2014: Moscow, Russia, EVRAZ Highveld Steel and Vanadium Ltd., September 29, 2 p. (Accessed November 19, 2014, at [http://www.evrazhighveld.co.za/intermin\\_reports/Evraz\\_Highveld\\_Interim\\_Results\\_30\\_June\\_2014.pdf](http://www.evrazhighveld.co.za/intermin_reports/Evraz_Highveld_Interim_Results_30_June_2014.pdf).)

TABLE 1  
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM<sup>1</sup>

(Kilograms, contained vanadium)

	2013		2014					
	January–December		August		September		January–September	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium <sup>2</sup>	2,810,000	93,300	248,000	94,900 <sup>r</sup>	254,000	90,000	2,140,000	90,000
Vanadium-aluminum alloy and other forms <sup>3</sup>	812,000	72,600	66,200	70,100	65,900	70,100	603,000	70,100
Total	3,620,000	166,000	314,000 <sup>r</sup>	165,000 <sup>r</sup>	320,000	160,000	2,750,000	160,000

<sup>r</sup>Revised.

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

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

<sup>3</sup>Includes 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 USE<sup>1</sup>

(Kilograms, contained vanadium)

	2013		2014	
	January–December	August	September	January–September
Steel:				
Carbon	W	44,400 <sup>r</sup>	51,200	397,000
Full alloy	1,430,000	126,000	126,000	1,100,000
High-strength low-alloy	W	W	W	W
Stainless and heat resisting	59,200	4,930	4,950	44,400
Tool	W	W	W	W
Total steel	1,490,000	175,000 <sup>r</sup>	182,000	1,540,000
Superalloys	2,540	W	W	1,210
Miscellaneous and unspecified <sup>2</sup>	W	W	W	W
Total	3,620,000	314,000 <sup>r</sup>	320,000	2,750,000

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

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

<sup>2</sup>Includes 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 ALLOYS AND VANADIUM  
METAL, INCLUDING WASTE AND SCRAP<sup>1</sup>

(Kilograms, gross weight)

	Aluminum-vanadium master alloy <sup>2</sup>		Vanadium metal, including waste and scrap <sup>3</sup>	
	Quantity	Value	Quantity	Value
<b>Imports for consumption:</b>				
2013	169,000	\$4,660,000	35,300	\$1,310,000
2014:				
August	42,200	929,000	--	--
September:				
China	19,900	389,000	34,500	742,000
Germany	101	72,800	4,000	115,000
Total	20,000	462,000	38,500	858,000
January–September	393,000	8,950,000	167,000	3,840,000
<b>Exports:</b>				
2013	347,000	9,800,000	57,500	1,700,000
2014:				
August	52,800	1,320,000	--	--
September:				
Australia	1,000	76,400	--	--
Japan	--	--	5,000	222,000
Malaysia	--	--	101	24,300
Total	1,000	76,400	5,100	246,000
January–September	312,000	9,110,000	11,900	643,000

-- Zero.

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

<sup>2</sup>Aluminum-vanadium master alloy consisting of 35% aluminum and 64.5% vanadium. Includes Harmonized Tariff Schedule code 8112.99.2000.

<sup>3</sup>Vanadium metal, including waste and scrap (HTS 8112.92.7000)

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND  
OTHER OXIDES AND HYDROXIDES OF VANADIUM<sup>1</sup>

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) <sup>2</sup>		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Imports for consumption:</b>						
2013	3,710,000	\$89,800,000	2,040,000	\$29,900,000	205,000	\$2,560,000
2014:						
August	269,000	7,000,000	354,000	4,470,000	21,600	195,000
September:						
Australia	8,720	227,000	--	--	--	--
Austria	49,300	1,690,000	--	--	--	--
Canada	46,300	1,360,000	--	--	--	--
China	--	--	20,100	460,000	--	--
Czech Republic	--	2,670,000	--	--	--	--
Japan	9,090	208,000	--	--	--	--
Korea, Republic of	49,700	1,250,000	--	--	--	--
Russia	16,200	402,000	132,000	1,160,000	--	--
South Africa	--	--	40,900	870,000	--	--
United Kingdom	--	--	17	2,610	--	--
Total	179,000	7,800,000	193,000	2,490,000	--	--
January–September	2,700,000	71,600,000	2,430,000	33,100,000	82,600	1,460,000
<b>Exports:</b>						
2013	395,000	8,790,000	89,600	1,340,000	448,000	4,850,000
2014:						
August	22,000	617,000	22,600	325,000	22,400	340,000
September:						
Canada	33,700	596,000	--	--	--	--
Estonia	--	--	20,000	252,000	--	--
Germany	--	--	120	8,150	--	--
Italy	--	--	14,400	227,000	--	--
Japan	--	--	--	--	960	12,000
Korea, Republic of	1,900	72,000	--	--	--	--
Netherlands	--	--	5,000	66,000	15,000	233,000
Trinidad and Tobago	--	--	--	--	19,500	135,000
Total	35,600	668,000	39,500	553,000	35,500	380,000
January–September	267,000	5,650,000	144,000	2,160,000	263,000	3,490,000

-- Zero.

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

<sup>2</sup>May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG<sup>1</sup>

(Kilograms, contained vanadium pentoxide, unless otherwise specified)

	Ash and residues <sup>2</sup>		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity (gross weight)	Value
	2013	4,190,000	\$22,500,000	66,100,000
2014:				
August	435,000	2,110,000	24,200,000	3,290,000
September:				
Canada	477,000	2,240,000	24,600,000	846,000
Mexico	--	--	18,000	7,110
Russia	203,000	2,270,000	--	--
Total	680,000	4,510,000	24,600,000	853,000
January–September	4,600,000	28,600,000	109,000,000	7,930,000

-- Zero.

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

<sup>2</sup>Includes Harmonized Tariff Schedule code 2620.40.0030 and 2620.99.1000.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS<sup>1</sup>

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
2013	29,500	\$306,000	276,000	\$5,700,000
2014:				
August	50	2,780	22,000	375,000
September:				
China	131	10,600	--	--
Japan	50	2,790	--	--
Spain	--	--	134	28,100
Total	181	13,400	134	28,100
January–September	18,600	216,000	166,000	3,500,000

-- Zero.

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

Source: U.S. Census Bureau.