

Mineral Industry Surveys

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VANADIUM IN SEPTEMBER 2012

Reported domestic consumption of vanadium in September 2012 was nearly unchanged compared with that of the previous month, and was slightly less than that of September 2011. Consumer stocks of vanadium, in all forms, were 185 metric tons (t) at the beginning of 2012 and 247 t at the end of September.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$13.700 to \$15.725 per pound of vanadium content in September, compared with \$13.567 to \$16.144 in August. European FeV prices ranged from \$24.625 to \$25.625 per kilogram in September, compared with \$23.400 to \$23.822 in August. Vanadium pentoxide (V₂O₅) prices ranged from \$6.500 to \$7.000 per pound in both August and September.

Panzhihua Iron and Steel Group (Pangang), China's leading vanadium and titanium producer, set its annual production target at 28,000 t for all vanadium products. In March, Pangang commissioned its 4,000-metric-ton-per-year vanadium-nitrogen

alloy plant. According to the company, this was the largest vanadium-nitrogen alloy plant in the world. In April, Pangang put its new FeV and vanadium-bearing steel plant in Xichang, Sichuan Province, on trial production. With an annual capacity of 18,800 t FeV, the plant used vanadium residues from its vanadium-bearing steel production to produce FeV (Metal-Pages, 2012).

Reference Cited

Metal-Pages, 2012, China's Pangang sets annual targets for vanadium and titanium production: Metal-Pages, July 24. (Accessed December 5, 2012, via <http://www.metal-pages.com/>.)

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

(Kilograms, contained vanadium)

	2011		2012					
	Consumption	Stocks	August		September		January–September	
			Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	4,240,000	122,000	328,000 ^r	167,000 ^r	328,000	163,000	3,000,000	163,000
Vanadium-aluminum alloy and other forms ³	882,000	63,300	69,500	60,900	70,700	84,700	635,000	84,700
Total	5,120,000	185,000	397,000 ^r	228,000 ^r	398,000	247,000	3,640,000	247,000

^rRevised.

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 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)

	2011	2012		
		August	September	January–September
Steel:				
Carbon	677,000	51,800 ^r	49,300	505,000
Full alloy	2,120,000	172,000	174,000	1,560,000
High-strength low-alloy	W	W	W	W
Stainless and heat resisting	61,500	5,120	5,110	46,200
Tool	W	W	W	W
Total steel	2,860,000	229,000 ^r	229,000	2,110,000
Superalloys	15,300	394 ^r	478	4,050
Miscellaneous and unspecified ²	W	W	W	W
Total	5,120,000	397,000 ^r	398,000	3,640,000

^rRevised. 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.

²Includes 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:				
2011	278,000	\$1,210,000	43,900	\$1,930,000
2012:				
August	--	--	9,120	255,000
September, Germany	--	--	22,500	743,000
January–September	90,300	611,000	114,000	3,600,000
Exports:				
2011	920,000	6,930,000	102,000	3,340,000
2012:				
August	1,880,000	4,750,000	76	2,940
September:				
Canada	165,000	464,000	--	--
Hong Kong	878	26,300	--	--
Israel	1,360	22,500	--	--
Japan	7,700	203,000	--	--
Korea, Republic of	2,880	56,500	--	--
Mexico	1,560,000	3,870,000	--	--
Nigeria	30,400	142,000	--	--
Total	1,770,000	4,780,000	--	--
January–September	17,300,000	47,700,000	10,900	307,000

-- 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:						
2011	2,220,000	\$64,600,000	2,800,000	\$45,800,000	886,000	\$17,400,000
2012:						
August	335,000	8,560,000	202,000	3,370,000	28,300	470,000
September:						
Austria	--	--	--	--	8,370	188,000
Canada	84,800	2,250,000	--	--	--	--
China	--	--	32,200	403,000	--	--
Czech Republic	211,000	5,200,000	--	--	--	--
Korea, Republic of	60,200	1,580,000	--	--	--	--
South Africa	--	--	55,800	758,000	--	--
Taiwan	--	--	10,000	230,000	--	--
Total	356,000	9,030,000	98,000	1,390,000	8,370	188,000
January–September	3,260,000	84,700,000	1,170,000	20,300,000	888,000	12,400,000
Exports:						
2011	314,000	9,970,000	88,700	1,410,000	254,000	2,390,000
2012:						
August	8,550	264,000	--	--	81,800	804,000
September:						
Austria	--	--	--	--	14,400	128,000
Canada	--	--	--	--	348	7,970
Italy	--	--	14,400	249,000	--	--
Mexico	181	5,830	--	--	924	8,220
Trinidad and Tobago	--	--	--	--	9,690	67,600
Total	181	5,830	14,400	249,000	25,300	212,000
January–September	316,000	7,880,000	36,600	696,000	213,000	2,440,000

-- 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, unless otherwise specified)

	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 (gross weight)	Value
2011	1,420,000	\$1,570,000	89,600	\$479,000	189,000,000	\$5,170,000
2012:						
August	182,000	691,000	--	--	24,400,000	2,350,000
September:						
Austria	--	--	--	--	7,440	106,000
Canada	85,600	286,000	89,400	11,900	93,600	56,900
Mexico	--	--	--	--	3,440	3,440
Russia	--	--	--	--	1,970	2,500
South Africa	--	--	--	--	20,000	276,000
Total	85,600	286,000	89,400	11,900	126,000	445,000
January–September	1,220,000	3,660,000	139,000	138,000	107,000,000	12,300,000

-- 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
2011	42,200	\$738,000	303,000	\$7,400,000
2012:				
August	--	--	1,160	189,000
September, China	54	10,000	6,630	204,000
January–September	19,300	255,000	224,000	5,120,000

-- Zero.

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

Source: U.S. Census Bureau.