


Ferrovandium (FeV)

	Price range in 2020 for Ferrovandium	20,11 €/kg V – 26,40 €/kg V 22,60 \$/kg V – 29,09 \$/kg V	Get access to the current market prices
	Formula	FeV	
	CAS no.	12604-58-9	
	Description	Ferrovandium is an alloy of iron with 60 to 80% vanadium. FeV has a deoxidizing effect on steel. In addition, vanadium improves the alloy structure of steels, particularly by increasing hardness, toughness and resistance to impact and impact. FeV is obtained either by aluminothermic reduction of a mixture of vanadium oxide and scrap iron or by reduction of a vanadium-iron mixture with coal. It is used as an alloy additive for steels in proportions of <0.2% for structural steels, up to 0.5% for tool steels and up to 5% for high-speed steels.	

The above price data are based on real data from the metalshub platform.

Physical Properties

General	The melting point and density of ferrovandium depends on its vanadium content			
Abrasion	good resistance to abrasion			
Corrosion	good resistance to corrosion			
Gravity	high specific gravity			
Magnetism	high magnetism			
	FeV 60		FeV 80	
Density	~7,0 g/cm ³	0,253 lb/in ³	~6,4 g/cm ³	0,231 lb/in ³
Melting point	1450-1600 °C	2642-2912 °F	1680-1800 °C	3056-3272 °F

Source: Volkert, G. & Frank, K.-D.: Die Metallurgie der Ferrolegierungen

Actually requested materials based on metalshub transactions

Material name		Size [mm]	Composition, as percentages by mass						Packaging	Pallet
			V	Si	Al	C	S	P		
FeV 75-85	Min.	5	75	-	-	-	-	-	1 mt big bags	euro pallet
	Max.	50	85	1,5	1,5	0,3	0,05	0,06		

The above data are based on real data from the metalshub platform. These characteristics are the most common ones in metalshub transactions. We will update the data regularly. [12,2020]

The DIN standard of Ferrovandium (DIN 17563)

Material name		Composition, as percentages by mass									
		V ¹⁾	Al	As	C	Cu	Mn	Ni	P	S	Si
FeV40	Min.	35	—	—	—	—	—	—	—	—	—
	Max.	50	4	—	0,3	—	—	—	0,1	0,1	2
FeV60	Min.	50	—	—	—	—	—	—	—	—	—
	Max.	65	2,5	0,06	0,3	0,1	—	—	0,06	0,05	1,5
FeV80	Min.	75	—	—	—	—	—	—	—	—	—
	Max.	85	1,5	0,06	0,3	0,1	0,5	0,15	0,06	0,05	1,5

1) The vanadium content shall not vary by more than 2 % within a consignment.

[Click here for the ASTM standard specification for Ferrovandium \(ASTM A102\)](#)

*Scope 2 emissions (according to greenhouse gas protocol):

Upstream emissions or credits related to procurement/delivery of electricity and steam from site. Upstream emissions of exported by-product gas considering the potential savings in electricity generation.

**Scope 3 emissions (according to greenhouse gas protocol):

Other upstream emissions or credits related to procurement / delivery of pre-processed materials / by-products from site.

Interesting facts

\$/Kg
or
\$/lb

Confusingly, the price of vanadium pentoxide is usually quoted in US\$/lb of pentoxide, while the price of ferro-vanadium, which makes up most of vanadium production, is quoted in \$/kg of contained vanadium metal. The iron content is ignored. Although there are short term variations, the prices of the two are usually in lock-step, reflecting the costs of conversion from vanadium pentoxide to ferro-vanadium.

Ferrovanadium toughens the steel making it highly resistant to temperature and corrosion. Apart from being a component of steel, ferrovanadium can also be used as a coating. Nitrated ferrovanadium increases the abrasion resistance of steel by 30-50%.

Ferrovanadium as Coating

Applications

- Ferrovanadium is used in many steel products for different applications ranging from construction alloy steels to micro-alloy steels.
- Ferrovanadium is the best strengthening substance for steel and enhances its tensile strength. Therefore, it is highly applicable in construction, provides required strength for the architectural design
- Other applications of ferrovanadium include rail steels, die steels, heat resisting tool, and other special steels. Such products are used infrastructure including road and railways, in buildings, and production of appliances.
- Owing to excellent structural strength, hardness, and ductile properties, ferrovanadium also has myriad applications in pipelines, automotive, ships, aerospace, and many more.

Risk and Safety Statements

Symbols (GHS)			
Hazard Statements		H319	Causes serious eye irritation.
		H335	May cause respiratory irritation.
		H373	May cause damage to organs through prolonged or repeated exposure
Precautionary Statements	Prevention	P261	Avoid breathing dust / fume / gas / mist / vapors / spray.
		P264	Wash thoroughly after handling.
		P271	Use only outdoors or in a well-ventilated area.
		P280	Wear protective gloves / eye protection / face protection.
	Response	P304+312	IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
		P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present - continue rinsing.
		P314	Get Medical advice / attention if you feel unwell.
		P337+313	If eye irritation persists: Get medical advice / attention.
		P340	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	Storage	P403+233	Store in a well ventilated place. Keep container tightly closed.
		P405	Store locked up
	Disposal	P501	Dispose of contents/container in accordance with local, regional, national, and international regulations.

Source: EVRAZ STRACTOR