

## Improved Strengthening with Nitrovan® Vanadium

This unique alloy strengthens steel more efficiently than ferrovanadium, allowing steelmakers to use less vanadium in high-strength steels and reducing vanadium costs by as much as 40%. Over the past 25 years, cost-conscious steelmakers around the world have saved well over 100 million dollars by using Nitrovan® vanadium.

### Chemistry

	NITROVAN® 12 VANADIUM		NITROVAN® 16 VANADIUM	
	SPECIFICATION	TYPICAL ANALYSIS	SPECIFICATION	TYPICAL ANALYSIS
Vanadium	76-81%	78%	76-81%	77%
Nitrogen	10-14%	12%	14-19%	16%
Carbon	10% max.	7%	6% max.	3.50%
Oxygen	1.5% max.	0.75%	1.5% max.	1.25%
Aluminum	-	0.15%	-	0.15%
Silicon	-	0.35%	-	0.35%
Manganese	-	0.003%	-	0.003%
Iron	-	0.4%	-	0.4%
Sulfur	-	0.15%	-	0.15%
Chromium	-	0.4%	-	0.4%
Copper	-	0.001%	-	0.001%
Phosphorus	-	0.025%	-	0.025%
Calcium	-	0.1%	-	0.1%

### Size and Packaging



#### Packaging:

Strong, Moisture-Resistant Bags Containing  
10 kg or 25 lbs. of Vanadium.  
Bulk Density: 1.4 to 1.6 mt per cu. m



#### Round or Oval Briquets:

Size Range: 100% less than 75 mm  
(3 in.); 5% less than 6 mm (0.25 in.).

Major Axis of Briquet: <45 mm (<1.7 in.)

Briquet Density: 2.5 to 3.0 g per cu. cm