COMETAL

Your Door to Raw Materials & Markets

Ferro Niobium

26		55.845	41		92.90638
Fe	$^5D_4$	1,83	Nb	$^6D_{1/2}$	1,60
Iron			Niobium		
7,874		7,9024	8,57		6,7589
1538		2861	2477		4744
(m) 126		BCC	(m) 146		BCC
[Ar] $3d^6\ 4s^2$			[Kr] $4d^4\ 5s^1$		
+2,3			+3,5		

Description

Ferro Niobium is a Ferro Alloy composed of iron and niobium with an Nb content ranging from 60% to 70%, which defines the quality of the product.

Ferro Niobium is gained by the aluminothermic reduction of niobium pentoxide (Nb_2O_5) from Pyrochlore, a mineral found in alkaline rocks, granitic pegmatites and carbonatites. The aluminothermic reduction is performed in the presence of Iron. After the solidification of the metal some operations of milling and sieving are carried out, thus obtaining the suitable particle size for uses in steel production and foundries.

Properties

PHYSICAL STATE	Metallic solid
COLOUR	Silvered gray
ODOUR	Odourless
MELTING POINT	1900ºC (FeMo 70%)
SPECIFIC GRAVITY	8.0g/cm^3

The product is stable under normal conditions. It may react with acids and alkalis, releasing hydrogen. The dust may ignite when it is suspended in air but a low pressure eliminates any explosion hazard.

Its preparation is not classified as dangerous according to the relevant European regulations, and it is also not classed as a hazardous good for transportation.

Uses

Ferro Niobium is used mainly to increase the strength of the alloys, including:

- The manufacturing of High-Strength special Steels Low-Alloy (HSLA), mainly used in automobiles, pipe fabrication, structural steels and stainless steels resistant to high temperatures.
- The manufacturing of stainless steels.
- The manufacturing of superalloys.
- The increase in weldability, etc.

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