

# Ferro Sulphur

26	55.845	16	32.065
<b>Fe</b>	<sup>5</sup> D <sub>4</sub>	<b>S</b>	<sup>3</sup> P <sub>2</sub>
	1,83		2,58
<b>Iron</b>		<b>Sulfur</b>	
7,874	7,9024	1,96	10,3600
1538	2861	115,21	444,72
(m) 126	BCC	(v) 102	FCO
[Ar] 3d <sup>6</sup> 4s <sup>2</sup>		[Ne] 3s <sup>2</sup> 3p <sup>4</sup>	
+2,3		+2,4,6,-2	

## Description

Ferro Sulphur is a Ferro Alloy composed of iron and sulphur with a sulphur content ranging between 28% and 32%, with this content being what defines the quality of the product.

There are typically two grades according to its sulphur content, between 28% and 32% and between 48% and 50%, as a by-product of the steelmaking process.

## Properties

PHYSICAL STATE	Solid
COLOUR	Yellow-green to gray
ODOUR	Slightly pungent
MELTING POINT	Decomposes first
BOILING POINT	Decomposes first
SPECIFIC GRAVITY	5.2g/cm <sup>3</sup>

Regarding its classification as a hazardous product, it is classified as a skin irritant R38.

It is stable under normal pressure and temperature conditions. However, it should be kept away from heat and ignition sources. Empty containers may present a risk of fire. Contact with moisture, acids and strong oxidizers should be avoided, as well as from flammable materials.

It is not classified as a hazardous good for transportation.

## Uses

Ferro Sulphur is used in metallurgy give the steel or alloy the desired sulphur content. It is used for this purpose instead of elemental sulphur because the low melting point of the sulphur could accumulate on the molten metal surface, causing SO<sub>2</sub> emissions and also a deterioration of its mechanical properties by the formation of a low eutectic melting point in the grain boundaries.

For these purposes it is used in:

- The manufacturing of cast iron: When melted in foundries, the level of residual sulphur is reduced, primarily due to the use of scrap steel and low sulphur content. It has been determined that melting does not respond easily to inoculants if the sulphur level is less than 0.04%. Therefore, it is necessary to raise the sulphur content using Ferro Sulphur to maintain the level in a range from 0.05%-0.12%.
- The manufacturing of alloyed steels: Used as a suitable and economical resulphurizing agent to prevent hydrogen embrittlement and to maintain minimum sulphur content of no less than 0.015%.
- Cutting steel manufacturing: It is used as a resulphurizing agent in the manufacture of this type of steel because it increases machinability.
- Electric furnaces: It has a positive effect, maintaining sulphur content around 0.15% since it enhances the nodular iron formation