MN ALLOYS are mostly used in steelmaking and foundry activities. Some 30 % of the manganese used today in steelmaking is still used for its properties as a deoxidant and a sulphide former. In this last case it combines with sulphur avoiding the formation of iron sulphides, which sulphides are low melting point phases which become liquid at hot rolling temperatures and which, consequently, generate surface cracking. The other 70 % of the manganese is used purely as an alloying element. Steels usually contain from 0,2 % to 2 % Mn depending on grades as Mn is the cheapest alloying element among those which enhance some key mechanical properties like strength and toughness. In the specific case of stainless steel, it can substitute expensive nickel in some austenitic grades called 200 series. There are two families of Mn alloys called ferro-manganese (FeMn) and silico-manganese (SiMn). Silico-manganese adds additional silicon which is a stronger deoxidizer and which also helps to improve some mechanical properties of steel. In each family carbon is controlled and is lowered when producing ‘‘refined’’ grades. Nitrogen, Boron, Titanium, Phosphorus are elements which can be controlled depending on requested specification

FERROMAGANESE

FeMn

CHEMICAL COMPOSITION

Typical grades available. Other grades are on request. Valid for sizes > 10 mm

Grade	Mn Min.	Si Max.	C Max.	P Max.	S Max.
FeMn	75	1.5	6-8	0.25	0.05

SIZING

Standard sizing:

10 – 50 mm (90%)

PHYSICAL DATA

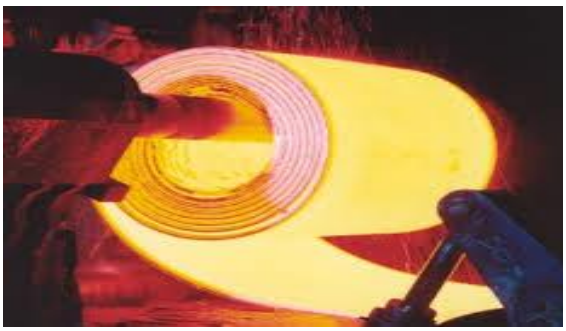
Density: 7.4 g/cm3

Bulk density: approx. 4000 kg/m3

Angle of repose: 40° - 60°

(depending on size of material)

Melting range: 1230°c – 1260°c



PACKING

FeMn is usually delivered as bulk. Packing in big bags and other

packaging is on request.

ORIGIN OF PRODUCT

SMAL -India

CHARACTERISTICS

It is lumpy material practically odourless when dry, with a

silvery

metallic surface

Effects of the addition of silicomanganese to steel:

- Hadfield steel is recognized for its ability to be work-hardened due to the addition of 10% to 14% of manganese
- Enhances yield at the steel mill by integrating with the sulphur in the steel and reducing the formation of iron pyrite, which can make the steel susceptible to crack and tear during high temperature rolling processes
- Manganese, as a desulfurizer, forms stable, high-melting sulphide particles, and manganese as an alloying agent enhances hardness, strength, abrasion resistance, and hardenability.