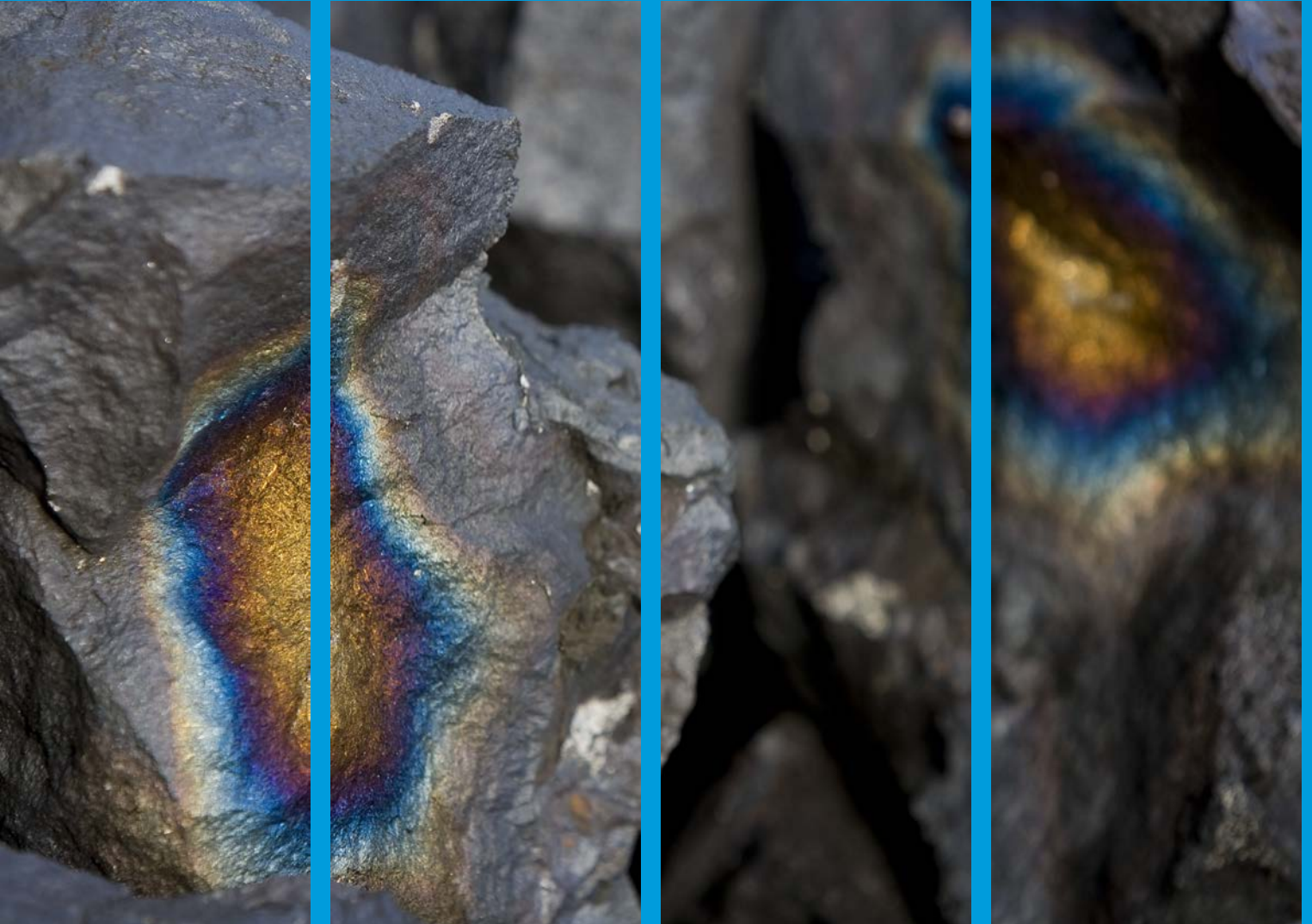


MEDIUM / LOW CARBON FERROMANGANESE

MC / LCFeMn



MN ALLOYS

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.

A very specific application of refined manganese alloys is a constituent in the coating of welding electrodes.

MEDIUM / LOW CARBON FERROMANGANESE

MC / LCFeMn

CHEMICAL COMPOSITION

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

Grade	% Mn Min.	% Mn Max.	% C Max.	% Si Max.	% P Max.	% N Max.	% S Max.
FeMn 80 C15	80	83	1.5	0.6	0.20	0.15*	0.01
FeMn 80 C10	80	83	1.0	0.6	0.20	0.15*	0.01
FeMn 80 C05	80	83	0.5	0.6	0.20	0.15*	0.01

* Nitrogen content can be lowered down to 0.05 % on special request

SIZING

Standard sizing:

20 – 80 mm – maximum 10 % undersize

10 – 50 mm – maximum 10 % undersize

3 – 25 mm – maximum 5 % undersize

All sizes:

Maximum 10 % oversize.

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

MCFeMn is usually delivered as bulk. Packing in big bags and other packaging is on request.

ORIGIN OF PRODUCT

Norway

CHARACTERISTICS

It is lumpy material practically odourless when dry, with a silvery metallic surface.

Effects of the addition of ferromanganese to steel:

Manganese has an important influence on the structure and properties of steel, depending on the amount used and the combined effect with other alloying elements.

Manganese improves the tensile strength, workability, toughness, hardness and resistance to abrasion.

It also reacts with the remaining sulphur in the steel and thus prevents any tendency of hot shortness.

By adding the manganese as MC / LCFeMn instead of HCFeMn, approximately 80 % to 93 % less carbon is added to the steel.

As the alloy is delivered in lumpy form, it will give higher Mn yield compared to electrolytic manganese.

Web: <http://www.eramet.fr> – Contact: sales@eramet-comilog.com



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ISO 9001



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