

# LCM Products - Cast - Master Alloys...

In many instances the use of master alloys is the most effective way of introducing controlled levels of rare earth metal to more complex alloy systems. The principal reason for adding rare earth metals in this way, is due to the very high oxidation potential of RE metals and a good master alloy will control oxygen content and will stabilise metals that would normally oxidise in the atmosphere.

The use of a master alloy delivers the benefits of improved yields, together with extremely precise and reproducible rare earth additions. LCM master alloys are used in the manufacture of corrosion resistant steels, high temperature alloys and various specialised systems. For individual applications LCM engineers are able to advise on the most suitable master alloy composition.

## **Common Master Alloy Systems:**

Infinite combinations can be considered.

Rare Earth		Non-Rare Earth
Yttrium	alloyed with	Iron
Lanthanum		Cobalt
Cerium		Nickel
Cerium mischmetal		Copper
Praseodymium		Aluminium
Neodymium		
Samarium		
Gadolinium		
Terbium		
Dysprosium		

Individual compositions are set by the customer, often with technical assistance from LCM engineers to define the most suitable system based on end-use.

Please refer to the phase diagrams in the 'Technical' section of our website.

## **Form**

Material is routinely supplied in the form of cast ingot or ingot pieces with piece size varying according to customer requirements.

## **Quantity**

Typical batch sizes for master alloys range from 50kg to 2000kg

## **Packaging**

Packaging varies depending on the nature of the master alloy. In general LCM will recommend suitable systems for approval by the customer.

## **Quality assurance**

Production processes are part of our quality management system – certified to ISO9001: 2000 standard. Each batch is supplied with a Certificate of Conformance detailing the chemical analysis results according to the specification agreed between LCM and the customer.