Products - Co Reduced...

The manufacture of samarium cobalt alloys via the co-reduction of an oxide mix is a specialised process yielding very fine-grained high performance alloy powders. Co-reduction has now become the industry standard for SmCo5 production; the capability of this process also extends to the manufacture of Sm2Co17 powders, where the product type can provide significantly improved processing performance for customers.

Compositions and Purity

(Weight %)	SmCo5	Sm2Co17
Sm	33.0 - 42.0	24.0 - 30.0
Fe		14.0 - 19.0
Cu		4.0 - 8.0
Zr		1.5 - 3.5
Co	Balance	Balance
Calcium	<0.15	<0.15
Nickel	<0.20	<0.20
Iron	<0.20	
Aluminium	<0.05	<0.05
Silicon	<0.05	<0.05
Magnesium	<0.03	<0.03
Boron	<0.0005	<0.0005
Oxygen	<0.30	<0.30
Carbon	<0.030	<0.060

Individual compositions are usually set by the end-user, with alloys manufactured and supplied to specifications agreed between LCM and the customer.

Alloying additions

Praseodymium and Gadolinium are common rare-earth additions to these Sm-Co based alloy systems.

Form

A dark grey powder, particle size 100% <300µm

Quantity

Batch sizes range from 200kg to 2000kg

Packaging

Inner: Vacuum-Sealed multilayer aluminised laminate packs. This packaging provides excellent shelf life with protection from oxygen and humidity.
Outer: UN Steel drums 50-100kg net weight

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 results from full chemical analysis and, if required, powder size distribution.