

# LCM

## Products - Cast - Sm-Co...

The production of samarium cobalt alloys by vacuum induction melting and casting is ideal for achieving homogeneous material with precise compositional control. LCM typically supplies material in the form of powders, with size distributions tailored to give optimum properties for each customer's processing technique. Alternatively, alloy may be supplied as cast ingot or granules crushed to specified size requirements. LCM also offers a service for taking-back sintered products from customer plants that can be re-processed into useful feedstock alloy for re-supply.

### Compositions and Purity

(weight %)	Sm2Co17	SmCo5
Sm	24.0 - 30.0	33.0 - 42.0
Fe	14.0 - 19.0	-
Cu	4.0 - 8.0	-
Zr	1.5 - 3.5	-
Co	Balance	Balance
Calcium	<0.005	<0.005
Nickel	<0.10	<0.20
Iron	-	<0.10
Aluminium	<0.03	<0.03
Silicon	<0.005	<0.005
Magnesium	<0.005	<0.005
Boron	<0.0005	<0.0005
Oxygen	<0.10	<0.10
Carbon	<0.01	<0.01

Individual compositions are usually set by the end-user, with alloys manufactured and supplied to specifications agreed between LCM and the customer, which might vary the impurity levels from typical commercial qualities.

### Alloying additions

Gadolinium is a common rare-earth addition to cast Sm-Co based alloy systems.

### Form

Typically a metallic grey powder, supplied <300µm or <500µm. Other forms, such as cast ingot or crushed granules can also be supplied.

### Quantity

Batch sizes range from 5kg to 2000kg

### Packaging

Inner: Vacuum-Sealed multilayer aluminised laminate packs. This packaging provides excellent shelf life with protection from oxygen and humidity.

Outer: 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.