

### Alloy Description:

Aluminum cerium master alloy is the alloy of Aluminium and cerium which is used as additive for Cerium in aluminium alloys as a hardener. This alloy is dissolved fast in aluminium melt and gives maximum recovery of Cerium than the cerium added individually. The chemical composition and physical properties of the alloy is given below:

### Chemical composition:

Alloy Grade	Chemical Composition (%)			
	Ce	Fe (max)	Others (max)	Al
AlCe 3	2-3	0.25	0.5	Balance
AlCe 7	6-7	0.25	0.5	Balance
AlCe 10	9-10	0.25	0.5	Balance

Other impurities- Mn, Ca, Zn, Na, Si, Pb \*\*above hardeners are produced from 99.7% (Min.) purity of Al.

### Physical properties:

Alloy Grade	Density (gm/cc)	Melting point (°C)
AlCe (310)	2.75- 2.9	640- 660*

\* melting point is not a relevant in normal use, the majority of master alloy and tablets produced by Minex Metallurgical Co. Ltd., dissolve in Aluminium rather than melt.

### Application:

Aluminium cerium master alloy has been added in experimentally in casting alloys (eg. AlSiMg alloy,...etc) to increase fluidity and reduce die sticking. By adding cerium into the alloy, the strength and hardness at room as well as high temperature increase. Beside that, it also help to refine eutectic structure, decrease ductility, harden by dispersion (by precipitation of Al<sub>4</sub>Ce phase.), and influence the rate and precipitation of solid phases. Cerium increases the recrystallization temperature of aluminium, if Ce > 0.5%.

Cerium (0.1 & 0.5 %) together with iron (or Co) increases the strength and corrosion resistance of aluminium conductor without altering their ductility. The resistivity increases very little.

### Addition technique:

Remove heavy dross from melt surface and add appropriate amount of AlCe master alloy (At T < 750°C). After the dissolution of alloy, stir the melt gently for 30sec.

### Available form:

Forms	Std. Size (mm)	Std. Weight (Kg)
Piglet	60×45×45	
Waffle plate		8 – 10
Ingot		6 – 8

Different shape & Size can also be produced as per customer requirement.

### Packing:

Piglet	Ingot	Waffle plate
25 Kg gunny bag/500 Kg Jumbo Bag (or as per customer requirement)	1000 Kg jumbo bag or strapping with palette (or as per customer requirement)	500 Kg strapping with palette (or as per customer requirement)

### Storage:

Use cool and dry place to store the material.

### Safety:

Material Safety Data Sheet can be supplied on demand. Material is not hazardous but normal safety precautions to be followed.