

# Aluminium Calcium



Calcium is used in alloys with high contents of Mg to inhibit magnesium oxidation and edge cracking. The level of calcium necessary to avoid this is typically 50-200ppm in the final alloy.

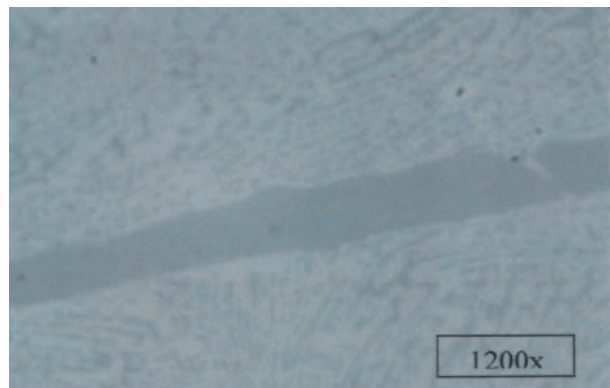
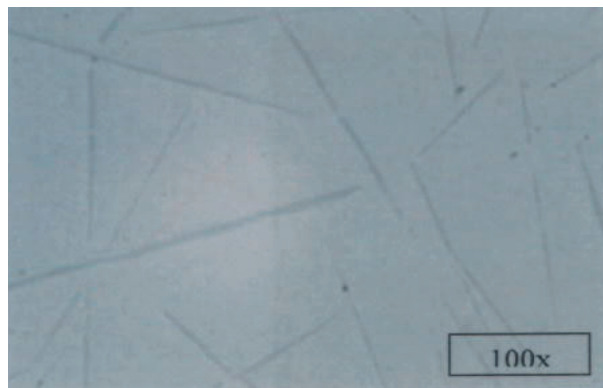
7.5% Ca	Colour Code	Ca	Fe	Si	Others		Form
					Each	Total	
		6.5-8.5%	0.3%	0.2%	0.05%	0.15%	Bar

Composition is a maximum unless shown as a range.

## Microstructure:

Microstructure: Eutectic

- Oxides: < 101  $\mu\text{m}$  - Not considered
- < 1,500  $\mu\text{m}$  - Maximum individual length
- < 2,500  $\mu\text{m}^2$  - Maximum total length



Metallographic - CaAl 7.5% - Eutectic structure with fines needles of  $\text{CaAl}_4$  which favour a rapid dissolution.



The presence of calcium can lower the rate at which magnesium is lost when the metal is held for extended periods due to oxidation. The figure below shows this variation in magnesium level for two alloys; one with 50ppm Ca, and conversely one where Ca is not present.

## Effect of calcium on the magnesium concentration

