

## The role of antimony in modifying of Al-Si-Cu cast alloy

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The microstructure evolution and the tensile strength changes of hypoeutectic AlSi6Cu4 cast alloy modified by AlSb10 (0 - 10 000 ppm) was systematically investigated. The samples were study without and after T6 heat treatment. Several types of etching were used, which includes standard black and white etching (0.5 % HF), colour etching by Weck-Al (for documentation the eutectic cells) and deep etching by HCl (for eutectic Si morphology study). The results show that the addition of Sb into AlSi6Cu4 cast alloy should act as a modifier, so it supposes to change the eutectic Si morphology. However, its effect as a modifier is not as significant as we have expected. Its effect was more inoculation and caused refinement of microstructure what has led to mechanical properties increasing. Refinement of microstructure could obviously improve the size and distribution of eutectic cells. The eutectic cells are refined significantly in a fully modified eutectic microstructure (more than 1 000 ppm Sb). It can be speculated that the stick-fibrous transition of eutectic Si morphology involving in impurity modification may be independent of the frequency and mode of eutectic nucleation.

**Keywords:** microstructure, modifying, heat treatment, aluminium alloys, antimony

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