
ECO - ALMINAL

(Additions for the reduction of aluminium in copper-based alloys.)

PRODUCT DATASHEET

Product Description:

ECO - ALMINAL is a powdered flux range supplied preweighed in packets or in bulk.

Product Function:

The presence of aluminium in copper-based castings can result in the occurrence of alumina inclusions at grain boundaries. These may give rise to porosity, loss of pressure tightness and low tensile strength. In addition, surface aluminium oxide films can be problematic in welding, soldering and brazing techniques. The removal or significant reduction of aluminium content of these alloys largely eliminates the problems. ECO - ALMINAL is a product which is designed to fulfil the purpose of aluminium removal without otherwise affecting the melt. When the aluminium content has been reduced to very low levels. ECO - ALMINAL will then remove silicon and manganese from copper alloys but at a much slower rate than aluminium.

Product Selection and Application: Two forms of ECO - ALMINAL are available as follows:

1. ECO - ALMINAL 2 is recommended for foundry use when metal temperatures are relatively low.
2. ECO - ALMINAL 8 is primarily intended for use in refineries.

ECO - ALMINAL should be used to treat melts containing less than 0.5% aluminium. Where higher levels exist the alloys should be diluted with aluminium free material until the content is reduced to 0.5% or less. When the aluminium content is high, approximately 0.5%, it is recommended that the charge be melted down under a cover of 0.5% by weight of ECO - ALMINAL. This will also protect the zinc content of the melt. Before pouring the metal should be brought to a temperature slightly higher than that required normally and 0.5% of ECO - ALMINAL should be added to the surface and rapped in or plunged to ensure maximum mixing. The degree of mixing is very important if efficient removal is to be obtained. The treatment is repeated with further additions of ECO - ALMINAL until the aluminium content of the melt is reduced to the required level. The melt is thoroughly deoxidized immediately before pouring.

The following figures give a guide to the effect of ECO - ALMINAL on melts of varying aluminium content.

1. Where melts contain 0.4% aluminium an addition of ECO - ALMINAL will remove approximately 40% of its own weight of aluminium.
2. When melts contain 0.2% aluminium an addition of ECO - ALMINAL will remove approximately 25% of its own weight of aluminium.
3. When melts contain 0.1% of aluminium an addition of ECO - ALMINAL will remove approximately 25% of its own weight of aluminium.

SELLING POINTS FOR ECO - ALMINAL reduces the aluminium content of copper-based alloys by a simple flux treatment.

The harmful effects of aluminium are eliminated by ECO - ALMINAL without contamination or unwanted compositional changes in the melt.

Casting made with ECO - ALMINAL treated metal exhibit greater cleanliness, Pressure tightness and tensile strength. In addition they lend themselves to easier welding, brazing and soldering.