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ECO - LOWGAS

(A briquette used for the removal of hydrogen from copper and copper base alloys)

PRODUCT DATASHEET

PRODUCT DESCRIPTION:-

ECO - LOWGAS comprises a granual material strongly bonded and formed into a weighed unit with high surface area to volume ratio to ensure maximum contact area with liquid metal.

PURPOSE OF USE:-

ECO - LOWGAS is used for degassing of molten copper and copper based alloys. In copper and copper base alloys, dissolved hydrogen and cuprous oxide combine to form water vapor by steam reaction. The solubility of hydrogen in copper and its alloy melts reduces as the temperature falls until the gas attains the solid solubility. The hydrogen which is expelled from solution tends to combine with cuprous oxide levels are very low after deoxidation, hydrogen may still be problematic and it is preferable to reduce it to negligible proportions. The easiest and most effective way of doing this is to bubble through the melt a stream of hydrogen scavenging gas which does not react with the alloy treated.

ECO - LOWGAS units comprise a mixture of chemicals which, on contact with the molten metal, decompose to give a continous steady stream of non-reactive gas. Since ECO - LOWGAS is very carefully dried and packed, the gas bubbles contain very little hydrogen and are able to flush out that gas and carry it to the surface where it is lost to atmosphere.

INSTRUCTIONS FOR USE:-

ECO - LOWGAS units are of annular shape, having a central hole into which a simple refractory coated and properly dried steel plunger can be inserted.

a) Melt down under the cover of an approximate flux like ECO - Cupreet, ECO - Cuprex and ECO - ALBROL

b) For degassing, Plunge the ECO - LOWGAS units to bottom of the melt. Maintain this position till the bubbling effect subsides totally. This would ensure maximum contact time between evolved gas bubbles and melt and obtain good hydrogen removal.

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c) The degassing time should be at least 3 minutes. This is accompanied by a loss in temperature of 10-15 centigrade degrees. A correspondingly higher degree of superheat must therefore be allowed.

d) The metal should be deoxidised using ECO-DS tubes, skimmed and pouring immediately.

BENEFITS:-

1) ECO - LOWGAS is an inexpensive, easy to apply and efficient method of removing hydrogen from copper and copper based alloys.

2) Removal of hydrogen by ECO - LOWGAS improves the mechanical properties in castings, minimizing porosity due to steam reaction.

3) Ancillary equipment required to use ECO - LOWGAS is simple and costs very little.

4) Metal fluidity is improved due to degassing followed by deoxidation.

5) ECO - LOWGAS is robust, stores well and is safe and non-toxic in use.

ECO - LOWGAS is available in two grades:

1) ECO - LOWGAS 1A no for 50 kg melt.
2) ECO - LOWGAS 2B no for 100 kg melt