

RECENT DEVELOPMENTS IN CLEANING KOVAR[®] ALLOY

Considerable work has been done at Bell Telephone Laboratories, Murray Hill, New Jersey, on a novel method for cleaning all parts for electron tube applications. This Hydrogen Peroxide process is especially applicable for final cleaning of Kovar[®] alloy parts just prior to sealing to glass, as follows:-

1. Materials

- (a) C.P. 30% Hydrogen Peroxide (such as Merck "Super Oxyl" without stabilizer).
- (b) De-ionized water preferred although distilled water may be used.

2. Procedure

- (a) Immerse parts in de-ionized water, bring to boil, adding enough peroxide to make a 5% solution.
- (b) Boil 20 - 30 minutes.
- (c) Overflow rinse with tap water.
- (d) Rinse in de-ionized water.
- (e) Dry in air furnace.
- (f) Store in glass containers which have been previously cleaned by the Hydrogen Peroxide method described above.

The Hydrogen Peroxide procedure has been found to be effective in removing all traces of surface contamination including pick-up of organic materials from the atmosphere. The efficacy of this cleaning may be determined by a Wetability test.

A further refinement in eliminating organic surface contaminants in the preliminary cleaning of Kovar[®] alloy is to heat the Kovar alloy parts to 400° C in an air atmosphere just prior to hydrogen firing.

Note: The cleaning methods described above are in addition to the standard procedure outlined in Engineering Bulletin 100EB6.