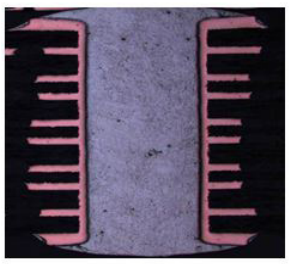
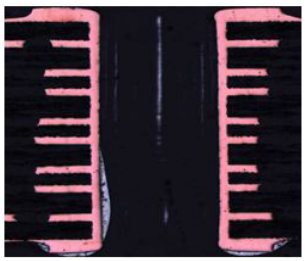
Chemical Formulation of Stable, Low build Electroless Copper Concentrate for High Reliability Plated through Hole Interconnections

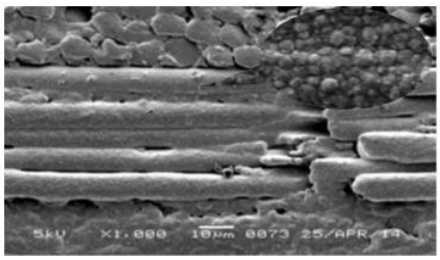
U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed the technology for Chemical Formulation of Stable, Low build Electroless Copper Concentrate for High Reliability Plated through Hole Interconnections.

This technology deals with the formulation of highly stable and low build Electroless copper concentrate for the metallisation of drilled holes in Printed Wiring Boards [PWBs]. This can be used by PWB manufacturers to realize highly reliable PTHs both in High Tg laminates and Microwave laminates.





PTH shows better Electroless copper integrity
a. after 6X solder float test and b. thermal cycling test



SEM micrograph illustrate smooth surface morphology on highly profiled hole wall surface

Salient Features & Major Specifications

- Low build, excellent stable bath and operate at ambient temperature (25±5 ^{0}C).
- Continuous copper seed layer without voids.
- Provides high quality deposit with consistent performance.
- Suitable for high aspect ratio PTHs.
- Enhanced PTH integrity in High Tg multifunctional epoxy and microwave laminates under thermal excursions.
- Excellent shelf life.

- Substrate: Glass epoxy copper claded laminate with low/ high TG and microwave laminate with ceramic /woven glass PTFE laminate.
- Surface treatment: Plasma treated drilled holes. Max..Aspect ratio: 1:10.
- pH of working bath the solution: 11 to 13.
- Loading capability: 5.5Sq .dm/ltr of freshly prepared solution.
- Deposited copper thickness 20-25 microinch in 20 minutes.

Technology Transfer

URSC/ISRO offers to transfer this technology of Chemical Formulation of Stable, Low build Electroless Copper Concentrate for High Reliability Plated through Hole Interconnections to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

Technology Transfer & Industry Coordination Division (TTID),
Programme Planning and Evaluation Group (PPEG),
U R Rao Satellite Centre (URSC), ISRO, HAL Airport Road,
Vimanapura Post, Bangalore – 560 017.
Email-id: tt-icd@ursc.gov.in
Fax No: 080-25205261
https://www.ursc.gov.in/industry/index.jsp