

Methode Electronics, Inc. Connector Products

*European Union
RoHS Compliance*

As a major global supplier of interconnect products, Methode Electronics, Inc. understands the importance of supporting the European Union's RoHS initiatives and will offer products with full compliance. The RoHS directive, which takes effect on July 1, 2006, prohibits the use of lead, mercury, cadmium, hexavalent chromium, polybromated biphenyls (PBB's), polybrominated diphenyl ethers (PBDE's) and polybrominated biphenyl oxides (PBDO's). These substance limitations affect two design aspects of a typical connector: the contact plating and the insulator material.

METHODE'S PLAN

REQUIREMENT:

Lead Free Connectors for Reflow Solder Processing

- Please specify this requirement, typically used for surface mount connectors. Methode will supply a connector with a **"G"** suffix in the part number suffix that meets European RoHS requirements.

REQUIREMENT:

Lead Free Connectors for Wave Solder Processing

- Please specify this requirement, typically used for through-hole connectors. Methode will supply a connector with a **"W"** part number suffix that meets European RoHS requirements.

CONTACT PLATING

Tin/lead (SnPb) has been the commonly accepted plating within the connector industry. In order to meet the RoHS directives, Methode will implement the use of pure tin over nickel-plating on all products that previously used tin/lead. The change to pure tin plating will proceed during the upcoming months and can be made immediately available for customers making specific requests.

Solderability

Pure tin plating should not cause soldering problems for customers that use tin/lead solder or lead free solder alloys, such as SnCuAg.

Tin Whisker Growth

Tin whisker growth with pure tin plating has been an issue within the interconnect industry for several decades. The primary reason for adding lead to tin plating was to significantly reduce the occurrence of whisker growth. Other plating alternatives to reduce this probability have also been studied. Methode Electronics will implement the following industry recommended lead-free tin plating alternative as follows:

Matte tin plating over a nickel underplate

If a customer must have a 100% guarantee that tin whiskering will not occur, then the following plating will be recommended in lieu of pure tin plating.

Gold flash plating over a nickel underplate

Other plating finishes, such as thicker gold, are also available to meet specific customer requirements.

INSULATOR

Electronics manufacturers are implementing the use of lead free solders, such as SnAgCu, to comply with European RoHS regulations. These alloys require higher processing temperatures of up to 260C as compared to traditional tin/lead (Sn/Pb) alloys. Therefore, all interconnect components being soldered must have a plastic insulator that withstands these higher temperatures. Methode will be changing any required insulators to higher temperature materials during the upcoming months, and these insulator materials can be made immediately available for customers making specific requests.

There are two applications that must be considered: reflow and wave solder.

Reflow Processing – Typically Surface Mount Connectors (“G” suffix)

Connector insulators must meet reflow oven processing temperature requirements of 260C for limited periods of exposure. Methode will supply an insulator material such as Polyphenylene Sulfide (PPS), Polycyclohexylenedimethylene Terephthalate (PCT), Polyphthalamide (PPA), Polyamide 46 (Nylon 46) or Liquid Crystal Polymer (LCP) that will meet this temperature requirement. A “G” suffix will be added to all part numbers that have lead-free plating AND an insulator material that meets the 260C reflow processing temperature requirement.

Wave Solder Processing – Typically Through Hole Connectors (“W” suffix)

Connectors subjected to lead free wave solder processing are not exposed to the maximum temperatures reached in lead free reflow processing and will not require a change to the insulator material. However, these products will not withstand reflow soldering temperatures. A “W” suffix will be added to connectors that have lead free plating AND an insulator material that meets lead free wave solder processing requirements.