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Dear Madam, Dear Sir,

I am writing to you on behalf of EIPC in the context of the ongoing Öko Institute consultation regarding the substances to be potentially added to the RoHS Directive.

The European Institute of Printed Circuits (EIPC), is an international service provider to the European Interconnection and Packaging Industry. Since 1968, the EIPC is servicing about 130 member companies, including suppliers of machinery and materials to the PCB industry, PCB Manufacturers, contract electronics manufacturers and OEM's.

EIPC believes that the potential addition of new substances to the RoHS Directive should be based on sound scientific evidence. Substances should be added only following an adequate risk and impact assessment process that follows the procedure established in the REACH legislation.

In particular, we would like to oppose the listing of TBBPA, BPA and Nickel which are included in the Öko draft priority list, based on the following reasons:

### **TBBPA**

TBBPA is used as a reactive component in the production of printed circuits boards (mainly of FR4 laminates) and, being integrated into the polymer of the board, it does no longer exist as such. The flame retardant Tetrabromobisphenol-A (TBBPA), does not meet any of the criteria outlined in the Commission tender: TBBPA is not a PBT, not a CMR, not a vBvP neither an endocrine disruptor. TBBPA has just gone through an EU Risk Assessment to evaluate its effects on human health and the environment. No risk has been identified for human health or for the environment when TBBPA is used as a reactive. TBBPA is approved for use by the EU and it will subsequently go through REACH registration.

### **BPA**

Bisphenol A (BPA) is a chemical building block that is used primarily to make polycarbonate plastic and epoxy resins.

Epoxy resins have many uses including engineering applications such as electrical laminates for printed circuit boards, composites etc.. Due to manufacturing processes

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of PCBs the epoxy resins are cured and therefore inert materials and chemical resistant.

Over four decades of extensive safety research on BPA shows that consumer products made with BPA are safe for their intended uses and pose no known risks to human health.

### **Nickel**

Nickel is a silvery white, hard and ductile metal and reacts slowly in air at normal temperatures and pressures. Due to its permanence in air and its inertness to oxidation it is used in many industrial and consumer products, including stainless steel, magnets, coinage, and special alloys. Nickel is also used for electroplating copper, brass, etc for industrial and consumer applications.

Due to the hardness and electrical conductivity Ni is especially used in the PCB- and Semiconductor industry. In most connector applications in the electronic/electric industry and support material in the semiconductor industry (lead frames) Ni is used as an important undercoating between Cu, brass or special alloys and Au, Pd and Ag. In addition Ni is a diffusion barrier between Cu and Au. Ni also prevents the creation of whisker of Ag and Sn deposits.

The thicknesses of Ni-layers are related to the application, normally between 3 µm up to 10 µm. The deposits were produced either by electroplating or electroless plating. The chemical basis of Ni plating solutions is Ni-Sulphate or Ni-Sulphamate.

Friedrichsdorf, 27. March 2008



### ***Dr. Konrad Wundt***

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