



## Letter to Suppliers from Director of Global Procurement

### **Subject: European Union Restriction of Hazardous Substances (RoHS)**

Dear Valued Supplier:

Benchmark Electronics is committed to protecting the environment and complying with the European Directive (EU) 2002/95/EC regarding the Restriction of Hazardous Substances (RoHS). To this end Benchmark Electronics is taking steps internally to ensure full compliance with RoHS well before the July 1<sup>st</sup>, 2006 effective date. Furthermore, Benchmark Electronics is offering to assist our customers in activities necessary for their compliance with the subject legislation.

As a supplier to Benchmark Electronics there are both general requirements (sections 1-4) and product specific requirements (section 5-6) that you must comply with, related to RoHS and our business relationship. Please note that with prior notification, Benchmark reserves the right to inspect the supplier's facility, to verify RoHS compliance and the related RoHS systems.

#### **General Requirements:**

- 1) **COMPLIANCE:** Benchmark Electronics will require compliance to the European Directive (EU) 2002/95/EC, titled "Restriction of the use of certain Hazardous Substances in Electronic Equipment" for control of **lead, cadmium, hexavalent chromium, mercury, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE)**. This legislation restricts the sale of electrical and electronic equipment throughout the entire EU territory after July 1<sup>st</sup>, 2006

The following Maximum Concentration Limits (MCV's) will apply:

- **Lead (Pb)** 0.1 % by weight = 1000 mg/kg = 1000 ppm
- **Mercury (Hg)** 0.1 % by weight = 1000 mg/kg = 1000 ppm
- **Cadmium (Cd)** 0.01 % by weight = 100 mg/kg = 100 ppm
- **Chromium VI (Cr VI)** 0.1 % by weight = 1000 mg/kg = 1000 ppm
- **PBB** 0.1 % by weight = 1000 mg/kg = 1000 ppm
- **PBDE** 0.1 % by weight = 1000 mg/kg = 1000 ppm

These limit values will apply to each "homogenous material" within a component. "Homogenous Material" is defined as "a material that can not be mechanically disjointed into other materials". At a minimum, the requirement for the measurement of MCV's within a component must flow down the entire supply chain, even to the source of each homogenous material and the data records of such must be retained by each supplier in the supply chain, including the source of each homogenous material, for a minimum of four years after the sale of the product.

#### **2) IDENTIFICATION FOR ALL PURCHASED ITEMS:**

- All components / assembly materials should have the outer packaging boxes and inner package material (e.g. tray, tube, reel, jars, syringes, cartridges, etc.) marked

indicating that the components / assembly materials are Lead free/RoHS compliant. This marking should also appear on the component package where room allows for such a marking. Also, components / assembly materials shall be marked per JEDEC JESD 97 and IPC 1066, "Marking, Symbols and Labels for Identification of Lead free and Other Reportable Materials in Lead free Assemblies, Components and Devices".

- All Lead free/RoHS compliant components / assembly materials should have a unique supplier part number assigned to allow easy identification and segregation from noncompliant components. Suffix or prefix additions to existing part number schemes are acceptable.
- 3) **PCN NOTIFICATION:** Supplier diligence to product discontinuance notice and customer notification of product / process change (PCN) is even more critical with transitions to ROHS compliant product and particularly on area array (i.e. ball grid array – BGA, chip scale packages – CSP, etc) type components. Benchmark Electronics expects its suppliers to adhere to the industry standard notification requirements, as called out in JESD46B and JESD48A. Suppliers will be required to notify Benchmark Electronics, of any product discontinuation 12 months in advance of the discontinuation date. Availability and life cycle information for both current and lead-free/RoHS compliant products should be specified. All manufacturers who provide notification that they will be producing lead-free/RoHS compliant products should provide a product roadmap to their customers indicating the planned changes and implementation timetable.
- 4) **NON-COMPLIANCE:** In the event that Benchmark Electronics determines that a component, provided by the Supplier or it's franchised distributors is not in compliance with the European Directive (EU) 2002/95/EC, titled "Restriction of the use of certain Hazardous Substances in Electronic Equipment", Benchmark will require that the Supplier reimburse Benchmark for the cost of the bare board and for the cost of materials and components used in making the assembly. This warranty will be in effect for all product provided by the Supplier for twelve (12) months from the date code (date of manufacture) or the date of Benchmark's receipt of the product, whichever is later.

#### **Specific Requirements:**

- 5) **CERTIFICATION OF COMPLIANCE:** Benchmark Electronics both prefers and encourages the use of the IPC 1751/1752 Materials Declaration standards. Alternatively, a certificate of compliance may be accepted. At a minimum, the Materials Declaration or Certificate of Compliance forms must include: Date, company name, part name, part number, mfg, mfg PN, identification of the processing information (see paragraph 2 below), a statement of compliance to the European Directive (EU) 2002/95/EC, signature (may be electronic) and title of authorized certifier, indication whether the mfg part number is a distinct RoHS compliant mfg part number and the part is RoHS compliant by definition. Acceptable date/lot codes or date/lot code range, if there is not a distinct RoHS compliant mfg part number must be included. It is preferred the supplier also list all the homogenous materials containing the six banned substances with the substance/material ppm or % of each material by weight for each of the 6 substances listed above.

#### **PROCESSING INFORMATION (Pb free/RoHS compliant product)**

1. JEDEC E Code
2. Maximum Case Temperature
3. JEDEC MSD moisture information
4. Tin Whisker test and qualification data – if appropriate
5. Types of reliability testing

Frequency of Materials Declaration or Certificate of Compliance from Supplier to Benchmark Electronics Corp. will vary as follows:

Every shipment – A certification is required if the mfg part number is not distinct for RoHS compliant product (e.g. compliance tracked only by date code, lot code, labeling and /or marking), and the mfg has produced RoHS noncompliant parts under this part number inside of 1 year, or the mfg is currently producing both RoHS compliant and noncompliant parts purchased under the same mfg part number. The certification shall include the PO number and quantity in addition to the Basic Certification requirements.

Upon request – A certification is required to be submitted to Benchmark Electronics within 7 days of a specific request, and must include the maximum concentration values of the 6 RoHS restricted substances for each homogenous material within the product by listing the substance/material ppm or percentage in addition to the Basic Certification requirements.

The supplier is responsible for using applicable 3<sup>rd</sup> party testing to obtain the MCV's for substances when: a) internal testing is not sufficient; b) the validity of a sub-tier supplier's declaration is uncertain; c) or a claim exists that disputes the existing data.

6) **PART SPECIFIC INFORMATION:** In addition to the above mentioned general requirements (sections 1-4) and specific requirements (sections 5-6, inclusive), as a supplier to Benchmark Electronics, you will be required to provide the following information per each distinct, orderable Pb free/RoHS compliant part:

- **TRANSITION STRATEGY**

1. How long will the non RoHS compliant product be available?
2. What is the timetable for converting to RoHS compliant product?
3. How will your customers be notified of obsolescence, due to RoHS compliance?
4. How will the Sn-Pb free/RoHS Compliant product be identified?
5. Will the parts have new part numbers for Lead free/RoHS compliant parts?
6. What is your company's strategy for providing obsolescence and end of life notification?

- **PRODUCT LIFE CYCLE SUPPORT**

1. When will the product be transitioned to RoHS compliant product only?
2. How will the RoHS compliant parts be identified?
3. What is the policy for the return of RoHS non-compliant material?
4. What is the policy regarding the submittal of C of Cs, or Material Declarations?

**By the close of business on October 14, 2005**, please provide your acceptance responses using the attached (below) Excel template for each of the 6 sections above, along with the name and contact information (phone number, e-mail address) of both the individual assigned by your company to be responsible for the handling of RoHS information and the letter respondent, to [rohs@bench.com](mailto:rohs@bench.com) with a subject line of "RoHS letter response"

Your cooperation in complying with ROHS and other environmental requirements and providing rapid response to Benchmark's requirements is greatly appreciated as an important part of being a supplier to Benchmark Electronics. If you have any questions related to these requirements, do not hesitate to email your concerns to [rohs@bench.com](mailto:rohs@bench.com) with a subject line of "RoHS letter question". Thank you again for your cooperation.

Sincerely,

Jon Allen  
Director, Global Procurement  
Benchmark Electronics, Inc.  
(979) 849-6550, X-1283

**Attachment – BEI RoHS supplier letter response template (Excel spreadsheet)**



Microsoft Excel  
Worksheet