

## **Frequently Asked Questions**

Note: these FAQs are provided to Hampshire's customers as guidance only. The ROHS and WEEE directives and their updates will provide the most accurate information regarding compliance and enforcement. See the Links question #3 in this FAQ.

### 1. What's the purpose of RoHS?

RoHS, lead-free legislation, or to use its accurate title, "Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment", will be enforced throughout the European Community from July 1, 2006 forward.

The purpose of this Directive is simple – restrict the use of six substances within electrical and electronic equipment (EEE), thereby contributing to the protection of human health and the environment. The Directive seeks to limit the chance of hazardous substances possibly leaching out and polluting the environment during end-of-life recycling or disposal in landfills.

The hazardous substances and the proposed maximum concentrations levels are:

lead – Pb	.1% max concentration
mercury – Hg	.1% max concentration
cadmium – Cd	.01% max concentration
hexavalent chromium – Cr(VI)	.1% max concentration
polybrominated biphenyls – PBB	.1% max concentration
polybrominated diphenyl ethers – PBDE	.1% max concentration

Although RoHS is a European Union (EU) Directive, manufacturers of EEE outside Europe must also abide by this legislation if the equipment they produce is ultimately imported into a EU member state. Hampshire Company is therefore responding to this need for our customers. See FAQs #4 and #5.

### 2. What's WEEE and its purpose?

The WEEE directive requires that producers of electronic equipment who sell in EU countries label their equipment to notify customers that it needs to be recycled, take the equipment back from customers at end of life, and finance its recycling and reuse.

The WEEE directive takes effect on August 13, 2005, and manufacturers must meet target objectives for recycling by December, 2006.

3. Links to the EU Directives:

<http://www.dti.gov.uk/sustainability/pdfs/finalrohs.pdf> for RoHS Directive

<http://www.dti.gov.uk/sustainability/pdfs/finalweee.pdf> for WEEE Directive

4. Is my product going to be lead free (Pb-free) or RoHS compliant?

The electronics industry is most affected by the restriction on lead, as it is a key component in electronic component packaging (pins), solders and solder pastes. While the term "lead-free" is sometimes used to describe RoHS, the real requirement for manufacturers is to design and ship products that are not only lead-free but fully RoHS compliant, meaning they do not contain more than the allowances of any of the hazardous substances named in the directive.

Hampshire is committed to working with our suppliers to provide a fully-compliant RoHS solution to our customers by the July 1, 2006 deadline. In many cases for chip solutions, we will be able to provide this solution starting in the 2<sup>nd</sup> quarter of 2005. Our board solutions will be available in the first quarter of 2006. Hampshire plans to convert all affected products to RoHS compliance, and will not offer a "leaded" board or chip after July 1, 2006.

As applicable, Hampshire will comply with the WEEE Directive by the deadlines given in the legislation.

5. What has been changed on the microcontroller (chip) products that I purchase?

Hampshire purchases primarily from two manufacturers of microcontrollers (chips). The main changes have been the removal of lead (Pb) from the leadframes and the leads of the chips. Both manufacturers have done extensive qualification testing for these modified products. If you would like to receive more information about the testing, please contact Hampshire, and we will provide the information to you.

One of the manufacturers will be changing the Moisture Sensitivity Level (MSL) rating for the RoHS-compliant chips from MSL 1 to MSL 3. See the asterisks by affected part numbers (\* or \*\*) in Table 1.0 for FAQ #7. Hampshire will be instituting proper handling, storage, labeling, and shipping of the MSL3 chips. See IPC/JEDEC J-Std-033B October 2005 for information about MSL handling and packaging procedures. Customers will need to use the appropriate methods described in J-Std—033. Hampshire can provide further information to you if you need it.

6. My company's products are currently exempt from the RoHS requirements. Can I use Hampshire chip solutions with my product?

Yes. Per the chip manufacturer, all MSL 1 products are backward compatible with leaded solder pastes. MSL 3 products may be backward compatible, but the user must test prior to use. Hampshire recommends you work with the solder paste manufacturer to develop the appropriate tests. We can provide reflow temperature profiles from the chip manufacturers. Please contact us by using the Contact link on the website.

7. What has been changed on the circuit board products that I purchase?

The conversion of our board products to RoHS-compliance will involve changes to all components and materials used for the boards. Hampshire sources its populated circuit boards from established contract manufacturers that use the latest lead-free through-hole wave solder and surface mount reflow processes to create reliable, quality products for our customers. Hampshire has converted all current board bills of material to have RoHS-compliant components and materials, and our contract manufacturers are now producing these boards for us. All new Hampshire products are designed to be RoHS-compliant.

You will be able to tell if a board shipment is RoHS-compliant by reviewing the Certificate of Conformance, which is on the back of the Packing List. Hampshire uses first-in, first-out inventory management of all board products; we expect to use up all non-RoHS inventory prior to May 2006. We will not ship non-RoHS boards to any customers needing compliant products after May 2006. We are already shipping RoHS-compliant boards for a number of our standard board products.

8. Hampshire Microcontroller (Chip) Part Numbers and Conversion Status Update

TABLE 1.0

\* SOIC does have an MSL 3 rating for RoHS parts

Part Number	Expected Conversion Date	Part Number	Expected Conversion Date
HU12-100D0	Converted	HS10-100D0s	Converted
HU12-100S0	Converted*	HS10-100S0s	Converted
HS12-100D0o	Converted	HX12-100D0s	Converted
HU12-100D0o	Converted	HX12-100S0s	Converted
HC12-100D0o	Converted	HX12-100S1s	Converted
HS12-100S0o	Converted*	HX12-100S3s	Converted
HU12-100S0o	Converted*	HX12-100SAs	Converted
HC12-100S0o	Converted*	HX12-100P0s	Converted
		HX12-100PAs	Converted
HS12-100D0	Converted	HX12-100PIs	Converted
HS12-100S0	Converted	HR12-109D0	Converted
HS12-100P0	Converted		
HS12-100D0	Converted		
HS12-100S0	Converted		
HS12-100P0	Converted		
HS08-100D0	Converted		
HP08-100D0	Converted		
HS08-100S0	Converted		
HP08-100S0	Converted		
HS08-100P0	Converted		
HP08-100P0	Converted		

**NOTE: X = E, S, T, I, or C part numbers**