



Xmultiple Technologies

Lead Free Initiative and Elimination of Banned Substances for Xmultiple Products

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Section 1

XMULTIPLE is committed to an innovative hazardous material free environmental policy for the benefit of its customers, employees, partners and the general public. Manufacturing materials are handled sensibly and economically to reduce waste, and eliminate potentially hazardous lead. Quality systems ensure careful examination of new and innovative ways to respond to the increasing demand for ecologically acceptable products, while maintaining customer satisfaction.

XMULTIPLE initiated a lead free project team in the year 2001 to respond to the EU-directive, whereby lead would be completely abandoned by January 1, 2006. As of 2004, the company has been successful at using alternative materials and processes, and testing these products in close cooperation with its customers and suppliers. Xmultiple is now supplying lead-free connectors with many of our products.

XMULTIPLE has determined that the use of tin and copper is a good substitute for lead. Many years of process experience with longstanding international partnerships has helped to identify and successfully prove the use of this metallurgy, as an alternative to lead. Solderability test have been conducted and are in accordance with IEC 60068-2-20. Xmultiple will have all its products lead free by the end of the year 2005.

Section 2



Subject: Lead Free Initiative and Elimination of Banned Substances

Xmultiple is committed to insure we will meet the July 1st 2006 deadline set for the elimination of lead and other banned substances from our connector and component products. To insure that our customers will be able to meet the deadline we are working to compliance at least one year earlier. Xmultiples own compliance deadline has been designated as being July 1st 2005. Our efforts are directed toward meeting the European Directive 2002/95/EC, calling for the elimination of Lead and other hazardous substances from electronic products. In addition we are reviewing other legislations and requirements which may emerge. As these requirements evolve we will address them as quickly as possible. There is debate over the meaning of lead free. Xmultiple defines "Lead Free Products" as products in which the aggregate Lead content will be less than / equal to 0.1% by weight (an amount consistent with European Directive 2002/95/EC).

Over the last year, Xmultiple has substituted many of the raw materials in our manufacturing processes to eliminate lead. Regarding our surface mount components' there is ongoing research to insure our connectors will survive the increased temperature stress our customers are using in their assembly process. Xmultiple is committed to our objective to meet the new standards assembly reflow profile.

Xmultiple has been asked by companies to provide an all "Tin" solution verses a "Tin/Copper" solution for the elimination of lead. Xmultiple is researching this solution and we plan on providing this solution to those companies who request it.

Section 3

Lead Elimination Road Map – Xmultiple Products With Target Date of July 1st, 2005.

<u>XRJM Series</u> - Single and Multi-Port Connectors	<u>XRJV Series</u> - Vertical Mount
<u>XRJD Series</u> - Stackable Double	<u>XRJ-FJ Series</u> - RJ11 and RJ45

Stack	Without LEDs
XRJC Series - RJ11+RJ45 Combo With Optional LEDs	XRJAX Series - Coax With RJ Snap In
XRJB Series - RJ and Multiple USB Connectors	UltraJAX Series - Dual Function RJ Connectors
XRJS Series - Surface Mount Connectors	XRJH Series - LED on Top With Magnetics
XRJF Series - Without LED and With Magnetic	XRJ - RJ11/RJ45 without LED
XRJDB Series - Tab Down Single & Multi- Port	XRJG Series - LED on Bottom With Magnetics
XUSB Series - USB Connectors	XRJK Series - Unshielded MAG JACK
XDVI Series - DVI Connectors	

Section 4

The European Union Authorities Directives

The authorities of the European Union have not so far stipulated any limit values (threshold) for what they mean by "lead-free". However, it is already clear that the definition of "lead-free", which will not mean a complete absence of lead.

Orgalime, the European federation that represents 34 national trade federations, i.e. 130,000 companies in the metal and electronic industries, is assuming that the following limit values will be declared:

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, PBDE	0,1 % by weight	=	1000 mg/kg	=	1000 ppm

These limit values will probably apply to every specific material in a piece of equipment, e.g. each solder and each tiniest component. No-one yet knows how negotiations between the EU authorities. Uncertainty about future limit

values is not stopping Xmultiple from continuing to introduce lead-free components to the market.

Section 5

ROHS Conformance –Related Notes.

1. Details of the ban of cadmium in paints by the EU Directive 91/338/EEC:
 - If the paints have a high zinc content, their residual concentration of cadmium must be as low as possible and at all events not exceed 0,1 % by mass."
2. Details of the the ban of cadmium, hexavalent chromium, lead and mercury in the EU Directive 94/62/EEC:
 - The sum of concentration levels of cadmium, hexavalent chromium, lead and mercury in packaging or packaging components shall not exceed 0,01% by weight.
3. Exemptions to the ban of lead as a plastic stabilizer
 - Use in pipes, tubes and ducts allowed 1.12.2003
 - Use in electrical cables incorporated into products allowed until further notice
4. Exemptions to the ban of cadmium in the proposed EU RoHS Directive:
 - Cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations.
5. Exemptions to the ban of cadmium in the EU End of Life Vehicles Directive 2000/53/EC:
 - No exemptions
6. Exemptions to the ban of chromium VI in the proposed EU RoHS Directive:
 - Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
7. Exemptions to the ban of chromium VI in the EU End of Life Vehicles Directive 2000/53/EC:
 - Corrosion preventative coating on numerous key vehicle components (maximum 2 g per vehicle)
8. Exemptions to the ban of lead in the proposed EU RoHS Directive:
 - Lead in glass of cathode ray tubes, [...], electronic components and fluorescent tubes
 - Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminium containing up to 0.4%

- lead by weight and as a copper alloy containing up to 4% lead by weight
- Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85% lead)
- Lead in solders for servers, storage and storage array systems (exemption granted until 2010)
- Lead in solders for network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunication
- Lead in electronic ceramic parts (e.g. piezoelectronic devices).

9. Exemptions to the ban of lead in the EU End of Life Vehicles Directive 2000/53/EC:

- Lead as an alloying element
- Steel (including galvanised steel) containing up to 0,35 %lead by weight
- Aluminium containing up to 0,4 %lead by weight
- Aluminium (in wheel rims, engine parts and window levers) containing up to 4 % lead by weight
- Copper alloy containing up to 4 %lead by weight
- Lead/bronze bearing-shells and bushes

Lead and lead compounds in components

- Batteries
- Coating inside petrol tanks
- Vibration dampers
- Vulcanising agent for high pressure or fuel hoses
- Stabiliser in protective paints
- Solder in electronic circuit boards and other applications

10. Exemptions to the ban of mercury in the proposed EU RoHS Directive:

- Mercury in compact fluorescent lamps not exceeding 5 mg per lamp
- Mercury in straight fluorescent lamps for general purposes not exceeding
 - ✓ halophosphate 10 mg
 - ✓ triphosphate with normal lifetime 5 mg
 - ✓ triphosphate with long lifetime 8 mg
 - ✓ Mercury in straight fluorescent lamps for special purposes
 - ✓ Mercury in other lamps not specifically mentioned in the exemptions

11. Exemptions to the ban of mercury in the EU End of Life Vehicles Directive 2000/53/EC:

- Bulbs and instrument panel displays

12. Exemptions on the ban of Mercury in the Rhode Island Mercury Reduction and Education Act, 2001-H6161A, 13.07.2001

- Fluorecent lamps excempted. As of 1.1. 2010 the mercury content in fluorecent bulbs shall not exceed 10 mg, or the manufacturer shall

comply with the exemption requirements pursuant to section 23-24-9-7(f) of the Act.

- Exemption in place for section 23-24.9-7(a) requirements if the mercury is present in the product in order to comply with federal or state health or safety requirements.

13. Exemptions to the ban of pentaBDE in the 24th amendment of EU Directive 76/769/EEC

- Maximum concentration of octaBDE in the flame retarded part is 0,1 w-%

14. Exemptions to the ban of decaBDE and octaBDE in the 24th amendment of EU Directive 76/769/EEC

- Maximum concentration of decaBDE in the flame retarded part is 0,1 w-%

15. Exemptions to the ban of PBB and PBDE in the proposed EU RoHS Directive:

- No exemptions

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