

Update on WEEE and RoHS April 2005



- WEEE Directive 2002/96/EC
 - Producer responsibility for retailer take back schemes and recycling costs.
 - System implemented - **13th August 2005**
 - Collection and recycle targets - **31st December 2005**
- RoHS Directive 2002/95/EC
 - Restriction on the use of certain hazardous substances.
 - Lead, Cadmium, Mercury, Hexavalent Chromium, Polybrominated biphenyl (PBB) and Polybrominated diphenyl ether (PBDE) (flame retardant)
 - Applicable to products in the market from **1st July 2006**

- Exemptions to the RoHS Directive:
 - Product Group Level - end use categories and devices, i.e. Medical devices.
 - Application level - driven by significant functionality issues (including reliability) and no viable substitute for the hazardous substance, i.e. Pb in glass for CRT.

	Catagories of Electrical and Electronic Equipment covered by Directives (Annex 1A WEEE)	WEEE Directive 2002/96/EC	RoHS Directive 2002/95/EC
1	Large household appliances	★	★
2	Small household appliances	★	★
3	IT and telecommunication equipment	★	★
4	Consumer equipment	★	★
5	Lighting equipment	★	★
6	Electrical and electronic tools (with the exception of large scale industrial tools)	★	★
7	Toys, leisure and sports equipment	★	★
8	Medical devices (with the exception of implanted and infected products)	★	⊘
9	Monitoring and control instruments	★	⊘
10	Automatic dispensers	★	★

- Recycling applies to all product categories.
- RoHS does not apply to 8 and 9.

8	Medical devices (with the exception of implanted and infected products)
	Radiotherapy Equipment
	Cardiology
	Dialysis
	Pulmonary Ventilators
	Nuclear Medicine
	Laboratory equipment for <i>in-vitro</i> diagnosis
	Analysers
	Freezers
	Fertilization tests
	Other appliances for detecting, preventing, monitoring, treating, alleviating illness, injury or di

- Product Groups that are exempt from the RoHS Directive.

9	Monitoring and control instruments
	Smoke detectors
	heating regulators
	Thermostats
	Measuring, weighing or adjusting appliances for household or as laboratory equipment
	Other monitoring and control instruments used in industrial installations(e.g. in control par
	Laboratory equipment for <i>in-vitro</i> diagnosis
	Analysers
	Freezers
	Fertilization tests
	Other appliances for detecting, preventing, monitoring, treating, alleviating illness, injury or di

- Other product group exemptions apply:
- Military is specifically mentioned in the scope of WEEE - see box →
- Automotive is covered by the ELV Directive
- Aeronautic and Aerospace product groups have requested a specific exemption. Due to high reliability requirements.

Article 2

Scope

1. This Directive shall apply to electrical and electronic equipment falling under the categories set out in Annex IA provided that the equipment concerned is not part of another type of equipment that does not fall within the scope of this Directive. Annex IB contains a list of products which fall under the categories set out in Annex IA.
2. This Directive shall apply without prejudice to Community legislation on safety and health requirements and specific Community waste management legislation.
3. Equipment which is connected with the protection of the essential interests of the security of Member States, arms, munitions and war material shall be excluded from this Directive. This does not, however, apply to products which are not intended for specifically military purposes.

- RoHS Application Level exemptions:
 - Original exemption list is to be updated.
 - Current consultation list of 22 further proposed exemptions.
 - All exemptions currently agreed by the TAC committee may have to be re assessed due to possible violation of European Parliament rules, this includes the maximum concentration values for RoHS substances.
 - This may mean a delay in finalising the exemptions list.

- Current RoHS Exemptions for Lead (Pb):
 - In glass of CRT, electronic components and fluorescent tubes.
 - Alloying agent in Steel (up to 0.35%wt) Aluminium (up to 0.4%wt) and Copper (up to 4%wt)
 - In high melting temperature type solders (i.e. lead based alloys containing 85% by weight or more Pb)
 - In electronic ceramic parts e.g. piezoelectric devices
 - In solders for : Servers, storage and storage array systems , network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications

- New Exemptions for Lead (Pb) subject to agreement by European Parliament
 - Compliant Pin Connector systems
 - Coating materials for thermal conduction module c-ring
 - In optical and filter glass.
 - Solders consisting of 2 or more elements for the connection between pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight.
 - In solders to complete a viable connection between semiconductor die and carrier within integrated circuit flip chip packages

- RoHS Exemptions currently in consultation stage currently 22 items: Includes Aeronautic and Aerospace
- Full listing at http://europa.eu.int/comm/environment/waste/rohs_consult.htm



Stakeholder consultation on

Adaptation to scientific and technical progress under Directive 2002/95/EC of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment for the purpose of a possible amendment of the annex

- RoHS position on Halogens:
 - Only two specific Halogen containing compounds are restricted by RoHS
 - They are both flame retardant :- Polybrominated biphenyl (PBB) and Polybrominated diphenyl ether (PBDE).
 - FR4 style laminates produced by Polyclad do not contain either of these compounds.
 - Polyclad also offer a totally “Halogen Free” laminate.

polyclad

PCL-HF-541 Laminate/PCL-HFP-541 Prepreg
Halogen-Free FR-4 Laminate and Prepreg
(Tg 145°C)

- Measurement of PBB and PBDE
 - Two methods of analysis
 - The first is a total quantitative Bromide. This is conducted by incinerating the sample in an oxygen flask, extracting the gases into a solvent and titrating to measure total Bromide. This will pick up all bromine containing compounds and will report as % bromides.
 - The second is more expensive Gas Chromatography mass spectroscopy and will indicate the specific brominated compounds that are present.
 - Tin Technology UK offer these services
 - http://www.tintechnology.biz/soldertec/soldertec.aspx?page_id=0
 - If flame retardant contain bromine compounds then these will be measures as total bromide using the oxygen flask method.
 - RECOMMENDATION - use Gas Chromatography mass spectroscopy

ANNEX II

Selective treatment for materials and components of waste electrical and electronic equipment in accordance with Article 6(1)

1. As a minimum the following substances, preparations and components have to be removed from any separately collected WEEE:
 - polychlorinated biphenyls (PCB) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT) ⁽¹⁾,
 - mercury containing components, such as switches or backlighting lamps,
 - batteries,
 - printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimetres,
 - toner cartridges, liquid and pasty, as well as colour toner,
 - plastic containing brominated flame retardants,
 - asbestos waste and components which contain asbestos,
 - cathode ray tubes

- Although only two specific compounds PBB and PBDE are restricted, if the WEEE contains brominated flame retardant then these must be removed separately from the waste.

- Summary

