

International Materials Restrictions

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Coated Wire and Cable Supply Chain Meeting
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International Materials Restrictions (Pb)

- European Electronics regulations – WEEE, RoHS
- European Vehicle End-of-Life Directive
- Proposition 65
- Market forces for green labeling & take-back (OEMs, Nordic Swan, TCO)
- Japanese take-back and recycling laws; voluntary initiatives

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European Commission DG Environment

Sustainable Resources, Consumption and Waste

The content of the WEEE Directive:

- Treatment according to minimum requirements
- Minimum recovery targets plus combined targets for re-use and recycling
- ✓ Large Household Appliances and Automatic dispensers Recovery 80% by weight. Re-use and Recycling 75%
- ✓ IT, telecommunications, and consumer equipment Recovery 75%, Re-use and Recycling 65%
- ✓ Small household appliances, Lighting equipment, Toys, Monitoring and control instruments Recovery 70%, Re-use and Recycling 50%

Courtesy of Aaron McLoughlin, European Commission DG Environment

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European Commission DG Environment

Sustainable Resources, Consumption and Waste

Implementation scenarios:

- Dec 2002 Adopted by Council and Parliament
 - Feb 2003 Publication and entry into force
 - Sep 2004 Deadline for transposition in Member States
 - Sep 2005 Collection systems must be operational; treatment and financing obligations enter into force
 - Dec 2006 Collection and financing targets to be attained
- ↓ *How the Directive is going to be implemented in detail is a matter for the Member States*

Courtesy of Aaron McLoughlin, European Commission DG Environment

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EU RoHS Directive

- Substitution of certain heavy metals and brominated flame retardants where alternatives are available
- Phase-out by July 1, 2006.
- Heavy metals: Mercury, lead, cadmium and hexavalent chromium
- Brominated flame retardants:
 - ✓ PBBs (polybrominated biphenyls) & certain PBDEs (polybrominated diphenylethers)
 - Penta- and Octa-BDE risk assessments recommended phase-out by 2003.
 - An exemption for Deca-BDE possible; otherwise phase-out by 2006.

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EU End-of-Life Vehicle Directive

1. Directive passed in Sept 2000
2. Covers vehicles and their components and materials
3. Prevention of waste by re-use and recycling
4. Limit use of hazardous substances to prevent release to environment and ease recycling
 - ✓ Phase out lead, mercury, cadmium, and hexavalent chromium by July 2003 (list of exemptions may be modified by EC as substitutes become available)

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Implementation Considerations

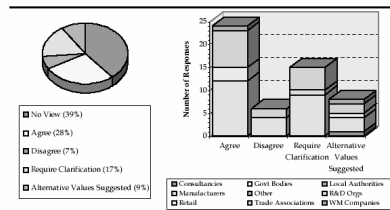
- Technical Adaptation Committee (TAC), chaired by the European Commission and comprising of Member State representatives, is considering follow up issues for the WEEE and RoHS Directives.
- UK Government published a consultation paper November 25, 2003 setting out proposals for implementation of the WEEE and RoHS Directives.
- Latest UK Consultation ended March 1, 2004

<http://164.36.164.20/sustainability/weee/index.htm>

16.1 ROHS DIRECTIVE QUESTION 7

Do you agree with the European Commission's initial proposals for the maximum concentration values?
If not, can you suggest alternative values and support your views with relevant evidence?

Figure 16.1 ROHS Question 7 (64 Responses)



De minimus Levels in RoHS

- no formally adopted de minimus levels of substances restricted by RoHS
- UK government's consultation paper of November 2003: The Government proposes: to attempt to secure agreement by the TAC of a limit of 0.1% by weight and per homogeneous material for lead, hexavalent chromium, mercury, PBBs and PBDEs and 0.01% by weight and per homogeneous material for cadmium

<http://164.36.164.20/sustainability/weee/consultationpartiii.pdf>

Definition of "put on the market" not Final

"phase in" period ENDS on July 1, 2006; clarification likely in 8/04

Meaning for EU Countries

- Manufactured After 30th June 2006
- Leaving Factory Gate
- On Sale to Final User
- When it is introduced for the first time into any part of the EU distribution chain.
- Date of manufacture as identified on the rating plate

Meaning for non-EU Countries.

- Entry to the EU
- Goods received by the importer after 30 June 2006.
- Should apply to goods leaving the factory gate even if the manufacturer is located outside the single market.

UK RoHS Consultation

1. Define "put on the market" by 6/30/06?
2. Should exemption for spare parts apply only to equipment that has been sold 6/30/06?
3. Is definition of 'electrical and electronic equipment' is adequate?
4. The definition for 'producer' for procurement of EEE from outside the EC
5. Are the exemptions to the ROHS Directive both clear and practicable?
6. Should products intended specifically for military purposes be exempt?
7. Definition of maximum concentration values?
8. Maximum concentration values apply to 'specific materials and components' but "components" are not defined.
9. Is there a case for additional exemptions
10. Should the inclusion of Deca BDE should be delayed until the risk reduction strategy has been completed?

EC & de minimus levels

- EC Consultation 5/ 03 w/ comments by 1/04

"A maximum concentration value of 0.1% by weight in homogeneous materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and of 0.01% weight in homogeneous materials for cadmium shall be tolerated. Homogeneous material means a unit that can not be mechanically disjointed in single materials".

- But, at the January TAC mtg, 3 member states felt the levels were too high
- One member state wanted levels reexamined every 4 years.

China

Draft legislation to eliminate certain chemical substances contained in electronic products:

- Cadmium
- Hexavalent chromium
- Lead
- Mercury
- PBBs
- PBDEs

Manufacturers will be required beginning July 1, 2003, to certify that they comply with these requirements.

Grace period until July 1, 2006, to fully comply with the restrictions.

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Proposition 65

- List of 700+ chemicals with adverse impacts, including lead, antimony trioxide, DEHP, and cadmium
- In 2000, lawsuits against jacketed wire & cable manufacturers & resellers for Pb
- NEMA coordinated consent judgment for prior failure to warn and determined compliance paths
- Applies to any firm that sells or re-sells product to a retail consumer in California
- Establishes a list of exempt and non-exempt products
- Requires products with >300 ppm lead in outer contact surface layer to be labeled
- Notification of customers via letter except for consumer customers

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State & National Initiatives

- **Michigan:** Bills to ban the use of PBDEs in all products by 2006 introduced in 2002 & 2003 (HB 5575 and HB 4406, respectively), failed to progress in the legislature
- **California:** banned penta and octa PBDE; now some discussion of extending to deca
- **Washington:** WA state has started a governor sponsored effort to substitute PBDEs under the state's PBT policy
- **Bills in RI, TX, & VT** also introduced e-waste bills to phase out Pb, Cd, Hg, Cr^{VI}, PVC, & BFRs
- **National - Hilda Solis (D) from CA** is proposing national legislation to ban penta and octa PBDE.

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State Initiatives

- **Maine Bill** proposed in 2003
- Applied to "electronics equipment"
- phase out all brominated fire retardants, lead, mercury, cadmium, hexavalent chromium and polyvinyl chloride (PVC) by 2006.
- "limited-term" exemptions if there are no feasible alternatives
- Amended to be a CRT landfill ban bill
- **New bill in legislature to phase out BFRs:** An Act To Reduce Contamination of Breast Milk and the Environment from the Release of Brominated Chemicals in Consumer Products

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OEMs Flame Retardant Materials Restriction Initiatives

- **Apple** - no BFRs in casing
- **Cannon** - Actively uses plastics with halogen-free FR
- **Hitachi** - Flora 220FX printed circuit board halogen-free
- **IBM** - Has 100% recycled plastic computer that doesn't use halogenated FRs
- **NEC** - halogen-free and phosphorus-free plastic called NuCycle used for computer casing
- **Panasonic** - using halogen-free technologies for PCs and monitors
- **Sony** - substituted halogen-free FRs for halogenated FRs for cabinets and PWB in some models. Antimony targeted as halogen synergist.
- **Toshiba** - DynaBook SS3490 PC uses halogen/antimony free FRs.
- **Xerox** - phased-out BFRs in the early 90s
- **Dell, Logitech, Microsoft** - work under way to phase all PBDEs and potentially all halogenated FRs as part of halogen-free electronics initiative.

Some of the alternatives used: magnesium alloys, polycarbonate plastics.

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