

Wire and cable: environmental issues and drivers

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Chemicals and materials of concern in coated wire and cable

- ◆ Antimony and compounds
- ◆ Barium and compounds
- ◆ Cadmium
- ◆ Chromium and compounds
- ◆ Halogenated flame retardants
- ◆ Lead and compounds
- ◆ Phthalates (e.g., DEHP, DIDP, DINP)
- ◆ PVC and dioxin
- ◆ Zinc and compounds

Environmental Drivers

Proposed WEEE/RoHS Directives (6/13/00)

- ◆ Collection for recovery, recycling and re-use of end-of-life equipment
- ◆ Bans the use of some toxic materials such as lead, cadmium, brominated flame retardants
- ◆ Categories of equipment covered
- ◆ Expected to become a law in 2002

Environmental Drivers - cont'd

Home appliances recycling law in Japan:

- ◆ Enacted in 1998; fully enforced in 2001
- ◆ Manufacturers and importers of four large electrical home appliances to take back discarded products and reuse/recycle them (TV sets, refrigerators, washing machines and air conditioners).
- ◆ Similar ordinance adopted in Taiwan.

Environmental Drivers - cont'd

Other Take-Back Initiatives:

- ◆ **Switzerland** - ordinance on the take-back and disposal of electrical and electronic appliances entered into force July 1, 1998.
- ◆ **Norway** - ordinance on the acceptance, collection, recycling and disposal of discarded electrical and electronic equipment, adopted March 1998.

Environmental Drivers - cont'd

Proposition 65 in California:

- ◆ List of chemicals (cancer, reproductive harm)
- ◆ Labeling requirements
- ◆ Lawsuits for exposure to lead in PVC wire and cable products (Mateel Environmental Justice Foundation vs. Microsoft (Superior Court of the State of California))
- ◆ Companies looking at product reformulation (0.03% lead) or labeling.

Environmental Drivers - cont'd

Concerns over PVC:

- ◆ Phase-out campaigns (Greenpeace, Joint Commission on the Great Lakes, American Public Health Association)
- ◆ April 3, 2001, the European Parliament voted for substitution policy for PVC, banning of lead in PVC, marking products, separate waste collection, ban on incineration, 'polluter pays' principle
- ◆ May 15, 2001, U.S. EPA's SAB long-stalled report on the cancer risk of dioxin sent to federal government.

Environmental Drivers - cont'd

Other EU activities on heavy metals:

- ◆ **Cadmium:** Directive 91/338/EEC, amendment to the “Use Ban” Directive (prohibits cadmium use for pigments, stabilizers and surface treatment)
- ◆ **Lead:** KEMI (The Swedish Chemical Inspectorate) to phase-out lead in PVC - July 1, 2001

Environmental Drivers - cont'd

Halogenated Flame Retardants:

- ◆ European vs. U.S. fire safety standards
- ◆ Draft WEEE/RoHS Directives ban PBB and PBDE
- ◆ Denmark - Action Plan to phase-out most problematic brominated flame retardants
- ◆ Austria - banned the use of PBB in 1993
- ◆ Germany - use of PBDE is prohibited
- ◆ Sweden - proposed ban on PBDE and PBB
- ◆ Others?

Environmental Drivers - cont'd

Phthalates and endocrine disruption:

- ◆ EU strategy to tackle these substances and priority list for evaluation
- ◆ U.S. EPA - final plans to establish advisory committee to develop tests and policies
- ◆ Illinois EPA - preliminary list of endocrine disrupting chemicals
- ◆ DIDP and DINP - less toxic than DEHP but currently under extensive risk assessment in EU.

Potential Wire and Cable Strategies:

1. Transition to lead-free PVC
2. Elimination of halogenated /brominated flame retardants
3. PVC-free wire and cable
4. Halogen free wire and cable

No single strategy but combination of multiple strategies will address the EHS issues over time

TURI Wire & Cable Project

Information Gathering

- Background on Issues and Industry
- Focus Group

R&D and Technology Diffusion Plan

- E.g., information products, demonstration grants, research, etc.