ChemSec
The International Chemical Secretariat

Information on Chemicals in Electronics

Nardono Nimpuno, Senior Policy Advisor

SAICM Chemicals in Products Project. Workshop.
Geneva, 16-18 January 2011

Content

- Background
- Electronics Case-Study
- Findings
- Conclusions & Ways Forward

Background
CiP

The Strategic Approach to International Chemicals Management (SAICM)

- achieve the sound management of chemicals throughout their life cycles so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment

- Objective 15 (b): information on chemicals throughout their life cycle, including, where appropriate, chemicals in products, should be available, accessible, user friendly, adequate and appropriate to the needs of all stakeholders

Electronics?

The term electronics/electronic products is used to cover both electrical and electronic equipment, often referred to as EEE.

The European WEEE directive:
'electrical and electronic equipment' or 'EEE' means equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields […] and designed for use with a voltage rating not exceeding 1000V for alternating current and 1500V for direct current.'

Background
CiP Electronics

Focus on Personal Computers and Mobile phones

- rapid increase in sales - e-waste fastest growing waste stream.
  - short life spans on the market.
- forefront of technological development and innovation.
- widely used - industrialized countries and increasing in developing countries.
- recycling issues, informal/formal.

Participants

- 38 in-depth interviews throughout value chain

- Chemicals producers
- Components manufacturers
- Brand owners
- Consumers (incl NGOs and PIOs)

- Recyclers and waste handlers (Formal sector)
- Recyclers and waste-handlers (Informal sector)

Information Systems

Regulatory
- RoHS
- China RoHS
- Reach
- Reach candidate list of SVHC
- WEEE
- Globally Harmonized System for Classification and Labeling of Chemicals (GHS)
- California's Proposition 65

- Eco-Labels
- SIN List

Industry-wide
- Joint Industry Guide (JIG)
- IEC Industry standard
- GPS
- IPC 1752 standard
- EPEAT

- Industry RSLs
- Company RSLs

Findings: Information Use

- Generally, same info systems for PC and mobiles, and for the various components
- Main info exchange often with adjacent actor in the value chain

- Many companies feel that existing systems are not sufficient to meet their particular information needs, and often develop their own approach, with eg internal systems for substance restrictions, information exchange, supply chain management .

Needs

Needs: Producers

Reduce costs when planning, designing and carrying out production.

Foresee future business risks as well as opportunities:

- Stay ahead of regulation on chemicals used.
- Preferences, demands and expectations of customers.
  - Maintain good product quality
  - Time to innovate solutions
  - Point of differentiation
- Availability of materials and components.
  - Plan inventory, shipments, and sales.
- Present or future product liability.
- Protection of the workforce.

Needs
Other Stakeholders

Authorities need access to relevant information
- in their efforts to control the flow of discarded electronics.
- to develop appropriate policies and measures.

Recyclers need information on
- hazardous chemicals and valuable material in e-waste.
- often awareness of environmental risks is low among recyclers.

Consumers in general assume that the products they purchase and use are safe for them as well as for the environment.

Upstream manufacturers:
- How are their products handled, were do they end up?

Improved Information flow
Benefits

Designers, companies in the supply chain,public purchasers, consumers:
- make informed choices about the products they purchase.
- Informed choices when designing, developing and improving products.

With better information on exposure, the development of products with improved environmental performance is promoted, which contributes to less toxic material to handle in recycling and decreased release of toxics into the environment.

Challenge: How to include Environment and EoL in design stage?

Feedback on Info systems

Chemical Producers

- Create the basic chemicals, blends of chemicals, and materials (e.g., plastics and polymers for product casings, plating chemicals, solvents, paints and coatings, and metal finishes) for mobiles and PCs.

Findings: Chemical Producers

- Risk assess products; sell for intended uses.
- "Push" information to customers.
- In general more emphasis on function rather than environment.

- Various types of "Pull" information freely available to all others (e.g., company websites, GPS).
- Not sure how far "push" info travels in supply chain or who "pulls" info.

Components Manufacturers

- Large web of components manufacturers
  - make eg molded plastic casings to disc drives and circuit boards

- Often several tiers of suppliers between chemical producers and brand owners

Findings: Components Manufacturers

- Fairly neutral, demand-driven by downstream requests.
- Provides what the next actor requires.
- Some strive to be ahead of regulation
- Faced with a myriad of different types of information requests.
- Prefer standardization of requirements.

Findings: Brand Owners

- Components assembled into finished products
  - final products sold to other businesses and/or consumers

Findings: Brand Owners

- Liable and responsible for their products.
- Reputation, branding.
- Pull info from different sources
- *"Info on uses and exposure not communicated upstream to chemicals manufacturers".*

- Difficult: Agreement on what chemicals are the most prioritized. What chemicals to include in RSL.

Findings: Formal Recycling

- A chain of different actors with different priorities
- Priority: precious/valuable material
- Limited interest in additional info
- Equate legal with safe
- Legal requirements often limited to general workers protection.

Informal Recycling

- Refurbishers, Recyclers, Waste-handlers in developing countries.
- Refurbish second-hand electronics, extract precious metals
- International trade
- Crude methods with negative human health and environment impacts.
- Poor, no education, under-aged

Findings: Informal Recycling

- Information available in the right language?
- Literacy?
- Lack of knowledge / resources for Best Practices.
- EPR does not apply to developing countries?
- Alternative methods or sources of income?
- Appropriate info, eg radio-campaigns, pictures etc.

Findings product chain

- Topp-end says they provide the relevant info.
- Many brand-owners feel that chemicals manufacturers do not have info on how the chemicals are used, and that they do not have enought hazard information about the chemicals that go into their products.

- Information is generated, and passed on to someone, but does not reach the ones who need it!
- General perception is that recyclers do not ask for chemicals info.
- Informal recycling: Low awareness of risks/no viable alternatives.

Gaps and Obstacles

Gaps and obstacles
Product chain

- Upstream manufacturers of chemicals vs information needs further downstream.
- Along the supply chain to the final brand owners.
- Production-phase vs the recycling phase.
- Formal product chain vs informal waste-handlers in developing countries.

Gaps and obstacles
Availability of information

- Information provided for *intended use* vs information needs arising from *unintended* use.
- What information is *needed (relevant)* and what information is *available*.
- Different understandings of what is proprietary information.

Proprietary information

Often perceived as an obstacle

- Many suppliers consider all formulation data proprietary, even standard material formulations
- Some companies formally oppose providing data beyond the bare minimum
- Recipients need to show suppliers that data can be protected
- We need to have open discussions about what really is and is not proprietary

Ways forward

Key actors for improved CiP information

- Manufacturers of chemicals and materials.
  - at the starting point in the product chain.
  - gatekeepers of CiP information.
- The brand owners, responsible for placing products on the market.
  - involved in numerous stages of product development and manufacture.
  - drive information requirements on the product developed.
  - liability: all eyes on the OEMs.
- Original Design Manufacturers
  - increasing in size and supply-chain leverage.

Key requirements for information systems

- Information must flow *down* the product chain, but also travel *up* the product chain.
- *Relevant* information must be *available* when the particular need for that particular type of information arises.
- The information generated and provided must take into account not only the *intended* use or handling of a product, but also the *likely or probable fate* of that product.
- The information provided must be *comprehensible, accessible and appropriate* for the particular stakeholder who needs the information for safe handling of the product in the particular stage of the life cycle of that stakeholder.

Recommendations for improved flow of CiP information

- Define the scope of “proprietary information” for the sector.
- Agreement on which chemicals must be *reported* by suppliers, the information to be communicated, above what thresholds.
- Obligation to provide information on impacts throughout the life cycle of chemicals present in electronics. (Eg.EPR)
- Further development of certification systems for recycling. Include tracking of materials.
- Further develop tools required to communicate CiP information: Data-formats, soft-ware packages, escort informations systems etc.

Measures for reducing risks from chemicals in electronics

- Agreement on which chemicals to be avoided in products. Industry –wide RSLs.
- Further development of standards and labels, eg for comparison of products.
- Regulations and/or guidelines on eco-design and environmental claims.
- Development of business models for safe and profitable e-waste handling in developing countries.

Measures for reducing risks from chemicals in electronics

Information campaigns:

- Aimed at consumers on appropriate waste handling, how e-waste is commonly is exported and inappropriately managed in developing countries.

- In developing countries, aimed at authorities and waste handlers, on CiP information, human and environmental health impacts of e-waste handling and appropriate waste management practices.

What is beyond CiP info?

Access to CiP information is oftentimes a prerequisite for

- ✓ identifying potential problems associated with chemicals in products
- ✓ develop solutions to these problems.
- ✓ make informed choices
- ✓ adapting production, consumption, use and handling of products in order to minimise adverse effects to human health and the environment.

Thank You!