
IPC- Association Connecting Electronics Industries appreciates the opportunity to comment on the *Methodology for Identification and Assessment of Substances for Inclusion in the List of Restricted Substances (Annex II) under the RoHS2 Directive* (hereafter referred to as draft manual). We acknowledge the effort the Austrian UBA has invested in developing the draft manual. However, are deeply concerned that the methodology outlined in the draft manual will be unable to appropriately identify and prioritize substances that, if restricted under the RoHS directive, will increase the protection of human health and the environment. In order to ensure that additional substance restrictions will result in improvements in human health and the environment, the draft manual must be revised to ensure comprehensive evaluations of all substances, including those nominated by member states. Comprehensive evaluations and prioritization that will result in a focus on substances with most significant potential to improve human health and the environment must include the consideration of both the intrinsic hazards associated with a substance and potential exposure to the substance throughout the entire substance life-cycle. Equally important, potential alternatives must be thoroughly evaluated prior to banning a substance. Failure to evaluate available alternatives could result in substitution with materials that have a negative impact on the environment or human health. Finally, in order to avoid the creation of a de-facto blacklist of substances, IPC supports Mr. Eberl’s recommendation to keep the proposed database of substances used in electronics private.

About IPC

IPC, a U.S. headquartered global trade association, represents all facets of the electronic interconnection industry, including design, printed board manufacturing and electronics assembly. Printed boards and electronic assemblies are used in a variety of electronic devices that include computers, cell phones, pacemakers, and sophisticated missile defense systems. IPC has over 3,400 member companies, including approximately 400 member companies located in Europe. IPC strongly supports cost effective, science-based environmental initiatives and has been active in a number of voluntary environmental programs including the US EPA’s Design for the Environment partnership projects, the development of the Electronic Product Environmental Assessment Tool (EPEAT) standard, and the development of the Greener Chemicals and Process Information Standard, developed through the American Chemical Society and the National Standards Foundation.
Exposure and Hazard Assessments Must Be Taken Into Consideration When Evaluating and Prioritizing Substances

The evaluation and prioritization of substances must be based on both hazard and exposure assessments in order to ensure a genuine benefit to human health and the environment. Hazard and risk assessments are complimentary and must both be evaluated in order to ensure substances with the greatest impact are selected for restriction. The potential hazard of a substance, combined with the exposure, completely determines the risk associated with specific uses of a substance in electronics. Only by considering both of these factors, hazard and exposure, can one properly understand the risk associated with the use of a substance. Selection of substances for restriction based solely on hazard can lead to prioritization that does not address the greatest risks to human health and the environment. For example a substance that is only slightly toxic, but that is absorbed through the skin every time a person touches an electronic item should be a high priority for restriction, while a very toxic substance that is used in very small quantities during a carefully controlled manufacturing process might present less of a risk to health and the environment. While hazard assessments are generally cheaper and quicker to conduct than risk assessments, banning a substance based solely on a hazard assessment could result in unintended trade-offs and consequences. Consideration of both hazard and exposure prioritizing substances for restriction under the RoHS2 Directive will ensure that the substances selected for restriction will result in the largest possible reduction in risk to human health and the environment.

The EU risk assessment methodology (EU RAM) would be an appropriate mechanism for evaluating substances for restriction. IPC supports (Semiconductor Equipment and Materials International’s (SEMI’s) proposal\(^1\) to use the EU RAM as part of the methodology for evaluating substances for restriction. While a hazardous substance may be present in an article, the likelihood of the substance migrating out of the article in a form and concentration that is dangerous must be considered. IPC encourages the Commission to adopt the approach proposed by SEMI to ensure hazard and exposure are considered prior to restricting a substance.

Potential Alternatives Must Be Thoroughly Evaluated Prior to Banning a Substance

Potential alternatives must be thoroughly evaluated prior to banning a substance under the RoHS2 Directive to ensure they provide an increased benefit to the environment and human health. A growing number of jurisdictions and non-governmental organizations are pursuing methodologies for the evaluation of a substance’s alternatives prior to implementing a ban on a particular substance in order to ensure positive outcomes. Programs such as GreenScreen for Safer Chemicals\(^2\) and the pending Safer Consumer Products regulation from California\(^3\) consider the availability and viability of potential alternatives to hazardous substances. Evaluating potential alternatives prior to implementing a ban has received positive feedback from stakeholders because it is effective and ensures alternatives to banned substances do not cause increased harm to human health and the environment. The Commission must evaluate potential

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\(^1\) SEMI comments submitted as part of the 3rd Internet Consultation. 10 June 2013. Available at http://www.umweltbundesamt.at/rohs2

\(^2\) http://www.cleanproduction.org/Greenscreen.php

\(^3\) http://www.dtsc.ca.gov/SCPRegulations.cfm
alternatives prior to restriction in order to ensure an increased human health and environmental benefit.

The restriction of substances prior to evaluating alternatives can result in unintended consequences, leading to a net effect of no increased environmental benefit or even worse, an outcome that harms the environment and human health. As an example of the importance of considering alternatives, following the restricted use of lead in electronics under the RoHS Directive, the U.S. EPA conducted a lead-free solder study\(^4\) that evaluated the environmental impacts of tin-lead solder versus lead-free alternative solders. The study found that the increased energy use associated with the higher operating temperatures required for manufacturing lead-free soldered electronics would cause higher air pollution, acid rain, stream eutrophication and global warming impacts than tin-lead soldered electronics. EPA’s study serves as an important reminder that there are environmental tradeoffs when substituting one substance for another. Before additional substance restrictions are included in the RoHS Directive, there should be clear and compelling scientific evidence that potential substitutes are better for the environment and human health.

The decision to prohibit a substance should not be undertaken lightly. Electronics manufacturers use specific materials because of their unique energy efficiency, safety or performance characteristics. Commitment of scarce societal resources must be guided by the best available science. Otherwise resources will be wasted and the environment and human health will suffer as resources are squandered pursuing goals that do not provide an environmental or health improvement over the status quo. Elimination of specific substances requires a great deal of research and development of alternative substances, requiring the investment of time and resources by electronics manufacturers. Similarly, implementing and enforcing regulations requires significant investment by authorities. It is essential that any substance restrictions added to the RoHS2 Directive be supported by strong scientific evidence in order to accomplish the goal of maximum human health and environmental protection.

**Only Legal Management of WEEE should be considered**

IPC strongly supports Mr. Eberl’s desire to have the methodology take into account only legal EOL waste management operations in the EU\(^5\). Improper EOL waste management practices are unacceptable and should be regulated. The risks associated with improper EOL waste management practices, such as uncontrolled burning, cannot be effectively managed by regulating substances contained in a product. Improper EOL waste management practices cause a variety of health and environmental risks and should be restricted.

**The Database of Substances Used in EEE Should Not Be Made Public**

The database of substances used in EEE should not be made public. IPC agrees with and supports Mr. Eberl’s position\(^5\) that the database of substances will not be made public. Listing

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\(^5\) Mr. Eberl’s statement made during the second stakeholder meeting. Second stakeholder meeting “Study for the Review of the List of Restricted Substances under RoHS2,” 14 May 2013 at Avenue de Beaulieu 5, 1160 Brussels, Room 00/C.
substances prior to fully evaluating the environmental, social and economic impacts of potential alternatives will create de facto black lists and could have detrimental unintended environmental consequences. Electronics manufacturers use certain chemicals of concern because of their unique energy efficiency, safety or performance characteristics when no viable or environmentally-preferable substitutes exist. Listing chemicals and products to be banned without conducting thorough, comprehensive alternatives assessments will inevitably lead to inadvertent negative environmental impacts.

All Nominated Substances Should be Subject to the Same Level of Evaluation

All nominated substances, including those nominated by Member States, should be subject to the same evaluation criteria. The draft manual is intended to ensure all substances found in EEE that pose potential harm are evaluated according to the same set of criteria. By having all substances, including those nominated by Member States, evaluated according to the same criteria, the EU Commission will ensure there is a strong scientific basis for any proposed substance restrictions. IPC encourages the Commission to ensure all substances for potential restriction under the RoHS Directive undergo the same evaluation.

Conclusion

IPC thanks the Commission for the opportunity to provide feedback on the draft manual. In order to ensure that additional substance restrictions result in a positive environmental impact the draft manual must be revised to include both hazard and exposure evaluations of substances. Considering both hazard and exposure will ensure the most harmful substances are addressed under the RoHS2 Directive. The draft manual must also be revised to ensure potential alternatives are properly evaluated to ensure they provide an increased benefit to human health and the environment. IPC supports the Commission’s decision to focus on legal waste management when evaluating substances for potential restriction under the RoHS2 Directive. IPC encourages the Commission to take our recommendations into consideration when finalizing the methodology.

Sincerely,

Fern Abrams
Director, Government Relations and Environmental Policy