



The following IPC comments were submitted electronically to EPEAT (a partnership of EPA, Green Electronics Council and Zero Waste Alliance) regarding the development of the EPEAT Standards Development Roadmap (SDR). EPEAT is an environmental procurement tool designed to help institutional purchasers in the U.S. public and private sectors evaluate, compare and select electronic goods, based on their environmental attributes. For more information on EPEAT, visit their website at <http://www.epeat.net>. For more information about the SDR, go to <http://www.zerowaste.org/epeat/roadmap.htm>.

June 19, 2007

IPC - Association Connecting Electronics Industries - is the national trade association for the electronic interconnection industry, and represents more than 2,400 member companies involved in the manufacturing and assembly of printed circuit boards. Printed circuit boards and electronic assemblies are the backbone of a variety of electronic devices including computers, cell phones, pacemakers, automobiles, and sophisticated defense systems. On behalf of our members, IPC is pleased to submit the following comments on the Electronic Product Environmental Assessment Tool (EPEAT) Standards Development Roadmap (SDR).

IPC is deeply disturbed that the June 2007 version of the EPEAT SDR continues to contain misleading information and inaccuracies. It appears that our previous comments have not been addressed. Should the EPEAT SDR revision process expect to maintain stakeholder support, it cannot continue to ignore stakeholder concerns raised during the previous and current comment period. Based upon review of the revised SDR, it appears that a number of stakeholder comments were overlooked or ignored. If editors of the SDR are unable to fully consider and incorporate stakeholder comments, a written justification should be provided in the interest of maintaining transparency.

To accurately accomplish its mission, EPEAT criteria must be based on the true lifecycle impacts of the selected products. Criteria based on incomplete and inaccurate data may have the unintended consequence of causing a negative human health or environmental impact.

As mentioned in our previous comments, the SDR Background Document contains many incorrect and unsubstantiated statements regarding Brominated Flame Retardants (BFRs). BFRs are a family of 75 chemical substances with different properties, characteristics, and performance. The only commonality is that all BFRs contain bromine – an element that is available in nature. While environmental and health concerns have been raised about certain BFRs, such as Polybrominated Biphenyls (PBBs) and and Penta- and Octa-Polybrominated Diphenyl Ether (Penta- and Octa-PBDE), industry has responded by

removing them from products. Others BFRs, such as Tetrabromobisphenol-A (TBBPA) and Decabrominated Diphenyl Ether (Deca-BDE), have been thoroughly tested and found to have no identified risks or negative impacts on human health or the environment. It is therefore inappropriate and misleading to repeatedly make blanket statements such as, “Also likely to contain brominated flame retardants that may be hazardous to human health.” Additionally, the SDR does not explain why the elimination of this broad category would benefit the environment or human health.

The majority of printed circuit boards manufactured today are built on epoxy resin-fiberglass substrate. Because the very function of printed circuit boards is to transmit electrical charges, a fire retardant is an absolute necessity. TBBPA is the primary flame retardant used in printed circuit boards. TBBPA is chemically bound into the epoxy resin matrix of circuit boards and therefore will not present an environmental or health hazard because it cannot be released.

TBBPA is currently going through the EU Risk Assessment process. The Human Health section of the Risk Assessment was closed in 2005 with no risks identified. The Scientific Committee on Health & Environmental Risks and a study from the University of Würzburg (under the EU Fire project) also confirmed these conclusions. The Environmental section of the Risk Assessment was closed in March 2007. No risk was identified for TBBPA when used as a reactive, such as in the epoxy resins of printed circuit boards. Therefore, it is entirely incorrect to make the statement in Section 1.3, “Nearly all products use some flame retardants that have been identified as constituents of concern-including TBBPA (reacted into circuit boards)...”

As mentioned in our previous comments, the SDR Background Document also repeatedly classifies Deca-BDE as a “constituent of concern.” DecaBDE, one of the flame retardant chemicals used in a variety of electronic applications, has been the subject of extensive scientific reviews by the National Academy of Sciences, the Consumer Product Safety Commission and a 10-year risk assessment by the European Union. None of the findings from this work supports restrictions or prohibitions on the use of Deca-BDE in these applications. Based on the EU Risk Assessment, an ongoing process under which Deca-BDE is subject to regular review by the EU, Deca-BDE has been exempted from regulation under the EU RoHS (Restriction of Hazardous Substances) Directive.

While non-halogenated alternative fire retardant material systems are being developed and introduced into products, it is important to note that the reliability of many alternative flame retardants has not been fully qualified at the assembly level. There is also no data indicating that any of the materials currently being considered as replacements for these halogenated flame retardants are any better or worse for the environment or human health. Significant research is needed before BFR substitution can occur on a broad basis. In addition to assessments of the flame retardant systems’ effects on product functionality and reliability, it is necessary to evaluate the lifecycle impacts (design, use, and end-of-life) of the substitutes, as compared to the BFRs currently in use. Any alternatives considered should have been subjected to an equivalent battery of testing for

human health and environmental effects as the substance they are meant to replace, and been found to have a more favorable toxicity profile.

As mentioned in our previous comments, IPC requests removal of all references to Deca-BDE and TBBPA as “environmental or human health concerns” for the reasons stated above. Requiring the replacement of these products with other flame retardants whose potential impacts on human health and the environment are far less understood is not sound policy. In fact, elimination of all BFRs could have a significant negative impact on human health. BFRs are added to plastics used in electrical and electronic equipment (EEE) to slow down or prevent the ignition of fire. Flame retardants, when used in EEE, save lives and reduce property damage by preventing the spread of flame and fire. Fire statistics suggest that the risk of death or injury from fires involving consumer products can be reduced 30 to 90 percent or more by using flame retardants.

Public safety is a paramount concern for electronics manufacturers. The use of flame retardants in electronic equipment is paramount to the fire safety of these products and their use should not be discouraged. Until relevant and scientifically validated data are presented proving that the TBBPA and Deca-BDE have an adverse human health or environmental impact and the alternatives are better, all reference to these substances should be withdrawn from use as an EPEAT environmental criterion. If the editors remain unable to address all stakeholder comments, a written explanation for the decision should be provided to all stakeholders.

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