



April 23, 2008

Green Chemistry Initiative
California Department of Toxic Substances Control (DTSC)
By email: Green.Chemistry@dtsc.ca.gov

RE: California Green Chemistry Initiative Request for Comments on Specific Questions

IPC – the Association Connecting Electronics Industries and the California Circuits Association (CCA) are pleased to have this opportunity to comment on the California Green Chemistry Initiative. In general we are concerned that this initiative, which is being undertaken in furtherance of the state's goals of promoting a cleaner and safer environment for Californians, may not be considering the full environmental, economic, and social impacts of its actions. Our responses to your specific questions regarding the implementation of the Green Chemistry Initiative follow.

IPC is a global trade association for the electronic interconnection industry, and represents more than 2,600 member companies around the world, including 347 in California. IPC members manufacture printed circuit boards and electronic assemblies, which are used in a variety of electronic devices including computers, cell phones, pacemakers, and sophisticated missile defense systems. The industry is vital to the U.S. economy, employing more than 350,000 people and exceeding \$44 billion in sales. Although IPC members include electronic giants, sixty percent of IPC members meet the Small Business Administration's definition of "small business."

Question 1. How much should the tax be on hazardous chemicals produced, used, or distributed in California?

We do not believe any tax on potentially hazardous chemicals produced, used, or distributed in California is appropriate. Businesses, particularly in the manufacturing sector, are already under significant economic stress as they compete in a global marketplace. The United States in general and California in particular continue to lose high-paying manufacturing jobs due to prohibitively expensive tax structures. California now has the fourth worst business tax climate in the nation, according to the non-partisan Tax Foundation's 2008 State Business Tax Climate Index, an annual study of the 50 states' respective corporate, personal, sales, property and unemployment insurance taxes. Unfortunately, according to California Budget Project's 2007 report, California lost 464,700 manufacturing jobs between 1990 and 2006 — a 23.6 percent decline.

Question 2. What information would trigger a ban of a chemical by the state of California?

We do not believe the state of California should ban specific chemicals without careful consideration of the full environment, social and economic impacts. Often substance bans result in unintended environmental consequences. Materials selection is an extremely complex issue. Electronics manufacturers use certain materials of concern because of their unique energy efficiency, safety or performance characteristics when no viable or environmentally-preferable substitutes exist. With electronics, drop-in substitutes are rarely feasible. The substitution of one substance for another can create a cascade of performance and functionality issues. The search for alternatives is complicated by limited alternatives, higher costs and possible risks posed by those alternatives. For example, Review of the U.S. Environmental Protection Agency (EPA) Lead-Free Solder project¹ illuminates the environmental trade-offs inherent in material substitutions. The study evaluated the environmental impacts of tin-lead solder versus lead-free alternative solders. Because tin-silver-copper solder in electronics requires higher processing temperatures than tin-lead solder, tens of thousands of solder machines worldwide now operate at higher temperatures. The higher operating temperatures required for the manufacture of lead-free electronics has resulted in significantly higher energy usage during manufacturing. The increased energy use associated with manufacturing lead-free electronics was projected by the study to cause higher air pollution, acid rain, stream eutrophication, and global warming impacts than the tin-lead soldered electronics.

The environmental impact of the lead-free alternatives is an important factor that was not considered during the European Union's or State of California's decisions to restrict the use of lead in electronics based solely on its potential toxicity. EPA's study serves as an important reminder that there are environmental trade-offs when substituting one substance with another. A complete application of the precautionary approach would be to examine the potential impacts of likely substitutes prior to instituting a ban of a critical substance.

We also urge California to take into account that the US EPA is already engaged in a trilateral agreement between Canada, the U.S. and Mexico to assess and manage chemicals. California would undermine ongoing efforts of the federal government. Under the international agreement, U.S. EPA will screen, prioritize, and assess nearly all chemicals in U.S. commerce. EPA will develop hazard characterizations, risk characterizations, and risk-based decisions on how to manage these chemicals.

Question 4. What would be the appropriate response by the state of California for failure to use safer alternatives?

It is critical that the state of California proceed carefully with any type of safer alternative mandate. As discussed in response to Question 2, there are a number of trade-offs involved in materials selection. Unless the full life-cycle impacts of a material and its proposed substitutes are fully examined, it is not possible to deem a substance a "safer alternative."

¹ U.S. Environmental Protection Agency. August 2007. *Solders in Electronics: A Life-Cycle Assessment*. Available at <http://epa.gov/dfe/pubs/solder/lca/index.htm>.

Question 5. What would be the appropriate response by the state of California for failure to disclose product ingredients?

The DTSC should be mindful of the need to protect confidential business information before implementing product ingredient disclosure requirements.

Question 6. By what date should the state of California require reusable or biodegradable non-petroleum based packaging?

We urge DTSC to be mindful of the full life-cycle impacts of alternative packaging materials before implementing such a mandate. Unless the full life-cycle impacts of a material and its proposed substitutes are fully examined, it is not possible to conclude that reusable or biodegradable non-petroleum based packaging does indeed contribute to a safer and cleaner environment for California and its citizens.

Question 9. What criteria should the State of California require as part of alternatives assessment by industry in determining which products are safer/greener?

See response to Question 2. We urge the DTSC to fully evaluate the life-cycle (design, use and end of life) impacts of the proposed substitutes before restricting substances currently in use. There should be clear and compelling evidence that potential substitutes are available, are reliable over the long-term and are preferable from a life-cycle perspective. Until life-cycle assessments are conducted proving that the environmental and human health impacts across the alternative's life-cycle are better than the substances being replaced, the DTSC should not restrict any substances.

IPC and CCA appreciate the opportunity to submit these comments and urge the DTSC to be mindful of the full environmental, social, and economic impacts of its Green Chemistry Initiative. Should you have any questions, please contact either Fern Abrams, IPC Director of Environmental Policy & Government Relations at fabrams@ipc.org or 703-522-0225 or Richard Crowe, CCA Executive Director at rcrowe@ipc.org or 562-493-1037.

Sincerely,

Fern Abrams
Director, Environmental Policy & Government Relations