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Environmental Protection Agency  
EPA Docket Center (EPA/DC)  
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Attention Docket No. EPA-HQ-SFUND-2009-0265  
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Washington, DC 20460

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**RE: Comments on the Advanced Notice of Proposed Rulemaking on the Identification of Additional Classes of Facilities for Development of Financial Responsibility Requirements under CERCLA Section 108(b) (Docket No. EPA-HQ-SFUND-2009-0265)**

IPC – Association Connecting Electronics Industries® appreciates the opportunity to comment on EPA’s advanced notice of proposed rulemaking (ANPRM) on the Identification of Additional Classes of Facilities for Development of Financial Responsibility Requirements under CERCLA Section 108(b). The Electronics and Electrical Equipment Manufacturing industry (NAICS 334 and 335) has been identified in the ANPRM for further study in order to determine whether facilities under this category will be subject to financial responsibility requirements under CERCLA Section 108(b). EPA should use current data to analyze the need for financial assurance requirements for the electronics industry. Utilizing recent data will provide EPA with information indicative of current practices within the industry and enable the agency to make an accurate determination as to whether financial assurance requirements are necessary. During the analysis of current data, IPC expects the agency to find the amounts of hazardous chemicals used, managed and disposed of in electronics manufacturing to be insufficient to create future hazardous waste sites and therefore not warranting financial assurance requirements.

IPC, a 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 2,700 member companies, 1,700 of which are located in the U.S. As a member-driven organization and leading source for industry standards, training, market research and public policy advocacy, IPC supports programs to meet the needs of an estimated \$1.7 trillion global electronics industry.

It is essential for EPA to use current data in order to accurately determine whether the electronics industry should be subject to financial assurance requirements. Current data gives an accurate portrayal of where the industry is today. Historical data, such as the National Priorities List (NPL) is



not indicative of current practices. The NPL is updated periodically and the process for removing facilities is inefficient and time-consuming. The current NPL list is not an accurate representation of facilities that pose a risk to the environment or human health. EPA's plans to use Toxic Release Inventory (TRI) data to determine whether certain facilities should have financial responsibility requirements is encouraged because it provides the most current data and allows EPA to look at trends and changes over time. During the analysis of the TRI data, EPA should keep in mind that some of the releases reported under TRI refer to materials that have been disposed of in a landfill and are not released into the environment. Therefore EPA should not solely look at the cumulative releases reported under TRI. Review of EPA's TRI data for the years 1988, 2000, and 2008 showed a considerable decrease over time in the release of several hazardous chemicals used in electronics manufacturing. EPA should analyze current data to determine financial assurance requirements under CERCLA Section 108(b) for the electronics industry.

The electronics industry has made great strides towards improving manufacturing processes and reducing the amount of hazardous chemicals used during the manufacture of electronic products. Ozone depleting substances (ODSs) have been eliminated and replaced with less hazardous chemicals. The electronics industry has also eliminated the use of lead in solder, with some exceptions for defense purposes. The use of ethylene glycol ethers and mercury in electronics manufacturing has also been reduced over the past two decades. Other examples of the electronics industry reducing the use of hazardous chemicals in the manufacturing process include the replacement of ammonium bifluoride and chromic acid. Ammonium bifluoride used in solder/tin stripping, has been replaced by an inhibited nitric acid. Chromic acid, used in desmear, has been replaced with potassium permanganate as an etchant. The management of hazardous chemicals at electronics manufacturing facilities is inherently safer due to the decrease in hazardous chemicals used. Therefore, electronics manufacturing facilities are much less likely to be at risk of forming hazardous waste sites and should not be subject to financial assurance requirements under CERCLA Section 108(b).

The most noteworthy improvement in electronics manufacturing was the elimination of ozone depleting substances (ODSs). ODSs are known to increase the size of holes in the ozone layer resulting in harmful ultraviolet radiation reaching the Earth's surface. Chlorofluorocarbons (CFCs), historically the most common ODS used in electronics manufacturing, was used as a defluxing solvent for cleaning electronics assemblies. The printed board cleaning standard no longer relies on CFCs. Printed board cleaning is now largely centered on hot deionized water, a safe and effective means to clean electronics assemblies. Chlorinated solvents, also known as halogenated solvents, are also ODSs that were customarily used in printed board manufacturing. 1,1,1 trichloroethane, trichloroethane and methylene chloride were traditionally the most commonly used chlorinated solvents in the inner layer and outlayer of solvent dry film developing and to degum boards after tab plating tape removal. Chlorinated solvents were also used to clean screens used in legend or nomenclature marking. Review of EPA's TRI found that 1,1,1 trichloroethane was completely eliminated from use in electronics manufacturing after 1999 and trichloroethane decreased from 6.5 M lbs in 1988 to 0.4M lbs in 2000 and 73,000 lbs in 2008. Chlorinated solvents have been replaced with less hazardous non-chlorinated solvents such as aqueous hydroxide and ethanolamine solutions for solvent dry film stripping and both screen cleaning and degumming. Printed board manufactures



also use citrus based solvents to degum bare printed boards after gold plating. The elimination of ODSs in electronics manufacturing is an important step toward reducing the amount of hazardous chemicals used and the likelihood of creating hazardous waste sites. Therefore the electronics industry should not be subject to financial assurance requirements under CERCLA Section 108(b).

The use of tin-lead solder in electronics has also declined. While some customers, mainly military, still require tin-lead solder the majority of the electronics industry requires lead-free solder to be used. EPA's TRI data shows a dramatic decrease in the release of lead from 2000 to 2008. In 2000, total on and off-site releases of lead totaled approximately 1.5M pounds and in 2008 that total dropped to 860,000 pounds. The reduction in the amount of lead used in electronics is another example of the electronics industry reducing the amount of hazardous chemicals used.

Review of EPA's TRI data also indicates that use of ethylene glycol ethers and mercury in electronics manufacturing has reduced over the past two decades. Ethylene glycol ethers typically found in soldermask formulations and coatings decreased from 0.5 M lbs in 1988 to 62,000 lbs 2008 according to the TRI data. Releases from other certain glycol ethers went from 3.5 M lbs in 1988 to 2.2M lbs in 2000 and currently at 0.5M lbs in 2008. Ethylene glycol ethers have generally been replaced by less toxic propylene glycol ethers. The use of mercury in printed board manufacturing has also decreased considerably over the past twenty years. Mercury was used in ammoniacal etchants that were used in electroless copper baths. In 1988 the electronics industry (NAICS 334 and 335) released approximately 43,000 pounds of mercury. In 2000 mercury release decreased to 6,000 pounds and the latest data available indicates that the electronics industry released only 1,000 pounds of mercury in 2008.

The electronics industry has made significant changes to their manufacturing processes over the past several decades and has drastically reduced the amount of hazardous chemicals used in the manufacturing of electronic products and therefore the facilities are much less likely to form hazardous waste sites. Electronics manufacturing facilities do not pose a risk to the environment or human health that warrants financial assurance requirements. IPC requests EPA to remove the electronics industry (NAICS 334 and 335) from consideration for financial assurance requirements under CERCLA Section 108(b).

Sincerely,

Stephanie Castorina  
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