



Summary of Legislation, Regulations and Directions

USA Legislation

- Lead has already been banned by law in paint, automobile fuel, food cans, automobile body solders, light bulbs and plumbing solder and fixtures.
- Lead is permitted in solder for electronics: however, the American Industry was asked by the U.S. EPA to reduce the use of hazardous materials. Lead is currently on its list of hazardous materials.
- Recycling of solder in electronic products is possible, but could become a large cost.
- Pressure is mounting from offshore communities to eliminate lead use. NEMI Association has formed a Lead-Free Task Force to investigate alternatives to lead bearing alloys.
- NCMS -found 3 possible replacements for lead-alloys out of 80 considered
-No drop-in replacements
- An alloy is considered to be lead-free if it contains < 0.2% (but no official definition exists).
- NEMI at APEX '00 has named Sn 95.5Ag3.9Cu0.6 ($\pm 0.2\%$) as its choice for a lead-free alloy candidate
- Intends for North American companies to produce lead-free products by 2004
- Total lead elimination by 2004 on a voluntary basis
- Assist in modifying industry standards for Pb-free

Status of the Lead-Free Issue in a Number of States

California -Updated list yearly of toxic chemicals.

Connecticut -General permit for collecting some recyclables (early 2000).

Florida -Pilot program of end-of-life for some electronics.

New Jersey -Pilot program for electronic recycling (3 & 6 graders).

South Carolina -Bill introduced on state wide electronics recycling.



Japan and Europe “International Lead-Free Soldering Roadmap Framework”

- Launched at the 2nd Lead-free Summit meeting in November 2002.
- Involves Europe’s SOLDERTEC and Japan’s JEITA (Japan Electronics and Information Technology Industries Association).
- Recommendations: – Manufacturers have a complete inventory of lead-free components by the end of 2004. – The recommendation that industry adopts the use of 0.1weight percentage as a maximum allowable percentage lead in “lead-free” products.
- Agreement on the EU WEEE (Waste Electrical and Electronic Equipment) and RHS (Restriction of Hazardous Substances in Waste Electrical and the Electronic Equipment) Directives.
- RHS ban on hazardous materials confirmed as July 1, 2006. This directive makes lead-free a requirement for products on sale to European Consumers after this date.
- In addition to phasing out lead, the RHS mandates a phase out of: – Cadmium – Mercury – Hexavalent Chromium – Two types of brominated flame retardants
- Recommends the following schedule for manufacturers. The roadmap suggests that leading manufacturers are expected to conform to these time frames one year ahead of schedule while other manufacturers may reach them 2 years later.
- Components – Some availability of lead-free components since the end of 2001. – Complete line-up of components with lead-free terminations by the end of 2003. – Complete line-up of lead-free components by the end of 2004.
- Assemblies: – Manufacturing of lead-free soldered assemblies began by the end of 2002. – Complete lead elimination from products by the end of 2005.
- The roadmap recommends a solder alloy composed of Sn-Ag-Cu for board assembly. The roadmap recommends that industry leaders develop a system for labeling.

EasySpheres products shown and sold as “lead free” meet all ROHS guidelines for lead as specified by the directive listed above.