

Eliminating Lead

The Lead free Solder Project

Murata's efforts to reduce lead have been implemented according to the product regulation program for environmentally hazardous substances in products. In 1995, we established the "LF (Lead free) Solder Project," an initiative undertaken by our Technical Development Department and Product Planning and Design Department with the goal of introducing lead free solder. We have continued to promote the development of technology that contributes to the use of lead free solder.

Eliminating Lead from Products

Long a champion of numerous measures to reduce the use of lead, Murata has achieved significant progress in its lead reduction efforts. For example, we have eliminated lead from the plating of terminals and from the surface of soldered terminals. Moreover, we have begun supplying lead free and reduced-lead products to the market.

Demand has been increasing within the electronic component industry for a lead free approach, particularly as a result of initiatives by electronic equipment manufacturers to adopt lead free solder assembly, green procurement, product assessment activities and the WEEE* and RoHS** regulations of the EU directives. Murata is providing a timely response to this trend.

Murata's approach to reducing the lead content of its products largely addresses the following three categories of lead-containing parts.

*1 WEEE (Waste Electrical and Electronic Equipment)

*2 RoHS (The restriction of the certain hazardous substances in electrical and electronic equipment)

1. Elimination of lead from terminal plating and solder on terminal surfaces

In April 2001, we began supplying products that use lead free materials in plating and solder on terminal surfaces. As of the end of January 2003, we had completed the preparation of substitutes for 82% of our products. We will complete this substitution for all our products by the end of December 2003.

Furthermore, our publication titled "Lead Elimination Activities" contains sample applications, mass production schedules, model number changes, and detailed information on main products for which the surface of soldered terminals is lead free. Details are available at our website (<http://www.murata.com/catalog/k27e1.pdf>).

Moreover, we provide electronics makers with evaluation data on the packaging of products that are required to incorporate lead free solder.

2. Reducing lead used for solder in products, for glass in electrode materials, and in stabilizers for polyvinyl chloride, etc.

Working in cooperation with our suppliers, we intend to reduce or substitute the lead content in these areas by the end of December 2003. Among these, as of the end of January 2003, we have provided substitutes for 88% of our products that still utilize lead connecting solder (which has a lead content of less than 85%).

3. Research on the substitution of the lead contained in ceramics and some glass materials and research on alloys with lead free materials

The present EU RoHS directive that came into effect in February 2003 exempts the lead used in these parts from the ban, as it is technically difficult to substitute other materials for the lead used in such parts.

However, Murata will continue to review the possibility of eliminating lead from such parts through research and development of relevant technologies to reduce the size of such parts.

Moreover, we have sought to patent the technologies developed through our lead free initiatives and have actively put them into practice. Some have been licensed to other parties.

Examples of lead free products

