

Development and Design

We are aware that Murata is engaged in the manufacture of products that have a great impact on the environment. Therefore, we are conducting product assessments and LCA data analyses from the product development and design stages, to promote the development of products with a low environmental impact.

Developing and Designing Environmentally Conscious Products

Murata has recognized that its priority task is to minimize the environmental impact of its products, in view of the characteristics of Murata's business operations. Based on such recognition, Murata has been actively implementing measures such as reducing the use of environmentally hazardous substances contained in its products, designing more compact products, and saving power.

Specifically, in 1995 Murata established its LCA Subcommittee, and in 1999 introduced life cycle assessment (LCA) into its R&D process. Moreover, since November 2004 we have adopted and implemented in earnest the product assessment system in every division.

Employment of LCA in Product Development and Design
The life cycle assessment (LCA) is a method of quantitatively assessing the various environmental impacts imparted by a product throughout its life cycle, which extends from resource extraction to manufacturing, sales, use, and disposal.

Using analyses results of LCA data on our typical products, Murata prepared its own LCA guidelines and introduced them into the R&D process. The items considered in an LCA assessment include carbon dioxide emissions, lead content, and the amount of principal raw materials consumed. The LCA assessment thus covers not only the product itself but also the equipment used to produce the product.

Introduction of a Product Assessment System

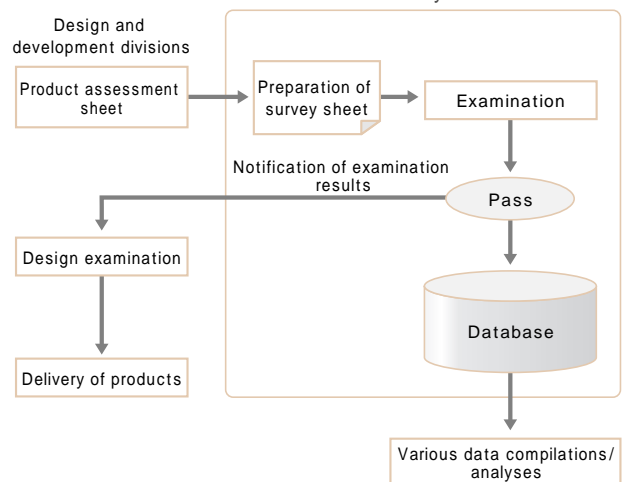
The product assessment is a method of assessing, at the design development stage, a product's impact on the environment. Murata has introduced this system not only in the product development and design stages, but also prior to the experiment production and mass production stages.

In fiscal 2005, we will systematize these assessments so that their results can be more efficiently reflected in each product development and design stage. Moreover, we will accumulate and compile the information obtained through the assessments into a database, which will be utilized for analyses and recording for the management of substances subjected to control.

Product Assessment Items

Classification	Item
Product	Controlled substances
	Downsizing
	Reduction of main raw materials
	Power conservation
Production process	Controlled substances
	Reduction of energy consumption
	Resource and waste reduction
Packaging and packing	Controlled substances
	Resource and waste reduction

Product Assessment Examination System Structure



Toward Total Elimination of Environmentally Hazardous Substances in Products

Murata's products contain various substances. Since some of these substances may adversely affect the human body and the environment, we are aware of the urgent necessity of reducing and eventually eliminating the use of these substances. We at Murata call them "environmentally hazardous substances." Even concerning substances whose use is not prohibited by laws and regulations, we are also making voluntary efforts for their reduction and elimination.

Adoption of Standards regarding the Use of Environmentally Hazardous Substances in Products

The Murata Group has established a "Regulation Program for Environmentally Hazardous Substances in Products" (hereinafter called "product regulation program") intended to reduce the use of environmentally hazardous substances in all its products.

We have established three ranks for these substances in our product regulation program: substances prohibited in products, substances to be reduced, and substances in preparation for reduction. Through this product regulation program, we are able to control chemical substances.

Moreover, aside from groups of regulated substances, we are managing the content of substances that are likely to be regulated in the future or that can be recycled and reused. We have taken this approach by instituting a policy for chemical substances whose content is to be determined at the time of procurement.

DATA Regulation program for environmentally hazardous substances in products

Progress in Reducing the Use of Environmentally Hazardous Substances

We are making progress in reducing the use of environmentally hazardous substances according to the product regulation program for existing products. In addition, we have established a system that can confirm compliance with the product regulation program during the design stage of products under development, so as to provide customers with products consisting of less environmentally hazardous substances.

Specifically, we are aggressively addressing the need for this reduction and elimination by launching a project targeting the reduction of lead, hexavalent chromium, mercury, cadmium, and specified brominated flame retardants subject to strengthened EU regulations.

Examples of Murata lead-free products



Chip EMIFIL® Inductor Type

Trimmer Potentiometer (PVZ2A Series)

Examples of RoHS Directive-compliant products



Piezoelectric vibrating gyroscope (GYROSTAR®)

Bluetooth® modules

* The Bluetooth trademarks are owned by Bluetooth SIG, Inc., USA.

Accommodating the RoHS Directive*

The RoHS Directive, which bans the use of six hazardous substances, including lead, in certain electronic and electrical products to be sold in Europe, will be enforced throughout the European Community from July 2006. At Murata, we are incorporating activities aimed at reducing the use of these substances, by launching the project to accommodate the RoHS Directive in August 2003. As of October 2004, we completed the development of technologies to comply with the RoHS Directive, accounting for 91% of all Murata products.

* RoHS compliance means that we judge from EU Directive 2002/95/EC the products do not contain lead, cadmium, mercury, hexavalent chromium, PBB or PBDE, except for exemptions stated in the EU Directive 2002/95/EC annex and for impurities existing in the natural world.

Compilation of an Information Database

Murata has worked on compilation of a database to establish a system to properly manage information on substances making up Murata products and their contents. This database is used (1) to ensure that specific environmentally hazardous substances restricted by laws and regulations are not contained in any Murata product, and (2) to provide customers and governments with relevant information in a timely manner.

System to manage information on chemical substances contained in products

