

Addressing Environmental Preservation through Our Products

Murata has been actively implementing measures such as reducing the use of environmentally hazardous substances contained in its products, designing more compact products, saving power, improving packaging materials, and introducing green procurement measures in order to reduce the environmental impact of its products.

Developing Environmentally Conscious Products

At Murata, we have been taking steps to reduce the environmental impact of our products. In April 1996, Murata established a program intended to reduce or eliminate environmentally hazardous substances in products. In November 1997, this program was expanded to include chemical substances used in processes. [See pages 15 and 26.](#)

We have also adopted the life cycle assessment (LCA) method to clarify the issues that should be addressed at every stage of product design in order to reduce the overall environmental impact.

Moreover, we completed preparations to integrate a product assessment system in fiscal 2001 and determined concrete action details in 2002 scheduled for implementation in 2003.

Implementation of LCA

The 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.

Murata established its first LCA Sub-Committee in 1995. Using the results of an analysis of LCA data on our typical products, we prepared clear LCA guidelines and introduced them into our R&D process in 1999.

The items considered in an LCA assessment include carbon dioxide emissions, lead content, amount of principal raw materials consumed, the product and its production equipment.

The LCA data analysis revealed not only the energy consumed directly in manufacturing, but also the energy consumed indirectly by air conditioning and the like. As a result, we recognized anew the importance of energy conservation through initiatives such as co-generation. [See page 21.](#)

Introduction of a Product Assessment System

The product assessment system is a method of assessing, at the design stage, a product's impact on the environment.

As part of this system, Murata has been taking steps to reduce or eliminate the use of environmentally hazardous substances in its products and manufacturing processes since April 1996.

In particular, one important theme is the "lead-free" initiative, which has been developed as a dedicated project. [See page 16.](#)

In 2002, we have been implementing preparations such as determining concrete evaluation items for undertaking product assessments. We have established a system for providing a material greenness inspection at the design stage in order to determine the presence of chemical substances imparting an environmental load in purchased products. [See page 19.](#)

In the product assessment, the assessed items are largely categorized according to their relation to the product, the production process and packaging, and all are subject to the "3Rs" (Reduce, Reuse and Recycle) with the goal of eliminating or reducing the use of chemical substances imparting an environmental load. Moreover, the product assessment is undertaken at each stage of product development. In addition, by establishing standard items for assessment, this system provides feedback from the design stage to prevent any lowering of the standard.

We remain committed to promoting environmentally conscious product development through the product assessment system.

Sample LCA Data Sheet (inventory data)

Classification	Item	Unit	Process		Measurement	Total
			Cutting	Drilling		
Input	Energy consumption					
	Electricity	kWh	0.13	12.32	5.08	76.09
		kJ	460	4434	18,300	234,900
	Fuel Gas	kl	0	0	0	0
	Consumption of major raw materials					
	Material A	g	99.26	0	0	99.26
	Material B	g	0	0	0	70.43
	Consumption of raw materials containing lead					
	Solder	g	0	0	0	58.60
	Others	g	0	0	0	0
Output	Exhaust emissions					
	CO ₂ (direct)	g	0	0	0	0
	CO ₂ (indirect)	g	54	5,150	2,123	31,810

Product Assessment Items

Classification	Item
Product	Reduction of environmentally hazardous substances page 15
	Reduction of main raw materials
	Compact
	Power conservation
	Green procurement page 19
Production process	Reduction of environmentally hazardous substances page 26
	Reduction of energy consumption
	CO ₂ reduction
	Waste reduction
Reduction of regulated substances	Green procurement page 19
	Packaging page 15
	Promotion of reduce, reuse and recycle page 17

Product Assessment Process

