

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. Moreover, we have 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.

In 2001, we completed preparations for a product assessment system - scheduled for implementation in 2002 - that is intended to evaluate and reduce the environmental impact by integrating the above activities through our products. Furthermore, since April 1996, we have been pursuing activities regarding environmentally hazardous substances that have become part of the product assessment system.

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.

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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 is seeking to reduce or eliminate the use of environmentally hazardous substances in its products and in the manufacturing process. See pages 14 and 26.

In particular, one important theme is the "lead-free" initiative, which has been developed as a dedicated project. See page 15.

In 2001, we established a Product Assessment Section Meeting based on the LCA Section Meeting mentioned above. We established a product assessment guideline that integrated various activities that previously had been undertaken separately.

Consequently, the assessment items are largely divided according to their relation to the product, the production process and the packaging, and all are subject to the "3Rs" (reduce, reuse and recycle). Moreover, the product assessment system is implemented at each product development stage. The system comprises an assessment standard and is structured to allow for feedback from the design stage in order to prevent any erosion of the standards. 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	kW·h	0.13	12.32	5.08	76.09
		kJ	460	4434	18300	234900
	Fuel Gas	kJ	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	21	2,033	838	12550

Product Assessment Items

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

Product Assessment Process

