



# Achievement of Zero Emissions

In order to reduce the environmental impact of waste disposal to almost zero, Murata is promoting reuse and recycling and has adopted the target of zero emissions (defined as a 100% recycling rate and zero landfilling). Achieving zero emissions proved particularly difficult for some of Murata's most common waste products, notably the ceramic-related waste generated through manufacturing, firing and molding processes for the raw materials of electronic components. However, through a review of the production processes as well as the sorting of the waste generated—combined with the development of recycling methods and routes in cooperation with waste processors—Murata has succeeded in achieving zero emissions at the 21 targeted plants and subsidiaries in Japan as of the end of March 2004.

## ■ We Achieved Our Fiscal 2003 Target of a 100% Recycling Rate in Japan.

### 1. Transition in Total Emissions and Recycling

The following table shows our achievements in reducing total waste emissions and increasing recycling.

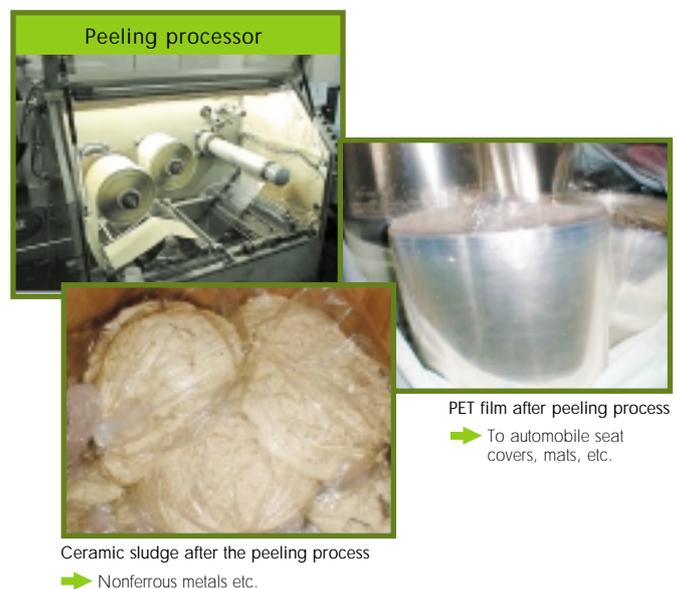
	March 31, 00	March 31, 01	March 31, 02	March 31, 03	March 31, 04
Total waste emissions (metric tons/month)	2,942	3,504	2,176	2,361	2,852
Recycling rate (%)	31.7	38.3	53.4	84.9	100

### 2. Examples of Recycling

The following table shows examples of the recycling of main categories of waste.

Waste category	Recycling
Sludge	Cement raw materials, construction materials (roadbed etc.)
Waste plastics	Raw material for PET, solid fuel, blast furnace reducer
Waste acid, waste alkali	Cement raw materials, construction materials (roadbed etc.)
Waste oil	Recycled solvent, raw materials/fuel for cement
Waste metal	Raw materials for metal
Glass and ceramic waste	Cement raw materials, construction materials (roadbed etc.)
Paper	Recycled paper

#### Recycling of Films Attaching Ceramics





### 3. Steps toward Improving the Recycling Rate

Murata is working to minimize the environmental impact resulting from the waste produced through our business operations. We seek to contribute to the creation of a society committed to recycling by minimizing waste disposal and promoting recycling and reuse.

As one aspect of this effort, we formulated an action plan to achieve zero emissions by the end of fiscal 2003. Our objective was to achieve zero landfilling\* of waste matter\*\* (in other words, a 100% recycling rate) following the theme of "environmentally friendly business activities" as listed in the Murata Environmental Charter.

Our recycling rate, which had stagnated at a level of about 30%, exceeded 50% when we began to implement this program at the end of fiscal 2001 and further improved to about 85% by the end of fiscal 2002.

We reviewed our production processes as well as the sorting of waste. Moreover, in cooperation with waste processors, we set out to develop recycling methods and establish new recycling routes.

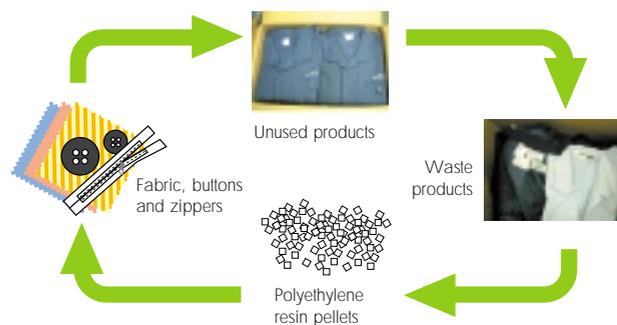
We established recycling routes for general waste such as plastic and metal waste, which are readily recyclable. However, a lack of recycling routes presented a challenge when we set out to recycle waste related to raw materials that is generated through the manufacturing, firing, and molding processes for raw materials for electronic components, one of Murata's representative product lines. Recycling of jigs used for firing, waste cases, and other waste also presented difficulty for the same reason.

However, as a result of our initiatives and our strong desire to achieve our goal, Murata achieved zero emissions throughout all plants and subsidiaries in Japan as of March 31, 2004, as set out in the action plan of the Murata Environmental Charter.

\* Landfill zero  
Represents zero direct landfilling of waste as well as zero landfilling of residual waste and sludge remaining after waste processing (such as incineration and neutralization).

\*\*Waste matter subject to the zero emissions campaign  
Murata's zero emissions and recycling rate targets exclude waste matter that the company is unable to process on its own, such as excess sludge in remediation tanks and general waste designated for processing at a public facility.

#### Recycling of Uniforms



Murata is promoting the recycling of uniforms used within the Murata Group companies. Because the uniforms are made of 100% polyester, old uniforms are recycled by polyester recycling companies as polyester products (such as uniforms).

#### Trend in Recycling Rate

##### Recycling Rate in Japan

