

Environmentally Hazardous Substances in Production Processes

In order to reduce the environmental impact of chemical substances used in production activities, Murata has adopted voluntary regulation as well as monitoring of release into the environment.

Reduction of Environmentally Hazardous Substances in Production Process

Among the various chemical substances used in production processes, those with the potential to affect the environment are subjected to Murata's unique "voluntary regulation program," which was established in November 1997. We continue to target the reduction and elimination of substances specified in our product regulation program.

As for existing processes, we are promoting reduced use and release according to the terms of our voluntary regulation program. For environmentally hazardous substances used in new processes, we are studying ways of reducing the use and release of these substances.

Moreover, in May 2002, we adjusted our voluntary regulation program following an examination of laws and regulations and the monitoring of voluntary trends within the electrical and electronics industry. As part of these revisions—and especially because Murata uses toluene and xylene in relative abundance—we established targets for reducing the release of these substances into the atmosphere. In addition, we implemented initiatives such as introducing a regenerative thermal oxidizer (RTO) and we achieved the target value at the end of fiscal 2003, the targeted fiscal year.

In April 2004, we established targets for reducing the release

of VOCs (volatile organic compounds) into the atmosphere. As well, we set targets to reduce the atmospheric release (CO₂ conversion) of total PFCs—which contribute to the greenhouse effect—by more than 80% of fiscal 2002 levels by 2006. We are continuing to strengthen these initiatives.

Reduction Targets and Achievements for the Atmospheric Release of Toluene and Xylene

【Target】

Toluene	Reduction of release to not less 50% of 2000 level as of the end of fiscal 2003
Xylene	Reduction of release to not less 20% of 2000 level as of the end of fiscal 2003

【Achievement】

	Fiscal 2000 emissions (metric tons)	Fiscal 2003 emissions (metric tons)	Reduction rate (%)
Toluene	63.3	23.2	63.3
Xylene	6.4	4.7	26.6

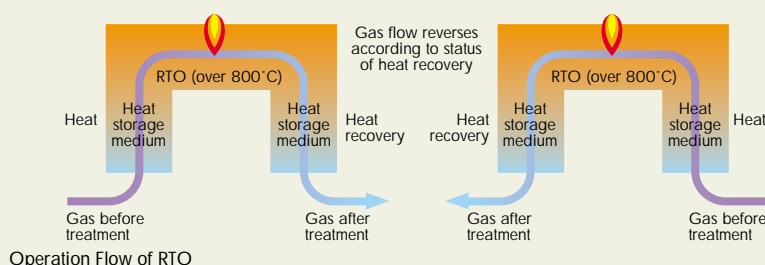
Voluntary Regulation Program for Environmentally Hazardous Substances in Production Process

	Ranking	Target Substance
A	Prohibited (41 substance groups) Any application prohibited	• Asbestos • Cadmium and its compounds (limited to resins) • Dioxins • White lead • Trichloroethylene • Halon • Benzene • CFCs • HCFCs etc.
B	Application prohibited within a specified period (23 substance groups) Prohibited after a specified period	• Acrylonitrile • Cadmium and its compounds (excluding resins) • Mercury and its compounds • Arsenic and its compounds (excluding semiconductors) • Organic lead • Hexavalent chromium compounds etc.
C	Reduce emissions (22 substance groups) Reduced emissions planned	• Acetaldehyde • Chloroform • Cyanide compounds • Formaldehyde • Nickel sulfate • Lead and its compounds (used in some ceramics, solder, etc.) • Toluene • Xylene • PFCs etc.
D	Prepare to reduce emissions (45 substance groups) Control emissions and voluntarily prepare to reduce emission	• Zinc and its compounds • Chrome and its compounds • Copper and its compounds • Nickel powder • Methyl ethyl ketone • Lead and its compounds (used in some ceramics, glass, alloys, etc.) • Arsenic and its compounds (application limited to semiconductors) etc.

Introduction of Regenerative Thermal Oxidizers (RTO)*

In an effort to curtail the atmospheric release of volatile organic compounds (VOCs), Murata is introducing regenerative thermal oxidizers (RTO). So far, seven such units have been introduced in Japan and overseas, resulting in significant benefits.

*Incinerating VOCs at temperatures above 800°C breaks down more than 98% of these compounds, rendering them nontoxic. The RTO uses heat stored in a ceramic thermal storage medium to preheat gas before treatment (with a thermal efficiency exceeding 95%). As a result, VOCs undergo autogeneous combustion, greatly reducing the cost of fuel.



Regenerative thermal oxidizer (Fukui Murata Manufacturing Co., Ltd.)