

## Preventing pollution and managing chemical substances

### Background of setting the material issues

Recently, stricter environmental regulations have been enacted in many countries. Murata has set this key issue in order to pursue sustainable business processes, such as reducing environmental burden as much as possible by promoting initiatives to proactively prepare for these regulatory changes.

### Our goal

Murata aims to reduce environmental burden and realize manufacturing that harmonizes with society by pursuing sustainable business processes that are not restricted to conventional frameworks.

### Pollution prevention

We are aware of the significant environmental risk accompanying the use of chemical substances, and we are taking steps to avoid pollution. In particular, regarding equipment related to the storage and transport of liquid chemical substances within worksites, we are implementing measures by setting four voluntary standards, to prevent accidents. In addition, risk assessments of accidents are conducted and risk reduction measures are implemented.

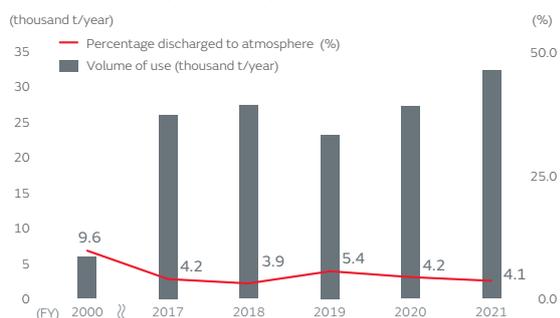
#### Voluntary rules for prevention (equipment-related)

- Prohibition of underground storage tanks
- Permeation barrier coatings
- Prohibition of underground piping
- Installation of emergency containment structures

There were no major environmental accidents or violation of environmental laws and regulations in fiscal 2021. In order to control emissions of volatile organic compounds (VOC), which are a contributor to atmospheric pollution, we voluntarily installed regenerative thermal oxidizers (RTO), a type of exhaust gas treatment equipment, at worksites whose emission level is high, and eliminated 96% of the amount used in fiscal 2021.

We will promote initiatives to reduce VOC emissions, including introduction of an IoT system that prevents environmental incidents by human error, reconsideration and update of materials and manufacturing methods.

### Trends in volume of VOC use and rate of discharge into the atmosphere (Japan)



### Chemical substance management

In addition to complying with laws and regulations such as the RoHS Directive and the REACH regulations\*1, we have established voluntary standards that incorporate consideration of global trends related to environmentally hazardous substances and requests from our customers. By means of the management system shown in the diagram below, we are actively working to reduce or eliminate the use of environmentally hazardous substances in our products.

\*1 A regulation of the European Union regarding registration, evaluation, approval and restriction of chemicals

#### Management of environmentally hazardous substances at Murata



We are also responding preemptively to the revision of laws relating to environmentally hazardous substances.

The current RoHS Directive restricts the content of ten types of chemical substances in electrical and electronic devices marketed in the EU. Of these, restrictions on four types of designated phthalic esters went into effect in July 2019. Acting in advance of the revision, Murata prohibited the use of designated phthalic esters in newly developed products from July 2017. Also, we are managing the packaging and tools that come into contact with products in the course of processing and logistics, in order to prevent contamination from contact.

In the future, we will also promote initiatives to reduce the risk of exposure of workers to chemical substances handled in manufacturing processes. As a priority initiative, we will promote an initiative regarding chemical substances used in cleaning applications to prohibit the inclusion of nine specified substances\*2 by March 2025.

\*2 The list of nine specified substances is as follows.

Name of chemical substance	CAS No.
Benzene	71-43-2
1-Bromopropane (nPB)	106-94-5
Dichloromethane	75-09-2
Methanol	67-56-1
NormalHexane (n-Hexane)	110-54-3
1-Methyl-2-pyrrolidone (NMP)	872-50-4
Tetrachloroethylene	127-18-4
Toluene	108-88-3
Trichloroethylene	79-01-6

For more information on our activities in preventing pollution and managing chemical substances, please see here.  
[https://corporate.murata.com/en-global/csr/environment\\_murata/pollution\\_chemical](https://corporate.murata.com/en-global/csr/environment_murata/pollution_chemical)