

Prevention of Air Pollution

Policy and Basic Approach

The Nippon Kayaku Group complies with the laws and regulations of each country and region with regard to air pollutants such as NOx, SOx, soot and dust, and volatile organic compounds (VOCs) emitted from its plants and development bases. We take measures against pollution by managing emissions, setting stricter standards than those required by laws and regulations to prevent air pollution in the areas around our plants and development bases.

System

[System for implementing Responsible Care](#)

Indicators

Indicator	Scope	Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Volatile organic compounds (VOCs)	Non-consolidated	tons	25.6	28.6	33.3	52.1	38.7
Dichloromethane	Non-consolidated	tons	3.9	4.9	4.0	3.6	3.2
Formaldehyde	Non-consolidated	tons	0.16	0.04	0.04	0.15	0.13
NOx*1	Non-consolidated	tons	8.2	9.1	7.5	7.7	8.3
SOx*2	Non-consolidated	tons	1.4	1.3	1.0	0.7	0.9
Dust*3	Non-consolidated	tons	0.6	0.9	0.5	0.5	0.4

*1 NOx (nitrogen oxide): NOx is produced when burned chemical substances react to nitrogen in the air and when fuels and chemical substances that contain nitrogen compounds such as coal are burned. Not only is it a major cause of air pollution including photochemical smog and acid rain, but NOx also has a harmful effect on the human respiratory system.

*2 SOx (sulfur oxide): SOx is emitted when fossil fuels that contain sulfur are burned. SOx reacts with moisture in the atmosphere to form sulfuric acid and sulfurous acid, which are causes of air pollution and acid rain.

*3 Dust: Dust mainly refers to fine particles (soot) found in dust smoke produced when burning fossil fuels. In addition to being a major cause of air pollution, dust can cause humans to contract pneumoconiosis or other harmful health conditions when breathed in in high concentrations.

[Environmental Management](#)

Initiatives

Reducing Emissions of Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants

Nippon Kayaku is working to reduce VOC emissions in a wide range of areas by aggregating data not only on VOCs stipulated under Japan's Air Pollution Control Act, but also chemical substances designated by the Japan Chemical Industry Association. We are also working to reduce emissions of harmful air pollutants such as dichloromethane and formaldehyde, which are two of the 12 substances that we manage voluntarily. The following are examples of our main initiatives.

- Installing exhaust gas treatment equipment
- Installing gas absorption equipment
- Installing regenerative (thermal storage) combustion equipment
- Improving work methods and reviewing alternatives to chemical substances used
- Leakage prevention measures

Reducing Emissions of SOx (Sulfur Oxides), NOx (Nitrogen Oxides), Soot and Dust

To date, Nippon Kayaku has engaged in the following kinds of measures, and manages SOx, NOx, and soot and dust emissions at lower levels than regulatory values.

- Fuel conversion from C heavy oil to A heavy oil, LPG, and natural gas
- Introducing low-NOx boilers and compact once-through boilers
- Installing NOx denitration equipment
- Installing dust collectors

