

Nature-friendly Products & Eco-factories

Initiatives for Waste Reduction

Attempts at Continuous Reduction of Final Waste Disposal

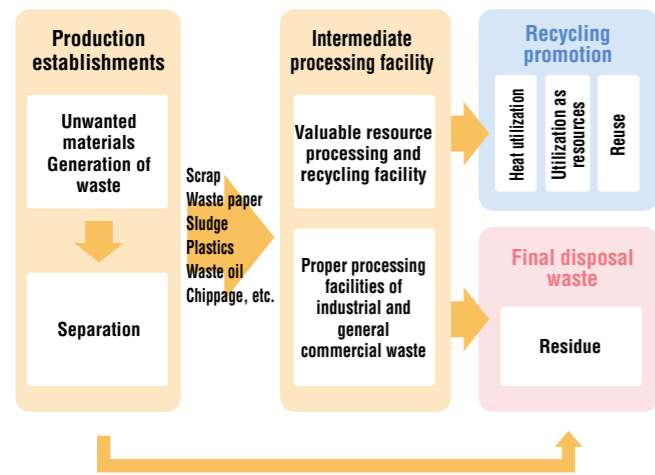
As a Group, the Hitachi Construction Machinery Group including its overseas establishments has promoted efforts to reduce waste. The Kasumigaura Works of Hitachi Construction Machinery and Hitachi Construction Machinery Tierra have achieved zero emission based on the Hitachi Group standards.

Promotion of Zero Emission

In accordance with the "3R" basic policies of activities (3R means "Reduce", "Reuse", and "Recycle"), the Group including overseas establishments has made efforts to reduce waste. For industrial waste, the group has promoted thorough separation at the production establishments and zero emission\* activities with the target to eliminate the final processing amount.

\* The Hitachi Group's definition of zero emission  
1% or less of final disposal ratio and less than 5t/year of final disposal amount (including valuable resource)

Correct Processing Flow of Industrial Waste



Reduction of Final Waste Disposal Amount

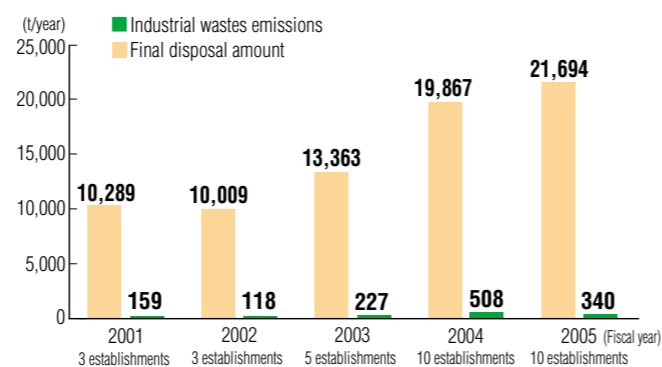
Due to a recent drastic increase in production, the total amount of waste tends to increase in both Hitachi Construction Machinery and its Group companies. Moreover, due to the policy of production and procurement at optimal locations around the world, the types of waste generated in each establishment have been changing. As illustrated in the examples of final waste disposal amount reduction shown below, the Hitachi Construction Machinery Group has attempted to reduce the amount of final waste disposal, domestically reducing 168 tons. On the other hand, due to a recovery in production at Hitachi Construction Machinery (China) and for other reasons, overseas waste increased by 210t when compared to the results of the previous year.

The establishments that accomplished 1% or less of final disposal ratio were the Tsuchiura Works and Kasumigaura Works plus three establishments of Group companies (Hitachi Construction Machinery Tierra, Tadakiko and the Ryugasaki Works of TCM).

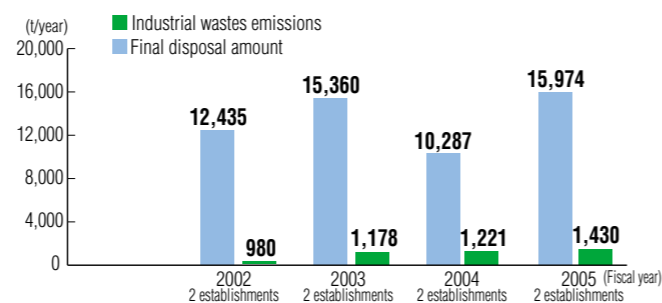
Examples of Final Waste Disposal Amount Reduction

Examples of efforts	Establishment	Processing method and reuse	Final disposal amount Reduction effect
Turning simple incineration waste into RPF Through separation of industrial waste	Tsuchiura and Kasumigaura Works	Crushing and compress waste into solid fuel	About 4.7t/year
Recycling of electrodes, whetstones, glasses and other noncombustible substances	Hitachi Construction Machinery Tierra	Crushing, separation and melting Slugs used for roadbed and other materials Metals recycled	About 5.6t/year
	Hitachi Construction Machinery Camino	Crushing and separation Crushed materials used for roadbed Metals recycled	About 1.3t/year
Promotion of dry processing in machine processing	Hitachi Construction Machinery Camino	Processing unnecessary Reduction of cutting oil waste emissions	About 0.9t/year

Trends in Industrial Waste Emissions and Final Disposal Amount (Domestic production establishments of the Hitachi Construction Machinery Group)



Trends in Industrial Waste Emissions and Final Disposal Amount (Overseas production establishments of the Hitachi Construction Machinery Group)



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Control and Reduction of Chemicals

Minimizing Environmental Burdens with Proper Management

The Hitachi Construction Machinery Group implements secure control over chemical substances and wastewater in order to maintain local environments.

Management of Materials Subject to the Provisions of PRTR Laws

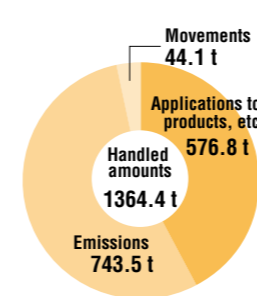
In 1988, the company established "Rules for Safety Screening and Registration of New Chemical Substances," and only used substances that satisfied the certification standards after preliminary safety screening of any newly used chemical substances. Moreover, standards are provided for their handling and storage to perform strict control. For chemical substances subject to the PRTR (Pollutant Release and Transfer Register) Law, emissions\* and movements\* are properly grasped and controlled, and the company has made efforts to reduce the amount. As most of the emissions are volatile organic compounds (VOC) contained in paints and solvents, the company has steadily introduced paints with less VOC components to reduce emissions.

Emissions and Movements of Class 1 Specified Chemical Substances

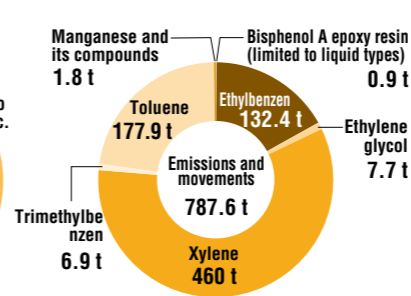
Name of chemical	Material number	Handled amount	Emissions to air	Movements (waste)
Bisphenol A epoxy resin (limited to liquid types)	30	10.5	0.0	0.9
Ethylbenzen	40	132.4	122.2	10.2
Ethylene glycol	43	546.0	0.1	7.6
Xylene	63	460.0	446.4	13.6
1,3,5- Trimethylbenzen	224	6.9	6.9	0.0
Toluene	227	177.9	167.2	10.7
Manganese and its compounds	311	30.7	0.7	1.1
<b>Total</b>		<b>1364.4</b>	<b>743.5</b>	<b>44.1</b>

10 domestic establishments with 1 t/year or more of handled amount

Handled amount and emissions/movements



Details of Emissions and Movements



Industrial Wastewater Management (water pollution prevention)

At the Tsuchiura Works, one of the key production facilities of Hitachi Construction Machinery, use as much as 1,000 tons of water daily. As its wastewater runs into the Kasumigaura Lake nearby, the company has established a management system for advanced processing to prevent water pollution. In industrial wastewater management, the company has established voluntary control standard values more strict than those of the pollution prevention agreements with the municipality and is equipped with a strict control structure including automatic measuring instruments for continuous monitoring as well as a daily water quality check.



Regulating pondage at Tsuchiura Works

Water Quality Data of Industrial Wastewater

Measurement items	Agreed value	Voluntary control reference	Actual results (maximum)	Measurement frequency
Hydrogen ion concentration (pH)	6.0 ~ 8.2	6.2 ~ 8.0	6.3 ~ 7.2	3 times/day
Biochemical oxygen demand (BOD)	10 mg/ℓ	8	5.5	Once/week
Chemical oxygen demand (COD)	10 mg/ℓ	8	4.0	3 times/day
Suspended solid amount (SS)	15 mg/ℓ	12	1.2	Once/day
Total nitrogen (T-N)	8 mg/ℓ	6.4	6.4	Once/day
Total phosphorus (T-P)	0.5 mg/ℓ	0.4	0.12	Once/week

Soil Contamination Survey

In order to prevent soil contamination caused by its previous land use resulting in environmental destruction or health damage, the Hitachi Construction Machinery Group makes it a rule to conduct a survey on soil contamination when new land sale or purchase is carried out. The Group conducted a total of 19 surveys by 2005.

\* Emission: Total of the emissions to air, public water and soil in the relevant establishment and the amount of disposal by landfill at the relevant establishment  
\* Movements: Those to sewage systems and outside of the relevant establishment