

Management of Chemical Substances

Present activities and goals

NGK observes applicable laws and regulations such as the PRTR law* enacted in January 2001, which governs the appropriate management of chemical substances. In addition, the Company is continuing its measures to minimize the environmental impact derived from chemical substances. These measures include development of management systems for enhanced handling of chemical substances, thorough control of emissions into the environment and the development and application of technologies for stabilization and detoxification of PRTR-listed substances under the direction of the newly established Chemical Substances Committees for each plant, and full-scale investigation and employment of alternatives to

harmful chemical substances.

As a visible result of this, we achieved our targets for the release of PRTR-listed solvent emissions into the atmosphere in 2003, and in 2004 we kept emissions to below 10% of 2000 levels. However, as operations overseas have expanded, we are increasingly called upon to respond appropriately to the restrictions on chemical substances in the EU and other overseas markets that are growing ever more strict. Accordingly, the NGK Group is working in concert to further augment efforts to this end both in Japan and overseas, including thoroughgoing control of chemical substances in the processes of procurement, development, and production.

Reduction Target for Chemical Substances

2005 target: Reduce atmospheric solvent emissions to below 20% compared to 2000 levels

Targets achieved in 2003, and in 2004, Kept to below 10% of 2000 levels

*PRTR Law: Abbreviation of the Pollutant Release and Transfer Register Law

Long-term Schedule for Management of Chemical Substances

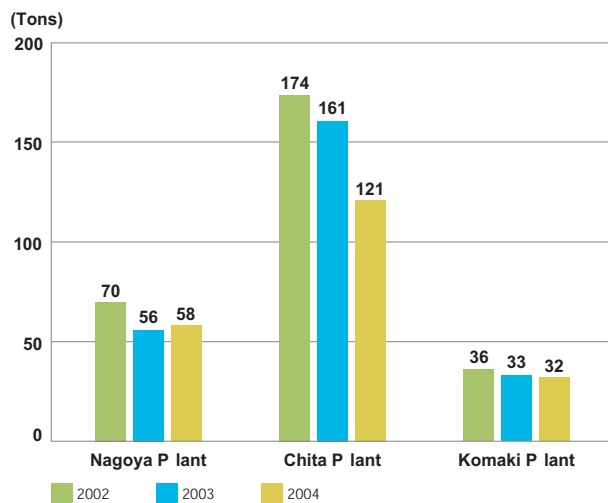
Item		2000	2001	2002	2003	2004	2005
Construction of a management framework	Building of a unified chemical substance management system						
	Chemical Substance Safety Committee						
Compliance with PRTR Law	Reduction target					Target achieved in 2003	
	Careful consideration of quantity used and promotion of recycling						
	Consideration of stabilization and detoxification methods						
Compliance with new regulations	Law Concerning Special Measures Against Dioxins and Polychlorinated-biphenyl (or PCB) Waste						
	EU regulations						
	Regulations in Aichi Prefecture and Nagoya City						
	Risk communication						

Handling of PRTR-listed Substances (Non-consolidated)

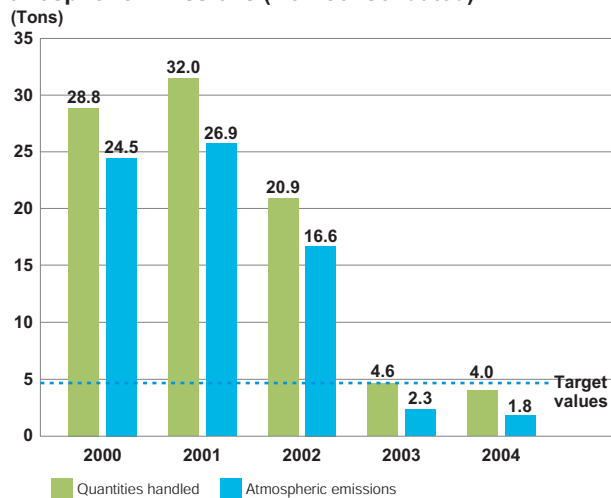
The PRTR Law specifies 354 Class 1 Designated chemical substances. Among them, NGK handled 61 substances in its Company-wide operations in 2004, for the total amount of 210 tons, a 40-ton, 16% reduction from 2003. This reduction in the total amount handled is as a result of appropriate purchasing and management of all chemical substances handled by NGK, including raw materials, fuel, coating materials, and chemicals, in line with both improved chemical management systems, and increased management consciousness.

Broken down by plant, the Nagoya Plant handled approximately 58 tons of 49 substances, a two-ton increase over 2003; the Chita Plant approximately 121 tons of 42 substances, a 40-ton decrease over 2003; and the Komaki Plant approximately 32 tons of 24 substances, a one-ton decrease over 2003. We have achieved definite reductions Company-wide in the amounts of PRTR-listed substances handled in recent years, and we will continue in our stringent and effective handling of chemical substances.

Amounts of PRTR-listed Substances (Non-consolidated)



Changes in Quantities of Solvents* Handled and Atmospheric Emissions (Non-consolidated)



Amounts of PRTR-listed Substances Handled, Released, and Transferred (Non-consolidated)

(tons)

Production site	Substance	2004						
		Amount handled	Amount released				Amount transferred	
			Atmosphere	Water	Soil	Landfill	Sewage	Outside
Nagoya Plant	Toluene	17.32	0.20	0.00	0.00	0.00	0.00	0.04
	Formaldehyde	10.17	0.69	0.00	0.00	0.00	0.00	0.00
	Xylene	9.39	0.17	0.00	0.00	0.00	0.00	0.75
	Acetaldehyde	5.65	0.16	0.00	0.00	0.00	0.00	0.00
	Ethylene glycol	5.01	0.00	0.00	0.00	0.00	0.05	4.94
	Hydrogen fluoride and its water-soluble salts	4.60	1.83	0.00	0.00	0.00	0.00	0.06
	Ethyl benzene	1.80	0.03	0.00	0.00	0.00	0.00	0.00
	Nickel compounds	1.71	0.00	0.00	0.00	0.00	0.05	1.32
	Benzene	0.68	0.02	0.00	0.00	0.00	0.00	0.00
Total	57.85 (49 substances)	3.20	0.00	0.00	0.00	0.13	7.71	
Chita Plant	Beryllium and its compounds	45.60	0.00	0.00	0.00	0.06	0.00	0.12
	Nickel	35.11	0.00	0.00	0.00	0.42	0.00	0.09
	Cobalt and its compounds	11.36	0.00	0.00	0.00	0.19	0.00	0.03
	Manganese and its compounds	10.70	0.00	0.09	0.00	0.00	0.00	0.00
	Chrome and trivalent chrome compounds	7.35	0.00	0.00	0.00	0.00	0.00	0.00
	Copper water-soluble salt	4.75	0.00	0.03	0.00	0.00	0.00	4.73
	Antimony and its compounds	1.49	0.00	0.00	0.00	0.00	0.00	0.02
	Hydrogen fluoride and its water-soluble salts	1.18	1.17	0.00	0.00	0.00	0.00	0.00
	Toluene	1.03	0.58	0.00	0.00	0.00	0.00	0.43
	Dioxins	-	0.0213 mg	0	0	0	0	0.0155 mg
Total	120.69 (42 substances)	2.25	0.14	0.00	0.67	0.00	6.33	
Komaki Plant	Bisphenol-A epoxy resin (polycondensation polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane)	13.60	0.00	0.00	0.00	0.00	0.00	0.14
	Manganese and its compounds	7.07	0.00	0.02	0.00	0.00	0.00	0.03
	Chrome and trivalent chrome compounds	4.11	0.00	0.00	0.00	0.00	0.00	0.07
	Antimony and its compounds	3.00	0.00	0.02	0.00	0.00	0.00	0.36
	Cobalt and its compounds	1.49	0.00	0.01	0.00	0.00	0.00	0.12
	Nickel compounds	0.57	0.00	0.00	0.00	0.00	0.00	0.07
Total	31.91 (24 substances)	0.94	0.05	0.00	0.00	0.00	1.04	
Grand total	210.45 (61 substances)	6.39	0.19	0.00	0.67	0.13	15.09	

Note: Dioxins are subject to be notified as they are generated at special facilities.

Handling of PRTR-listed Substances (Domestic Group companies)

In 2004, the total amount of PRTR-listed substances handled was 126 tons, an 8-ton reduction from 2003. Eight companies provided notification to the government for

a total of nine PRTR-listed substances, down from ten substances in 2003.

Amounts of PRTR-listed Substances Handled, Released, and Transferred (Domestic Group companies)

(tons)

Substance	2004						
	Amount handled	Amount released				Amount transferred	
		Atmosphere	Water	Soil	Landfill	Sewerage	Outside
Toluene	38.24	3.65	0.00	0.00	0.00	0.00	9.96
Lead and its compounds	35.11	0.00	0.00	0.00	0.00	0.00	0.54
Xylene	20.22	4.04	0.00	0.00	0.00	0.00	3.53
Bisphenol-A type epoxy resin	11.17	0.00	0.00	0.00	0.00	0.00	1.10
Vanadium pentoxide	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Styrene	2.75	0.00	0.00	0.00	0.00	0.00	0.00
Antimony and its compounds	2.66	0.00	0.00	0.00	0.00	0.00	0.02
Bis (2-ethylhexyl) phthalate	2.48	0.08	0.00	0.00	0.00	0.00	0.07
Silver and its water-soluble compounds	2.35	0.00	0.00	0.00	0.00	0.00	0.00
Chrome and trivalent chrome compounds	2.06	0.00	0.00	0.00	0.00	0.00	0.02
Tetrahydromethylphthalic anhydride	1.52	0.00	0.00	0.00	0.00 <td 0.00	0.02	
Total	126.12	8.28	0.00	0.00	0.00	0.00	15.33

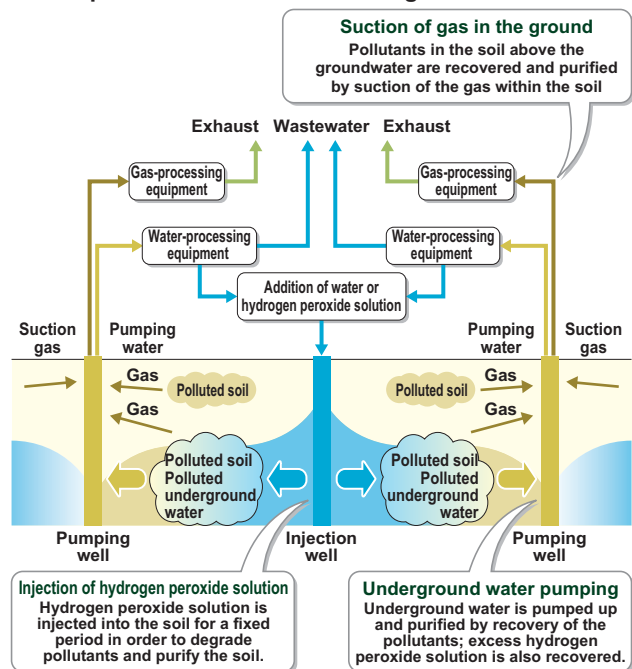
Results of Investigations, and Measures to Prevent Soil and Underground-water Pollution at Group Manufacturing Companies

Based upon its Core Policy on the Environment, NGK voluntarily carried out investigations into soil and underground water pollution within its premises. Results showed that quantities of volatile chlorinated organic compounds such as trichloroethylene and tetrachloroethylene in excess of environmental standards were detected within the premises of NGK Printer Ceramics Co., Ltd. (Komaki, Aichi Prefecture), which produces electronic components, and so a notification was sent on April 19, 2004 to Aichi Prefecture and the city of Komaki, and an explanatory meeting was held for nearby residents and businesses. Furthermore, necessary measures were undertaken rapidly, including the prompt establishment of procedures.

The cause of this pollution was presumed to be a leakage into the soil of volatile chlorinated organic compounds that were used in the plant's ceramic-powder blending process. Consequently, as an emergency response, a barrier well was built on the downstream side and the contaminated underground water was pumped up. As permanent measures, the surface layer of the contaminated soil was purified using gas suctioning, and the deeper layer was cleaned by injecting an oxidizing agent (hydrogen peroxide solution) that promotes the degradation of volatile chlorinated organic compounds, and also by an aeration method. The emitted gas was detoxified in gas-processing equipment that used activated carbon. These cleanup activities meant that as of January 2005, levels of pollution in both soil and underground

water were within environmental standards, and we have moved over from the cleanup stage to a monitoring stage, in which we regularly measure and observe underground water. Furthermore, because we fully abolished use of trichloroethylene and tetrachloroethylene in September 1998, we do not consider that there is a likelihood of a recurrence.

Cleanup of Polluted Soil and Underground Water



Appropriate Chemical-substance Management

Appropriate Management of PRTR-listed Substances

The 2003 revision of regulations carried out by Aichi Prefecture and the city of Nagoya required to set out voluntary targets and to specify and implement plans so as to reduce PRTR-listed substances and to prevent their leakage.

To comply with these revised regulations, NGK has established Chemical Substances Committees for each plant as a part of the environmental management system. Furthermore, the Company has developed regulations relating to the handling of chemical substances, and by

1. monitoring in emissions and transfers of chemical substances and implementing policies to prevent their leakage into the environment, and
2. implementing accident and emergency response measures and creating procedure manuals for emergencies,

we are working toward both appropriate management of PRTR-listed substances and risk management.

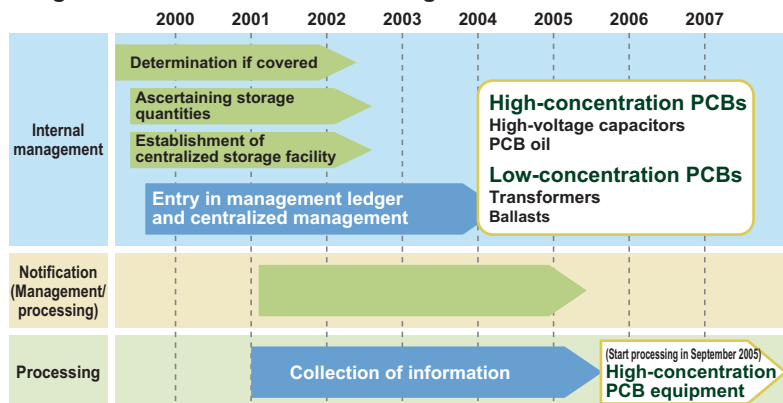
Appropriate Handling of PCBs

In 2000, the Law Concerning Special Measures against Polychlorinated-biphenyl (PCB) Waste was enacted, and this required appropriate PCB handling and management, as well as reporting of handling status to local governments.

In 2001, NGK completed an investigation into the possession of PCBs at three plants in Japan and at domestic and overseas Group companies. As well as establishing guidelines regarding both the loss of equipment and the prevention of leakage or dispersal, we carried out thorough storage management, including our establishment of a centralized storage facility.

In 2004, NGK was storing 192 high-voltage capacitors and 144 liters of PCB oil that have high concentrations of PCBs, and transformers and ballast that have low concentration PCBs. In the future, we will push ahead with appropriate management by investigating the detoxification of PCBs and focusing on the usage of processing plants that are planned to go into operation.

Long-term Schedule for PCB Handling



Storage facility for equipment using PCBs (Chita Plant)

Initiatives for the Future

In 2005, regulations concerning chemical substances are becoming more stringent, with the effectuation of regulations concerning volatile organic compounds (VOCs) and study of the Japanese version of the "Restrictions of Hazardous Substances" (RoHS). To enable us to respond to these laws and regulations, NGK will strictly adhere to laws by quickly procuring related information as well as developing organizational structures and environmental management systems. Since 2001, we have been working towards curbing atmospheric emissions of PRTR-listed

solvents, and in the last four years have succeeded in reducing them by more than 90%. We will continue to focus our efforts on reductions in quantities of PRTR-listed substances used and emitted. From 2006, we will be obliged to abide by RoHS directive, which are European chemical-substance regulations. Accordingly, we will establish a system which effectively implements the green procurement guidelines that were revised in 2004, and will create a framework which can respond to global regulations regarding chemical substances.