

Green Purchasing Requirements

In the purchase of office supplies and appliance, we choose an environmental consideration type product.

Version 2 of our “Green Procurement Guidelines (In-house Use)”

- ① Have less environmental impact during use.
- ② Have a significant effect on environmental improvement during use.
- ③ Have less environmental impact during the disposal stage after use.
- ④ Comply with relevant laws, standards, regulations, etc. in terms of quality and safety.
- ⑤ Be preferably priced the same or lower than similar products (in consideration of longevity).

Number of Vehicles Owned

We changed company car which we use in eco car sequentially.

(No. of cars)

Category	NGK Spark Plug Co., Ltd.		Affiliates
	Head Office/ Factories	Domestic business sites	
Total number of company vehicles	118	94	29
CNG Car, LPG Car	3	0	0
New☆☆☆☆ (75%-decreased level in the exhaust gas standards in 2005)	45	60	11
New☆☆☆☆ (50%-decreased level in the exhaust gas standards in 2005)	9	19	3
☆☆☆ (75%-decreased level in the exhaust gas standards in 2000)	7	7	5
☆☆ (50%-decreased level in the exhaust gas standards in 2000)	6	5	3
☆ (25%-decreased level in the exhaust gas standards in 2000)	4	3	1
Others (Exempted from exhaust gas regulations)	44	0	6

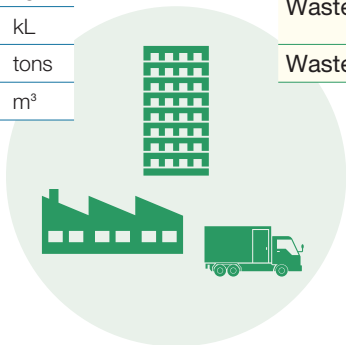
19 Environmental Load from Business Activities

Material Balance of Domestic Business Sites

Input and output with the operation of the domestic offices are listed in the table as follows.

Input			Output		
Type	Classification	Domestic business sites	Type	Classification	Domestic business sites
Energy	Purchased electricity	376,775 kWh	CO ₂ from energy consumption	Office	139 tons
	Gas	5,747 m ³		Transportation	278 tons
	LPG	20 kg	Waste	Recycled waste	3.8 tons
	Gasoline	120 kL		Landfill/incineration	2.4 tons
Paper	Copy paper	5.3 tons	Wastewater	Wastewater	2,478 m ³
Water	Tap water	2,478 m ³			

*There are others including catalogues.



Coverd organization : Tokyo Office, Tokyo Sales Office, Osaka Sales Office, Nagoya Sales Office, Hiroshima Sales Office, Fukuoka Sales Office, Sendai Sales Office, Sapporo Sales Office, Saitama Sales Offide

ISO 14001 Certified Locations

We acquire the certification of ISO14001 and operate environmental management system.

		Name of factories and companies	Timing of certification	Certification organization
NGK Spark Plug Co., Ltd.	1	Head office/factory	'99. 8	JQA *1
	2	Komaki Factory	'00.12	
	3	Miyanojo Factory	'00.12	
	4	Ise Factory	'00.12	
	5	Takenami Factory	'07. 1 *2	
Domestic	6	Nittoku Alfa Service Co., Ltd.	'99. 8	
	7	Nittoku Unyu Co., Ltd.	'00.12	
	8	Ceramic Sensor Co., Ltd.	'00.12	
	9	NTK Ceramic Co., Ltd.	'02.12 *3	
	10	Nansei Ceramic Co., Ltd.	'02.12	
	11	Kamioka Ceramic Co., Ltd.	'04. 1	
	12	Nittoku Seisakusho Co., Ltd.	'04. 1	
	13	Nichiwa Kiki Co., Ltd.	'04. 1	
	14	Tono Ceramic Co., Ltd.	'04. 1	
Overseas	15	Tokai Taima Kogu Co., Ltd.	'09. 1	
	16	NGK Spark Plug Industries Europe S.A.S.	'00. 5	AFAQ
	17	NGK Spark Plugs (U.S.A.),Inc. WV Factory	'00. 7	TUV Rheinland of North America, Inc.
	18	NGK Spark Plugs (U.S.A.),Inc. IRV Factory	'01. 8	
	19	NGK Spark Plugs (U.K.) Ltd.	'01.12	BSI (British Standard Institute)
	20	Ceramica e Velas de Ignicao NGK do Brazil Ltda.	'01.12	ABS Quality Evaluations
	21	Siam NGK Spark Plug Co.,Ltd.	'02.11	RWTÜV Thailand Ltd.
	22	NGK Spark Plug Europe GmbH	'04.11	TÜV Industrie Service GmbH
	23	Woo Jin Industry Co.,Ltd.	'05. 4	kfq (Korean Foundation for Quality)
	24	NGK Spark Plugs Malaysia Berhad.	'06. 3	SIRIM QAS
	25	NTK Technical Ceramics Korea Co.,Ltd.	'06. 4	ISC (International Standard Certification)
	26	NGK Spark Plug (Shanghai) Co.,Ltd.	'07. 4	SGS
	27	P.T. NGK Busi Indonesia	'07.10	Bureau Veritas Certification
	28	NTK Technical Ceramics Polska Sp.z o.o.	'08. 1	DEKRA Certification GmbH
29	NGK Spark Plugs SA (Pty) Ltd.	'08. 4	Bureau Veritas Certification	

*1 We changed a certification organization to JQA in 2009.

*2 In October 2009, Iijima Ceramic Co., Ltd., Nakatsugawa Ceramic Co., Ltd., and Kani Ceramic Co., Ltd. were merged and established NTK Ceramic Co., Ltd.

With this reorganization, Takenami factory of Nakatsugawa Ceramic Co., Ltd. became the factory of NGK Spark Plug Co., Ltd. Takenami Factory acquired the certification as Nakatsugawa Ceramic Co., Ltd.

*3 NTK Ceramic Co., Ltd. took over the certification of ISO14001 from Nakatsugawa Ceramic Co., Ltd.

Numbers of Official Qualification Holders and Internal Auditors

According to business operation, we bring up employees with public qualification and technical knowledge.

(people)

		NGK Spark Plug Co., Ltd.	Affiliates
Pollution control manager	Air	40	1
	Water	76	12
	Noise	39	1
	Vibration	24	1
Energy manager		38	7
Specially controlled industrial waste manager		40	20
Environment measurement engineer		3	0
Work environment measurement engineer		4	0
ISO14001 assistant examiners		8	1
ISO14001 Internal auditors		396	257

(As of March 2010)

Data on Atmosphere, Water quality, noise and vibration

We measure regularly the atmosphere, the water, the noise, the vibration, and manage them to observe laws and regulations.

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value	
					Low/Local regulation	Agreement with the city		Average	MAX
Head Office/ Factory	Atmosphere	Soot and dust	Boiler (No.12)	mg/Nm ³	50	—	40	0.0	0.0
			Firing furnace (PR-2)	mg/Nm ³	150	—	120	9.0	10.0
		NOx	Boiler (No.12)	ppm	150	—	120	48	48
			Firing furnace (PR-2)	ppm	180	—	144	66.5	67
	Drain (sewer)	pH		—	5.0~9.0	—	5.4~8.6	7.1	7.3
		SS		mg/l	600	—	480	21.1	71
		BOD		mg/l	600	—	480	15	29
		n-hexane extract		mg/l	30	—	24	2.3	11
		Cyanogen		mg/l	1	—	0.8	0.20	0.4
		Total chromium		mg/l	2	—	1.6	0.06	0.07
		Hexavalent chromium		mg/l	0.5	—	0.4	<0.04	<0.04
		Zinc		mg/l	2	—	1.6	0.44	0.60
		Lead		mg/l	0.1	—	0.08	<0.02	<0.02
		Nitrogen		mg/l	120	—	96	23.3	34
		Phosphor		mg/l	16	—	12.8	0.37	0.98
		Fluorine		mg/l	8	—	6.4	0.41	0.7
	Boron		mg/l	10	—	8	<1	<1	
	Noise	Morning	R spot	dB	70	—	68	53.2	53.2
			T spot	dB	65	—	63	61.2	61.2
		Daytime	R spot	dB	70	—	68	67.0	67.0
			T spot	dB	65	—	63	66.7	66.7
		Evening	R spot	dB	70	—	68	65.4	65.4
			T spot	dB	65	—	63	60.2	60.2
Night		R spot	dB	65	—	64	57.0	57.0	
		T spot	dB	55	—	54	61.7	61.7	
Vibration	Daytime	R spot	dB	70	—	65	43	43	
		T spot					<40	<40	
	Night	R spot	dB	65	—	60	43	43	
		T spot					40	40	

*1 : These values apply to the background noise level. The background noise level is the noise when machines, and so on, are not operating. It is affected by traffic noise, noise from adjacent factories, and so on.

Data on Atmosphere, Water quality, noise and vibration

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value		
					Low/Local regulation	Agreement with the city		Average	MAX	
Komaki Factory	Atmosphere	Soot and dust	Boiler (No.1-5)	mg/Nm ³	200	200	160	<2	<2	
			Firing furnace (No.9-10)	mg/Nm ³	200	200	160	<2	<2	
		NOx	Boiler (No.1-5)	ppm	250	-	200	20	32	
			Firing furnace (No.9-10)	ppm	200	-	160	125	130	
		SOx	Boiler (No.1-5)	Nm ³ /h	8.379	-	6.703	<0.3	<0.3	
			Firing furnace (No.9-10)	Nm ³ /h	8.379	-	6.703	<4	<4	
	Drain (public water area)	pH	East	-	5.8~8.6	6.0~8.0	6.2~7.8	7.4	7.6	
			West					7.4	7.6	
			North					7.2	7.4	
		SS	East	mg/l	30	-	24	1.8	3.0	
			West					2.1	10.0	
			North					3.6	7.0	
		BOD	East	mg/l	25	-	20	3.3	4.5	
			West					1.4	3.6	
			North					2.3	7.9	
		COD	East	mg/l	-	-	-	4.2	5.6	
			West					4.0	6.6	
			North					5.6	9.0	
		COD(total)	Komaki Prant total		kg/day	169.02	-	169.02	9.60	21.77
			East	mg/l	5.0	5.0	4.0	<0.5	0.6	
			West					<0.5	0.8	
		North	<0.5					0.7		
		Cyanogen	East	mg/l	1.0	0.5	0.4	<0.1	<0.1	
			West					<0.1	<0.1	
			North					<0.1	<0.1	
		Total chromium	East	mg/l	2.0	1.0	0.8	<0.04	<0.04	
			West					<0.04	<0.04	
			North					<0.04	<0.04	
		Copper	East	mg/l	3.0	1.0	0.8	0.04	0.05	
			West					0.07	0.12	
			North					0.11	0.73	
		Zinc	East	mg/l	2.0	1.8	1.6	0.20	0.45	
			West					0.04	0.09	
			North					0.07	0.15	
		Lead	East	mg/l	0.1	-	0.08	<0.02	<0.02	
			West					<0.02	<0.02	
			North					<0.02	<0.02	
		Nitrogen	East	mg/l	120	-	60	6.80	10.0	
			West					3.42	7.5	
			North					6.94	12.0	
		Nitrogen(total)	Komaki Prant total		kg/day	124.26	-	124.26	11.42	23.75
			East	mg/l	16	-	8.0	0.32	0.5	
			West					0.54	1.0	
		North	0.36					0.7		
		Phosphorus(total)	Komaki Prant total		kg/day	12.471	-	12.471	0.78	2.0
			East	mg/l	-	-	-	<0.1	0.10	
			West					<0.1	<0.1	
		North	<0.1					<0.1		
		Manganese	East	mg/l	10	-	8	<0.1	<0.1	
			West					<0.1	<0.1	
			North					<0.1	0.20	
		Fluorine	East	mg/l	8	-	6.4	0.48	0.7	
			West					1.28	1.9	
			North					0.24	0.4	
	Boron	East	mg/l	10	-	8	<1	2.0		
		West					<1	<1		
		North					<1	<1		
	Noise	Morning	Fifth spot	dB	65	-	63	51.5	51.5	
		Daytime	Fifth spot	dB	70	-	68	51.2	60.9	
		Evening	Fifth spot	dB	65	-	63	49.7	49.7	
		Night	Fifth spot	dB	60	-	58	47.8	47.8	
	Vibration	Daytime	Fifth spot	dB	70	-	70	<40	<40	
		Night	Fifth spot	dB	65	-	65	<40	<40	

Data on Atmosphere, Water quality, noise and vibration

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value	
					Low/Local regulation	Agreement with the city		Average	MAX
Miyanojo Factory	Atmosphere	Soot and dust	Absorption heater/chiller	mg/Nm ³	300	—	240	7	7
			3T water boiler	mg/Nm ³	100	—	80	6	6
		NOx	Absorption heater/chiller	ppm	180	—	144	81	81
			3T water boiler	ppm	150	—	120	92	92
	Drain (public water area)	pH		—	5.8~8.6	6.0~8.0	6.5~7.8	7.3	7.6
		SS		mg/l	60	35	28	4.8	12.0
		BOD		mg/l	40	20	16	3.2	7.0
		COD		mg/l	160	—	128	8.5	9.0
		n-hexane extract		mg/l	5	5	4	<2.5	<2.5
		Cyanogen		mg/l	1	—	0.8	<0.05	<0.05
		Hexavalent chromium		mg/l	0.5	—	0.4	<0.05	<0.05
		Copper		mg/l	3	—	2.4	<0.05	<0.05
		Zinc		mg/l	2	—	1.4	0.14	0.07
		Lead		mg/l	0.1	—	0.08	<0.05	<0.05
		Fluorine		mg/l	8	—	6.4	0.59	2
		Boron		mg/l	10	—	8	2.9	5.5
	Coli bacteria		counts/cm ³	3,000	—	2,400	0	0	
	Noise	Morning		dB	60	—	55	44.4	45.9
		Daytime		dB	65	—	60	51.5	52.2
		Evening		dB	60	—	55	46.9	47.5
		Night		dB	50	—	50	44.8	46.3
	Vibration	Daytime		dB	60	—	60	29.3	29.3
		Night		dB	55	—	55	29.3	29.3
Ise Factory	Atmosphere	Soot and dust	Firing furnace	mg/Nm ³	250	—	100	<5	<5
				—	5.8~8.6	—	6.0~8.4	8.0	8.2
	Drain (public water area)	SS		mg/l	90	30	24	1.0	1.0
		BOD		mg/l	25	10	8	1.0	1.0
		COD		mg/l	25	15	12	1.2	2.0
			(Living related)		mg/l	25	—	20	5.0
		COD(total)		kg/day	3.4	—	3.4	0.20	0.40
		n-hexane extract		mg/l	5	—	2.5	<1	<1
		Cyanogen		mg/l	1	—	0.5	<0.1	<0.1
		Total chromium		mg/l	2	—	1	<0.04	<0.04
		Hexavalent chromium		mg/l	0.5	—	0.25	<0.04	<0.04
		Copper		mg/l	1	—	0.5	<0.02	<0.02
		Zinc		mg/l	2	—	1	<0.005	<0.005
		Lead		mg/l	0.1	—	0.05	<0.01	<0.01
		Nitrogen		mg/l	120	—	60	0.67	1.90
			(Living related)		mg/l	120	—	60	7.5
		Nitrogen(total)		kg/day	4.1	—	4.1	0.28	0.72
		Phosphorus		mg/l	16	—	8	0.23	0.44
			(Living related)		mg/l	16	—	8	1.02
		Phosphorus(tota)		kg/day	0.39	—	0.39	0.04	0.10
		Manganese		mg/l	—	—	—	<0.02	<0.02
		Fluorine		mg/l	8	—	4	<0.1	<0.1
		Boron		mg/l	10	—	5	0.01	0.02
		Coli bacteria		counts/cm ³	3,000	—	1,500	0	0
		Noise	Morning	East	dB	55	—	55	44.3
	Daytime		East	dB	60	—	58	40.2	40.2
	Evening		East	dB	55	—	55	48.6	48.6
	Night		East	dB	50	—	50	45.6	45.6
	Vibration	Daytime (all directions)		dB	65	—	—	<50	<50
		Night (all directions)		dB	60	—	—	<50	<50

Data on Atmosphere, Water quality, noise and vibration

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value				
					Low/Local regulation	Agreement with the city		Average	MAX			
Takenami Factory	Drain (public water area)	pH		—	5.8~8.6	5.8~8.6	5.8~8.6	7.7	8.2			
		SS		mg/l	200	200	100	5.3	11.0			
		BOD		mg/l	160	160	130	8.1	10.0			
		COD		mg/l	160	160	80	6.4	9.0			
		n-hexane extract		mg/l	5	—	4	<0.5	<0.5			
		Nitrogen		mg/l	120	—	120	5.0	7.5			
		Phosphorus		mg/l	16	—	16	0.11	0.15			
	Coli bacteria		counts/cm ³	3,000	—	2,000	39.0	100				
	Noise	Morning	Fourth spot	dB	50	50	50	46.0	46.0			
		Daytime	Fourth spot	dB	55	55	55	46.0	47.0			
		Evening	Fourth spot	dB	50	50	50	46.0	46.0			
		Night	Fourth spot	dB	45	45	45	45.0	45.0			
	Vibration	Daytime	Fourth spot	dB	55	55	55	15.0	15.0			
Night		Fourth spot	dB	50	50	50	15.0	15.0				
NTK Ceramic (Iijima Factory)	Atmosphere	Soot and dust	Firing furnace: YA-5,6	mg/Nm ³	250	—	250	<5	<5			
			Firing furnace: YA-7,8					<5	<5			
			Absorption heater/chiller: FGL					100	—	100	<5	<5
			Absorption heater/chiller: FGDL								<5	<5
		NOx	Firing furnace: YA-5,6	ppm	180	—	180	<10	<10			
			Firing furnace: YA-7,8					<10	<10			
	Absorption heater/chiller: FGL		28.5					31				
	Absorption heater/chiller: FGDL	35.0	36									
	Drain (public water area)	pH		—	5.8~8.6	—	6.0~8.0	7.4	7.5			
		SS		mg/l	50	—	10	1.13	3.0			
		BOD		mg/l	30	—	25	1.07	2.1			
		COD		mg/l	30	—	30	2.32	6.7			
		n-hexane extract		mg/l	5	—	5	<1	<1			
		Cyanogen		mg/l	0.5	—	0.2	<0.01	<0.01			
		Copper		mg/l	2	—	2	0.04	0.05			
		Zinc		mg/l	3	—	3	<0.05	<0.05			
		Lead		mg/l	0.1	—	0.1	<0.05	<0.05			
		Fluorine		mg/l	15	—	15	0.43	0.50			
		Boron		mg/l	50	—	50	0.93	2.00			
		Phenols		mg/l	5	—	5	<0.02	<0.02			
		Ammonia		mg/l	500	—	500	10.6	12.0			
Coli bacteria		counts/cm ³	3,000	—	3,000	21.8	48					
Noise		Morning	First spot	dB	—	65	65	45.5	45.5			
	Daytime	First spot	dB	—	65	65	49.5	49.5				
	Evening	First spot	dB	—	65	65	50.2	50.2				
	Night	First spot	dB	—	55	55	51.0	51.0				
NTK Ceramic (Nakatsugawa Factory)	Atmosphere	Soot and dust	Firing furnace(NN-1)	mg/Nm ³	150	50	20	6	6			
		SOx	Firing furnace(NN-1)	Nm ³ /h	—	—	—	0	0			
	Drain (public water area)	pH	Factory 1&2	—	5.8~8.6	5.8~8.6	6.2~8.6	7.5	7.8			
			Factory 3					7.3	7.7			
		SS	Factory 1&2	mg/l	200	50	35	2.5	4.0			
			Factory 3					3.0	4.0			
		BOD	Factory 1&2	mg/l	160	15	13	1.3	2.3			
			Factory 3					5.7	9.5			
		COD	Factory 1&2	mg/l	160	40	30	4.6	7.5			
			Factory 3					11.9	25.0			
		n-hexane extract	Factory 1&2	mg/l	5	5	4	<0.5	<0.5			
			Factory 3					<0.5	<0.5			
		Nitrogen	Factory 1&2	mg/l	120	10	—	4.4	5.9			
			Factory 3					4.3	6.3			
		Phosphorus	Factory 1&2	mg/l	16	3	2.5	0.04	0.07			
			Factory 3					0.25	1.2			
		Coli bacteria	Factory 1&2	counts/cm ³	3,000	3,000	1,000	115.6	420			
	Factory 3		0					0				
	Noise	Morning	Fourth spot	dB	65	60	58	48.0	49.0			
		Daytime	Fourth spot	dB	70	65	63	48.0	48.0			
		Evening	Fourth spot	dB	65	60	58	47.5	48.0			
		Night	Fourth spot	dB	60	50	50	47.0	48.0			
	Vibration	Daytime	Fourth spot	dB	65	—	63	21.4	21.4			
		Night	Fourth spot	dB	60	—	58	21.4	21.4			

Data on Atmosphere, Water quality, noise and vibration

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value	
					Low/Local regulation	Agreement with the city		Average	MAX
NTK Ceramic (Kani Factory)	Atmosphere	Soot and dust		mg/Nm ³	100	-	90	7	7
		NOx		ppm	150	-	135	42	42
	Drain (sewer)	pH		-	5.8~8.6	-	5.9~8.5	7.3	7.3
		SS		mg/l	200	-	180	2.7	2.7
		BOD		mg/l	160	-	144	36.0	36.0
		COD		mg/l	160	-	30	28.0	28.0
		n-hexane extract		mg/l	5	-	4.5	1.0	1.0
	Noise	Morning	First spot	dB	50	-	50	49.1	49.1
		Daytime	First spot	dB	60	-	60	43.3	43.3
		Evening	First spot	dB	50	-	50	44.6	44.6
Night		First spot	dB	45	-	45	42.5	42.5	
Nansei Ceramic	Drain (public water area)	pH		-	-	-	5.8~8.6	7.0	7.2
		SS		mg/l	-	-	90	2	4
		BOD		mg/l	-	20	20	<1	1
		COD		mg/l	-	-	40	2.0	4.0
		n-hexane extract		mg/l	-	-	1	<1	<1
		Lead		mg/l	-	-	0.1	<0.01	<0.01
		Nitrogen		mg/l	-	-	100	1.5	2.8
		Phosphorus		mg/l	-	-	16	0.2	0.33
	Coli bacteria		counts/cm ³	-	-	1,000	0.3	1.0	
	Noise	Morning	North	dB	55	-	55	51.0	51.3
		Daytime	North	dB	60	-	60	55.5	56.8
		Evening	North	dB	55	-	55	50.8	51.7
		Night	North	dB	50	-	50	47.3	47.7
	Kamioka Ceramic	Drain (public water area)	pH	①	-	5.8~8.6	-	6.2~8.2	7.7
②				-	5.8~8.6	-	6.2~8.2	7.5	7.7
③				-	5.8~8.6	-	6.2~8.2	7.6	7.8
SS			①	mg/l	200	-	50	4.0	7.4
			②	mg/l	200	-	50	13.2	20.0
			③	mg/l	200	-	50	5.2	7.6
BOD			①	mg/l	160	-	40	0.90	1.3
			②	mg/l	160	-	40	8.2	11
			③	mg/l	160	-	40	4.5	6.6
COD			①	mg/l	160	-	40	2.1	2.6
			②	mg/l	160	-	40	18.0	19
			③	mg/l	160	-	40	16.5	23.0
n-hexane extract		①	mg/l	5	-	2.5	0.6	0.6	
		②	mg/l	5	-	2.5	<0.5	<0.5	
		③	mg/l	5	-	2.5	<0.5	<0.5	
Coli bacteria		①	counts/ml	3,000	-	300	<30	<30	
		②	counts/ml	3,000	-	300	<30	<30	
		③	counts/ml	3,000	-	300	<30	<30	
Noise		Morning	Fourth spot	dB	60	-	60	45	45
		Daytime	Fourth spot	dB	65	-	65	48	48
	Evening	Fourth spot	dB	60	-	60	46	46	
	Night	Fourth spot	dB	50	-	50	45	45	
Nittoku Seisakusho (Head Office Factory)	Drain (sewer)	pH	① Office building	-	5.0~	-	5.8~9.0	7.1	7.1
			② Head factory	-	5.0~	-	5.8~9.0	8.7	8.7
			③ West factory	-	5.0~	-	5.8~9.0	7.2	7.2
		SS	① Office building	mg/l	600	-	300	20	20
			② Head factory	mg/l	600	-	300	31	31
			③ West factory	mg/l	600	-	300	2	2
		BOD	① Office building	mg/l	600	-	300	76	76
			② Head factory	mg/l	600	-	300	68	68
			③ West factory	mg/l	600	-	300	4.6	4.6
		n-hexane extract	① Office building	mg/l	50	-	25	-	-
			② Head factory	mg/l	50	-	25	<0.5	<0.5
			③ West factory	mg/l	50	-	25	<0.5	<0.5
	Noise	Morning	Second spot	dB	60	-	60	61	61
		Daytime	Second spot	dB	65	-	65	61	61
Evening		Second spot	dB	60	-	60	59	59	
Vibration	Daytime	Second spot	dB	65	-	65	<45	<45	
	Night	Second spot	dB	60	-	60	<45	<45	

*1 : These values apply to the background noise level. The background noise level is the noise when machines, and so on, are not operating. It is affected by traffic noise, noise from adjacent factories, and so on.

Data on Atmosphere, Water quality, noise and vibration

Name of factories and companies	Item	Type		Unit	Regulation value		Voluntary standard value	Actual Value		
					Low/Local regulation	Agreement with the city		Average	MAX	
Nittoku Seisakusho (Oguchi Factory)	Drain (public water area)	pH	①	-	5.8~8.6	-	6.0~8.4	7.5	7.5	
			②					7.2	7.2	
		SS	①	mg/l	30	-	-	1	1	
			②					1.0	1.0	
		BOD	①	mg/l	25	-	20	1.0	1.0	
			②					3.4	3.4	
		n-hexane extract	①	mg/l	5	-	4	1.0	1.0	
			②					1.0	1.0	
	Noise	Morning	First spot	dB	55	55	55	53	53	
		Daytime	First spot	dB	60	60	60	55	55	
		Evening	First spot	dB	55	55	55	53	53	
		Night	First spot	dB	50	50	50	50	50	
	Vibration	Daytime	First spot	dB	60	-	60	51	51	
Night		First spot	dB	55	-	55	49	49		
Nittoku Seisakusho (Satsuma Factory)	Drain (public water area)	pH		-	5.8~8.6	-	5.8~8.6	8.1	8.1	
		SS		mg/l	60	-	60	57	57	
		BOD		mg/l	40	-	40	3.6	3.6	
		n-hexane extract		mg/l	5	-	5	<2.5	<2.5	
		Coli bacteria		counts/cm ³	3,000	-	3,000	980	980	
	Noise	Morning	First spot	dB	65	-	50	47	47	
		Daytime	First spot	dB	65	-	60	47	47	
		Evening	First spot	dB	65	-	50	50	50	
		Night	First spot	dB	65	-	45	45	47	
	Vibration	Daytime	First spot	dB	70	-	60	44	44	
		Night	First spot	dB	65	-	45	43	43	
Nichiwa Kiki	Drain (sewer)	pH		-	5.0~	-	6.0~8.0	7.1	7.2	
		n-hexane extract		mg/l	50	-	40	1.25	2.0	
	Noise	Daytime	Cooling tower north side	dB	65	-	63	61.6	61.6	
Tono Ceramic	Atmosphere	Soot and dust		mg/Nm ³	-	-	200	26	30	
		NOx		ppm	-	-	400	63	69	
		pH		-	-	-	5.8~8.6	7.3	7.3	
	Drain (public water area)	SS		mg/l	-	-	200	6.0	6.0	
		BOD		mg/l	-	-	160	25.0	25.0	
		n-hexane extract		mg/l	-	-	5	<0.5	<0.5	
	Noise	Morning		dB	50	-	50	45	47	
		Daytime		dB	60	-	60	53.7	57	
		Evening		dB	50	-	50	45	47	
		Night		dB	45	-	45	44	45	
Ceramic Sensor	Atmosphere	Soot and dust		mg/Nm ³	200	200	200	0.001	0.001	
		NOx		ppm	-	-	-	60	71	
	Drain (public water area)	pH		-	6.0~8.0	6.0~8.0	6.0~8.0	7.3	7.7	
		SS		mg/l	18	18	18	3.5	15.0	
		BOD		mg/l	18	18	18	2.3	11.0	
		COD		mg/l	18	18	18	7.9	17.0	
		n-hexane extract		mg/l	2	2	2	1.0	1.0	
		Nitrogen		mg/l	30	30	30	5.7	20.0	
		Phosphorus		mg/l	4	-	4	0.1	1.0	
		Fluorine		mg/l	8	-	8	2.1	4.7	
	Noise	Boron		mg/l	10	-	10	1.7	3.7	
		Daytime		dB	70	-	70	56.3	60.1	
		Night		dB	60	-	60	55.1	58.9	
	Tokai Taima Kogu	Noise	Morning	east	dB	60	-	60	43.2	43.2
			Daytime	east	dB	65	-	65	45.3	45.3
Evening			east	dB	60	-	60	43.4	43.4	
Night			east	dB	50	-	50	41.1	41.1	
Vibration		Daytime	east	dB	65	-	65	48	48	
		Night	east	dB	60	-	60	48	48	

*1 : These values apply to the background noise level. The background noise level is the noise when machines, and so on, are not operating. It is affected by traffic noise, noise from adjacent factories, and so on.

Environment Conservation Costs

(Unit : million yen)

Classification	Items	Non-consolidated				NGK Spark Plug Group*					
		Investment		Expense		Investment		Expense			
		2008	2009	2008	2009	2008	2009	2008	2009		
Costs within the business area	Pollution prevention cost	Air/water pollution prevention and noise reduction		36	53	1,757	693	40	55	1,987	990
	Global environmental conservation cost	Global warming prevention, energy conservation		19	30	366	208	27	41	424	239
	Resource circulation cost	Effective resource utilization, industrial waste treatment/disposal		8	36	530	454	10	37	651	581
	Sub-total		63	120	2,654	1,355	76	133	3,062	1,810	
Upstream & downstream cost	Recycling of products, etc., green purchase differences		0	0	4	3	0	0	4	5	
Management activity cost	Employee environmental education, EMS construction and operation		8	4	345	364	9	4	406	435	
R&D cost	R&D of products promoting environment preservation		548	132	5,691	3,950	548	132	5,691	3,950	
Social activity cost	Nature protection, afforestation, environmental ads		0	0	188	176	0	1	194	185	
Environment damage correction cost	Repair of soil contamination, disrupted nature		0	0	79	6	0	0	79	6	
Other costs	-		0	0	0	1	0	0	0	1	
Total			620	256	8,960	5,854	633	271	9,435	6,391	

*Excluding Nittoku Alpha Service Co., Ltd.

Calculation concept

The environment preservation cost is classified according to the guidelines of the Ministry of the Environment, and is calculated using a proportional division method according to rules drawn up by the Group, based on the direct equipment investments and costs.

Environmental Conservation Effective Value

(Unit: million yen)

Area of recognized effect		Non-consolidated
Revenue	Revenue generated from the recycling of waste generated in operations or used products	216
Cost saving	Energy cost saving achieved from energy conservation efforts	58
	Reduction of water expenses through water saving	2
	Waste disposal cost saving achieved by resource conservation and recycling efforts	8
Total		284

Environmental Conservation Effective Volume

Effect measured in the business area	Classification	Types of effect	Non-consolidated			NGK Spark Plug Group		
			2008	2009	Difference from the previous fiscal year	2008	2009	Difference from the previous fiscal year
Effect measured with respect to resource input into operations	Energy consumption	Purchased electricity (GWh)	25,567	21,840	-3,727	36,886	33,021	-3,865
		Gas (million m ³)	1,527	1,283	-244	1,603	1,439	-164
		LPG (tons)	4,869	3,700	-1,169	10,559	8,312	-2,247
		Heavy oil A (kL)	51	36	-15	51	36	-15
	Water consumption	Tap water (m ³)	982,498	751,864	-230,634	1,165,701	938,113	-227,588
		Well water (m ³)	841,991	570,580	-271,411	963,205	850,653	-112,552
		Quantity of PRTR law-regulated substances handled (tons)	560	494	-66	800	706	-94
Effect measured with respect to environmental load and waste from business activities		CO ₂ emission from energy consumption (tons)	138,147	116,078	-22,069	194,580	170,853	-23,727
		Recycled plant wastewater *(tons)	1,300,042	887,816	-412,226	1,430,957	1,072,367	-358,590
	Waste	Effectively utilized mass (tons)	19,363	12,839	-6,524	21,610	16,026	-5,584
		Buried, incineration (tons)	138	98	-40	161	111	-50
		PRTR law-regulated substances released into air and water (tons)	13.3	6.5	-7	152	131	-21

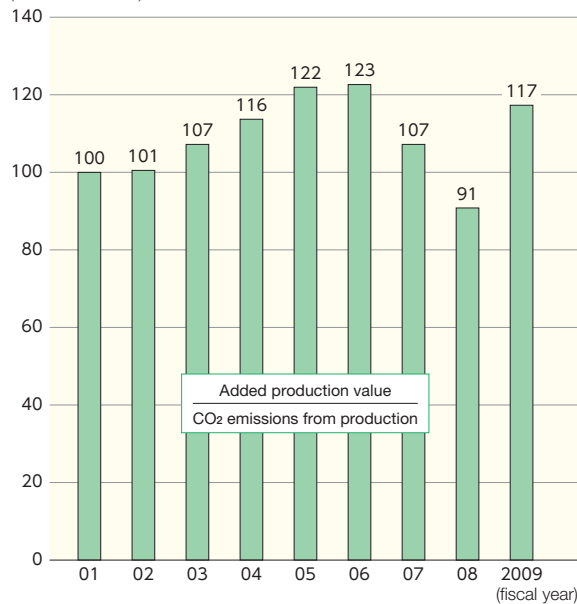
*Definition of recycled plant wastewater: Recycled water is defined as water that is reused after treatment of waste water.

Eco Efficiency

The NGK Spark Plug Group evaluates the quantity of CO₂ emissions, the quantity of waste generated, and so on, as the environmental effectiveness, and is promoting environmental management.

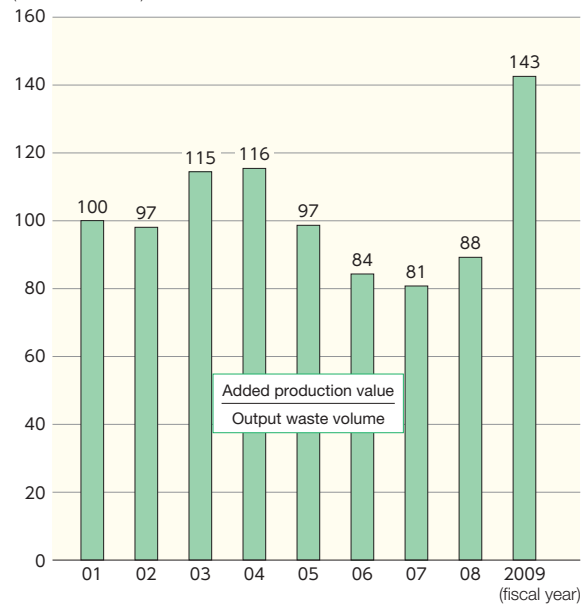
Index of CO₂ from production (non-consolidated)

(Fiscal 2001=100)



Index of output waste (non-consolidated)

(Fiscal 2001=100)



Eco-efficiency

This is an indicator of the ratio of the created economy value to the environmental load accompanying business activities. The higher the value the better is the efficiency.

$$\text{Eco-efficiency} = \frac{\text{Added production value}}{\text{Environmental load}}$$

* The added production value is the amount left over after subtracting the cost of materials and subcontracting (including the cost of parts purchased from affiliates) from net sales.

Results of computing greenhouse gases according to the system for computing, reporting on, and publicizing the quantity of greenhouse gases

Based on the Law concerning the promotion of the measures to cope with global warming, we compute greenhouse gas emissions volume.

The volume of greenhouse gasses other than CO₂ from energy sources is listed in the table as follows.

(tons CO₂)

		Head Office/ Factory	Komaki Factory	Miyanojo Factory	Ise Factory	Total
Non-energy-based carbon dioxide	CO ₂	–	0.024	–	–	0.0
Methane	CH ₄	16	112	7.7	14.5	150.4
Nitrous oxide	N ₂ O	5.5	56	7.3	4.9	73.7
Hydro-fluorocarbon	HFC	0.3	0.8	–	–	1.1
Perfluorocarbon	PFC	–	1,482	–	100.4	1,582.8
Sulfur hexafluoride	SF ₆	0.3	5.7	6.3	4.8	17.1
Total		22	1,657	21	124	1,825

Volumes of Waste Generated at Respective Offices and Factories

The volume of waste generated in fiscal 2009 in the factories and the affiliated companies is listed in the table as follows.

Name of factories and companies		Volume of emissions (tons)	Volume effectively Recovery rate used (tons)	Volume of buried and incineration (tons)	Recovery rate (%)
NGK Spark Plug Co., Ltd.	Head Office / Factory	797	786	10.9	98.6%
	Komaki Factory	8,630	8,560	70.0	99.2%
	Miyanojo Factory	2,816	2,803	12.8	99.5%
	Ise Factory	660	655	4.6	99.3%
	Takenami Factory	36	36	0.0	100.0%
Subtotal		12,938	12,839	98	99.2%
Affiliates	NTK Ceramic (Iijima Factory)	576	574	2.1	99.6%
	NTK Ceramic (Nakatsugawa Factory)	388	383	4.6	98.8%
	NTK Ceramic (Kani Factory)	63	63	0.2	99.6%
	NTK Ceramic (Komaki Factory)	1,149	1,148	0.2	100.0%
	Nansei Ceramic	9	9	0.0	99.5%
	Kamioka Ceramic	33	33	0.3	99.2%
	Nittoku Seisakusho	234	232	2.0	99.2%
	Nichiwa Kiki	11	11	0.1	99.5%
	Tono Ceramic	12	11	0.8	93.1%
	Ceramic Sensor	722	720	2.1	99.7%
	Tokai Taima Kogu	2	2	0.3	86.7%
Total		16,137	16,026	111	99.3%

Per-region PRTR data

The table contains the substances that each business location was required to report

Name of factories and companies	Cabinet order No.	Name of chemical substance	Quantity handled	Quantity released			Quantity transferred			Quantity removed and treated	Quantity taken out
				Atmosphere	Public water area	Soil	Public sewer	Buried and incineration	Effective use		
Head Office/ Factory	40	Ethylbenzene	4,330	0						4,330	
	63	Xylene	20,838	2				0		20,836	
	68	Chromium and chromium (III) compounds	6,313				1	0	556		5,755
	108	Inorganic cyanide compounds (except complex salts and cyanates)	1,062				9			1,053	
	224	1,3,5-trimethylbenzene	2,117	0						2,117	
	227	Toluene	47,374	37				0		47,336	
	231	Nickel	48,977						83		48,894
299	Benzene	2,325	1						2,324		
Komaki Factory	16	2-aminoethanol	5,236					5,181	56		
	25	Antimony and its compounds	2,430					48	440		1,943
	30	Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid) ; bisphenol A type epoxy resin (liquid)	3,678							3,678	
	40	Ethylbenzene	1,687	5				295	1,387		
	63	Xylene	23,453	4,400				12,582	6,471		
	100	Cobalt and its compounds	1,422	0			0	81	0	1,341	
	108	Inorganic cyanide compounds (except complex salts and cyanates)	4,315					218	2,014	2,082	
	207	Copper salts (water-soluble, except complex salts)	74,669		40			1,461	73,168		
	227	Toluene	17,266	342				30	16,894		
	230	Lead and its compounds	2,923					0	294		2,628
	231	Nickel	4,259					73	170		4,015
	232	Nickel compounds	5,981		15			2,348	3,618		
	243	Barium and the water solubility compound	14,812					540		14,272	
	299	Benzene	544	2					542		
	304	Boron and its compounds	32,608		100			18	1,839		30,650
309	Poly (oxyethylene) nonylphenyl ether	1,593						1,558	35		
310	Formaldehyde	5,251						5,198	53		
311	Manganese and its compounds	1,294		0				1,267		27	
Miyanojo Factory	68	Chromium and chromium (III) compounds	1,300					0	1,227		73
	108	Inorganic cyanide compounds (except complex salts and cyanates)	3,166					31	3,135		
	231	Nickel	118,041								118,041
	304	Boron and its compounds	7,331		27			179		7,125	
Ise Factory	63	Xylene	2,033	1,489					544		
	230	Lead and its compounds	24,888					8	5,810		19,070
Subtotal			493,515	6,279	182	0	10	147	41,934	189,047	255,915
NTK Ceramic (Iijima Factory)	40	Ethylbenzene	4,446	1,092					3,354		
	63	Xylene	2,394	588					1,806		
	108	Inorganic cyanide compounds (except complex salts and cyanates)	2,767		1				1,888	467	411
	227	Toluene	9,130	9,130							
	231	Nickel	1,139								1,139
	270	Di-n-butyl phthalate	1,810						55	1,755	
NTK Ceramic (Nakatsugawa Factory)	40	Ethylbenzene	1,226	461					701		64
	63	Xylene	6,944	2,606					3,976		363
	68	Chromium and chromium (III) compounds	6,103						2,711		3,392
	227	Toluene	111,451	108,439					3,012		
	230	Lead and its compounds	5,812						2,443		3,370
	270	Di-n-butyl phthalate	19,682						9,200	4,157	6,325
	272	Bis(2-ethylhexyl) phthalate	4,345						3,052	688	606
346	Molybdenum and its compounds	2,278						197		2,081	
NTK Ceramic (Kani Factory)	63	Xylene	1,762	1,762							
	270	Di-n-butyl phthalate	3,132					1,739	1,393		
NTK Ceramic (Komaki Factory)	63	Xylene	2,213	46					2,167		
	231	Nickel	1,569					1	3		1,565
	232	Nickel compounds	1,661						98	1,563	
Nittoku Seisakusho (Oguchi Factory)	231	Nickel	10,154								10,154
	253	Hydrazine	8,510						7,388	1,121	
Ceramic Sensor	283	Hydrogen fluoride and its water-soluble salts	2,897						2,659	238	
	304	Boron and its compounds	1,272					1		502	770
Total			706,211	130,402	182	0	10	150	88,382	200,932	286,154

The NGK Spark Plug Group regularly implements cleaning activities around the places of our business. We continue to participate in the cleanup activity that the region sponsors.

Cleaning Activities around our Business Sites

Name of factories and companies	Cleaning events
Head Office/Factory	2 times (total 58 people)
Komaki Factory	4 times (total 188 people)
Miyanojo Factory	3 times (total 95 people)
Ise Factory	2 times (total 41 people)
NTK Ceramic	9 times (total 99 people)
Nansei Ceramic	4 times (total 46 people)
Kamioka Ceramic	2 times (total 56 people)
Nittoku Seisakusho	10 times (total 102 people)
Nichiwa Kiki	2 times (total 51 people)
Tono Ceramic	12 times (total 97 people)
Ceramic Sensor	4 times (total 46 people)
Tokai Taima Kogu	2 times (total 12 people)

Cleaning Activities Held by the Local Residents

Name of factories and companies	Event name	Held by	Location
Komaki Factory, Ceramic Sensor	Mt. Komaki Beautification Activities	Komaki City	Mt. Komaki
Komaki Factory, Ceramic Sensor	Citizens Action Day for prevention of garbage scattered & Komaki Beautification Walk for COP10	Komaki City	Kinro Center area
Ise Factory	Miya River cleanup campaign	Miyariver Renaissance Assembly	Miya River
NTK Ceramic (Kani Factory)	Kani River mass cleanup	Kani City	Kani River
Nittoku Seisakusho (Oguchi Factory)	Oguchi Town cleanup activities	Oguchi Town	Oguchi Factory area