

# Chemicals Management Administration in Japan

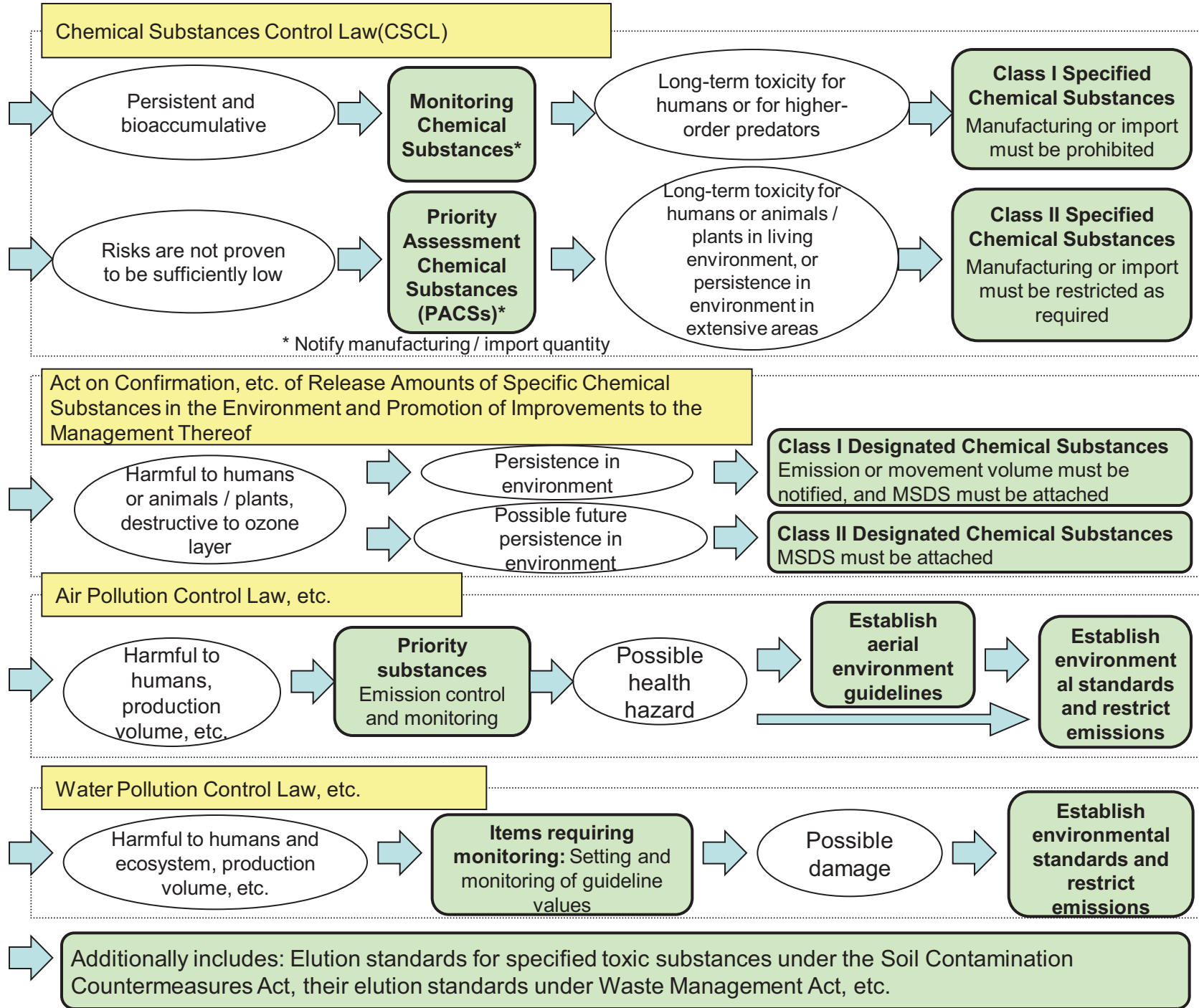
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# Chemical substances



# 1. Input Control of Chemicals

~ Chemical Substances Control Law (CSCL) ~

# CSCL

## Purpose

- To prevent environmental pollution caused by chemical substances that are persistent and pose a risk of impairing human health or interfering with the inhabitation and/or growth of flora and fauna.

## Main measures

- Prohibits in principle manufacturing or use of substances of persistence, bioaccumulation and long-term toxicity
- Restricts manufacturing or use of substances of persistence and long-term toxicity and requires them to be labeled
- Notifies the production volume of substances that could meet any of above
- Evaluates persistence, bioaccumulation, long-term toxicity, etc. of new chemical substances

# Restriction on Manufacturing, Import, etc. of Chemical Substances (1)

<Specified Chemical Substances: Two Classes>

## ○ **Class I Specified Chemical Substances**

- Persistent, bioaccumulative, and long-term toxicity to humans or higher-order predators
- Permission of manufacturing or import, and use of substances are restricted (virtually prohibited)
- Import of products designated in government ordinances is restricted
- Administrative orders for recall in designating substances or other cases
- Exceptional use in Essential Use (requires compliance with and labeling of technical standards)
- Substances covered: 28
  - Polychlorinated biphenyl
  - Polychlorinated naphthalene (limited to those containing three or more chlorine atoms)
  - Hexachlorobenzene
  - Aldrin
  - Dieldrin
  - Endrin
  - DDT
  - Chlordanes, etc.

(Values as of April 1, 2012)

# Restriction on Manufacturing, Import, etc. of Chemical Substances (2)

## ○ Class II Specified Chemical Substances

- Long-term toxic to humans or animals / plants in living environment
- Persistent to a remarkable extent in the environment of significantly extensive areas
- Notify planned quantity to be manufactured or imported, and actual quantity manufactured or imported
- Order changes in projected quantity to be manufactured or imported in case restriction on manufacturing or import is required
- Publish technical guidelines to prevent environmental pollution and provide recommendations as required
- Mandate labeling and comply with technical standards

### • Substances covered: 23

Trichloroethylene

Tetrachloroethylene

Carbon tetrachloride

20 organotin compound

(Values as of April 1, 2012)

# Restriction on Manufacturing, Import, etc. of Chemical Substances (3)

## ○ Monitoring Chemical Substances

- Persistent, bioaccumulative and unknown toxicity
- Notify actual quantity manufactured or imported, detailed applications, etc.
- Require to make effort for conveying information to business operators dealing in substances

### • Substances covered: 38

Mercuric oxide (II)

1-tert-butyl-3, 5-dimethyl-2, 4, 6-trinitrobenzene carbon tetrachloride

Cyclododecane-1, 5, 9-triene

Cyclododecane

1, 2, 5, 6, 9, 10-hexabromocyclododecane

1, 1-bis (tert-butyldioxy)-3, 3, 5-trimethylcyclohexane

Tetraphenyltin

1, 3, 5-tribromo-2-(2, 3-dibromo-2-methylpropoxy) benzene

O-(2, 4-dichlorophenyl) = O-ethyl = phenylphosphonothioate

1, 3, 5-tri-tert-butylbenzene

Polybromobiphenyl (Br = 2 ~ 5)

Dipenten dimer or hydrogen additives

2-isopropylbicyclo [4.4.0] decane or 3-isopropylbicyclo [4.4.0] decane

2,6-di-tert-butyl-4-phenylphenol

Diisopropylnaphthalene

Triisopropylnaphthalene, etc.

(Values as of April 1, 2012)



# Restriction on Manufacturing, Import, etc. of Chemical Substances (4)

## ○ Priority Assessment Chemical Substances(PACSSs)

- It is not proven that substances do not clearly meet the requirements for low-accumulation and hazardous properties of Class II Specified Chemical Substances (long-term toxicity to humans or animals / plants in living environment)
- Persistent to a certain extent in the environment
- Notify quantity manufactured or imported, detailed applications, etc.
- Require to make effort for conveying information to business operators dealing in substances

## \* Type II and III Monitoring Chemical Substances have been abolished

- Designate 87 substances from former Types II and III Monitoring Chemical Substances

Carbon disulfide, hydrazine, n-hexan, 1,3-butadiene, etc.

- Designate 8 substances from General Chemical Substances

Hydrogen peroxide, methanol, diethanolamine, peracetic acid  
acetic anhydride, acrylic acid, sodium chloroacetate and cyclohexane

(Values as of April 1, 2012)

# Business Operator's Duty at CSCL (1)

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- New Chemical Substances
  - Notify prior to manufacturing / import
  
- General Chemical Substances
  - Notify actual quantity manufactured or imported, applications, etc.
  - Report hazardousness information newly obtained
  
- Priority Assessment Chemical Substances (PACSs)
  - Notify quantity manufactured or imported, detailed applications, etc.
  - Provide hazardousness information requested
  - Report handling status requested
  - Implement study of hazardous properties based on instructions study of hazardous properties
  - Obligate to make effort on information transmission to handling business operators
  - Report the hazardousness information newly obtained

# Business Operator's Duty at CSCL (2)

## ○ Class I Specified Chemical Substances

- Approve of manufacturing / import and usage restriction
- Import restriction for government-decreed products
- Correspond against recovery action order at substance designation
- Obligate of technical standard adaptation / indication at exceptional usage

## ○ Class II Specified Chemical Substances

- Notify manufacturing / import plan and quantity of actual experience
- Correspond against change order for the planned quantities of manufacturing / import
- Obligate technical guideline adaptation / indication
- Report handling status requested
- Report the hazardousness information newly obtained

## ○ Monitoring Chemical Substances

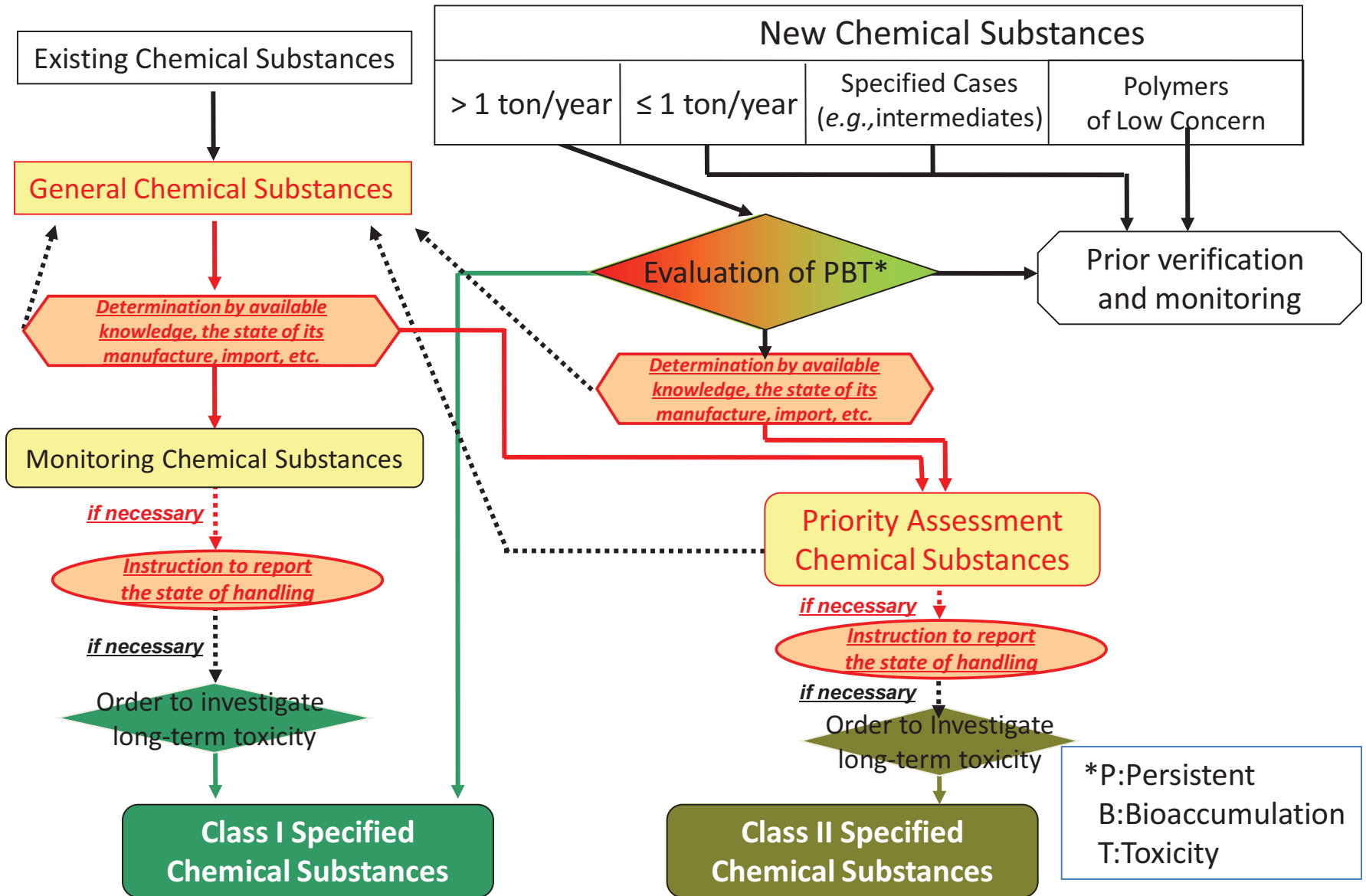
- Notify quantity manufactured / actually imported experience and applications, etc.
- Report handling status requested
- Implement study of hazardous properties Based on instructions study of hazardous properties
- Obligate to make effort on information transmission to handling business operators
- Report the hazardousness information newly obtained

# Correspondence to Applications by Foreign Countries

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- **Article-7: (Evaluation on new chemical substances regarding foreign manufacturers)**
  - A person who intends to manufacture in a foreign state a new chemical substance to be exported to Japan or a person who intends to export a new chemical substance to Japan may, in advance, notify the three related ministries of the name of said new chemical substance and other required information.
  - Enforcement due date of determination notice to notified person shall be within four months after notification acceptance. (Normally within three months)

# Flow of CSCL



Obligatory reporting of hazard information obtained by business

# Step-wise Risk Assessment

## CSCL Chemical Inventory

Existing Chemicals + Evaluated New Chemicals

Notified Chemical Substances

## Screening Assessment

Designation of PACSs

Risk Assessment (1st)

Risk Assessment (2nd)

Class II Specified Chemical Substances

## Industry's role

- Notify annual quantity of manufacture etc. (mandatory)
- Submit hazard information (voluntary)
- Notify annual quantity of manufacture etc. with detailed usage (mandatory)
- Submit requested hazard information
- Report requested for handling situations
- Conduct administratively instructed hazardous properties study (long-term toxicity tests) (mandatory upon instruction)
- Notify planned annual quantity of manufacture etc.
- Technical guidance for use etc.

# Designation History of Priority Assessment Chemical Substances

## ○ April 2011

88 substances were designated as PACSs

Screening assessment was made for former Type II and III Monitoring Chemical Substances\*. 75 former Type II Monitoring Chemical Substances and 20 former Type III Monitoring Chemical Substances were designated as PACSs.

## ○ March 2012

1 substance was deleted from PACSs and 8 substances were additionally designated as PACSs

⇒ Total number of PACSs: 95

Preliminary screening assessment was made for General Chemical Substances.

6 substances that could cause human health effects and 4 that could cause ecological effects were designated as PACSs.

## ○ July 2012

46 substances were determined to be equivalent to Priority Assessment Chemical Substances. Additional substances are to be designated by the end of this year after reviewing their names and other information

Screening assessment was made for General Chemical Substances.

31 substances that could cause human health risks and 21 that could cause ecological effects were determined to be equivalent to PACSs.

**Further screening assessment is to be conducted in the future to additionally designate PACSs**

\* Former Type II Monitoring Chemical Substances: Suspected to have long-term hazardousness to human body  
Former Type III Monitoring Chemical Substances: Suspected to have hazardousness to animals and plants  
Both cases have been repealed by the law revision in 2009.

# Progress of Risk Assessment

- The methods of screening assessment and of risk assessment were organized in January 2011 and January 2012, respectively.
- The screening assessment was made for former Type II and III Monitoring Substances, and 87 substances were **designated as PACSs in April 2011** when the revised CSCL was fully put into effect.
- **The first-step Risk Assessment (1st) Assessment I was conducted for 86 substances** out of these 87 substances **with the national total quantity manufactured or imported of 10 tons or more.**
- \* The screening assessment was made in advance for some General Chemical Substances, and 8 substances were additionally designated as PACSs in March 2012. These substances must be notified for their quantity etc. manufactured or imported as PACSs by the end of June 2012 although no information necessary for exposure assessment is presently available, and are therefore not subject to Assessment I announced in July 2012.



# Overview of Actions Based on Risk Assessment (1st) Assessment I Results

PACs (designated on April 1, 2011)		87 substances
Substances subject to Risk Assessment (1st) Assessment I		86 substances
	Substances to be subject to Risk Assessment (1st) Assessment II from FY2012	18 substances
	Substances subject to Risk Assessment (1st) Assessment for a while to review their priority	63 substances
	Substances subject to monitoring for their quantity for a while (estimated national emissions of 1 ton or less)	5 substances
	Substances subject to monitoring for their quantity for a while (national total quantity manufactured or imported of 10 tons or less)	1 substance

- 1 Quantity manufactured or imported... Actual quantity in FY2010, announced on March 30, 2012
- 2 Screening Assessment... Assessment to identify chemical substances at possible risk and designate PACSs
- 3 Risk Assessment... Assessment to determine whether environmental pollution by chemical substances could cause damage to human health or to inhabitation or growth of animals / plants in living environment
- 4 Quantity monitoring... Cancels designation as PACSs under Article 11 of CSCL when substances are confirmed to be equivalent to those with the national total quantity manufactured or imported of 10 tons or less in the last three or more years, those with the estimated national emissions of 1 ton or less, or those not required to be notified.

# Consideration of Risk Assessment Method

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[Future plans]

Basically, Assessment II will be conducted in FY2012 to determine the necessity to designate Class II Specified Chemical Substances, etc.

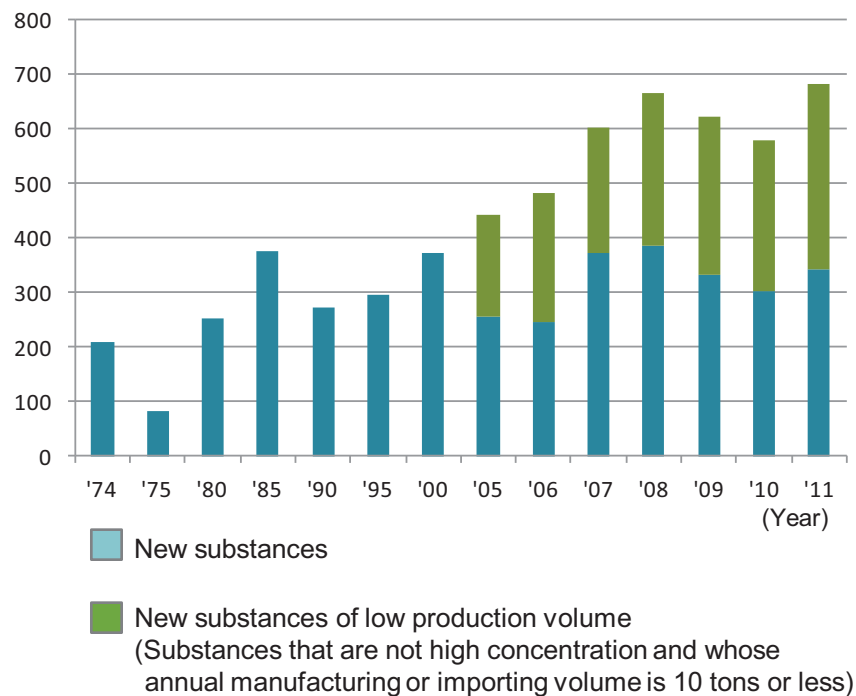
In case information required for judgment is insufficient, a report on handling etc. will be requested to business operators to obtain information necessary for risk assessment. Risk Assessment (1st) Assessment III will be conducted after FY2013.

# Implementation of CSCL (1) (New Chemical Substances)

- The number of notifications of new chemical substances has continued to increase, accounting for 684 in 2011.
- In 2011, notifications on 28,519 small quantity of new chemical substances, which also increases by 2,704 over the previous year.

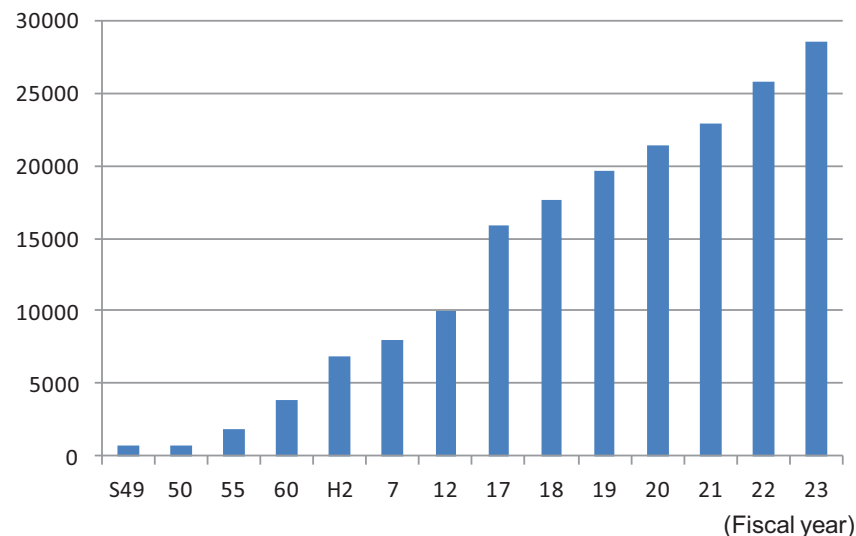
< Number of notifications of new chemical substances >

(No. of notifications)



< Number of notifications on small quantity of new chemical substances\* >

(No. of notifications)



\* Including notifications on the same substances.

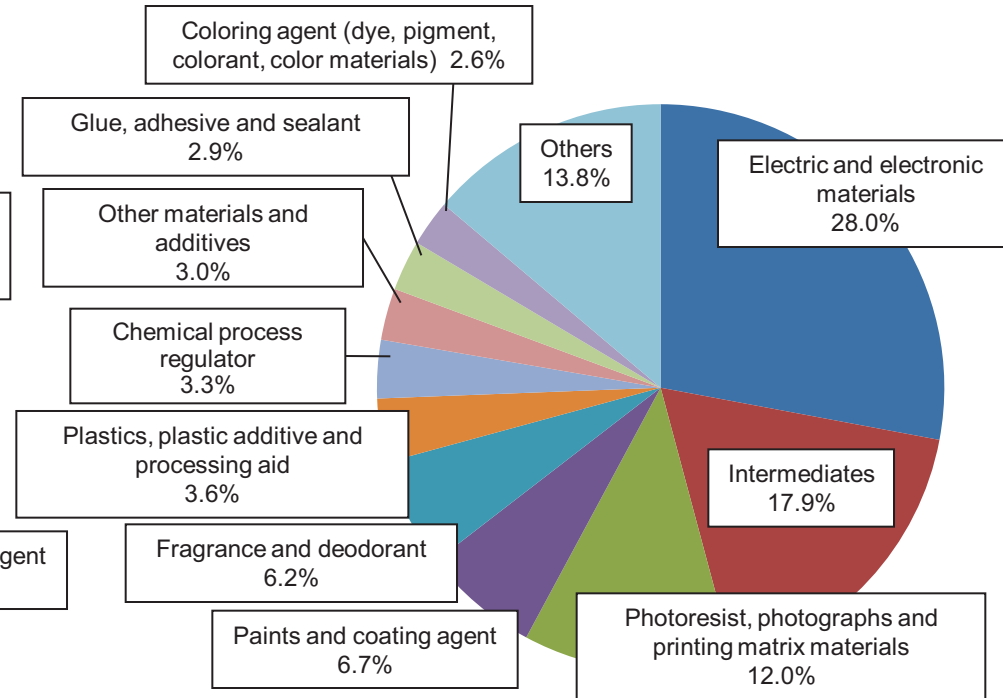
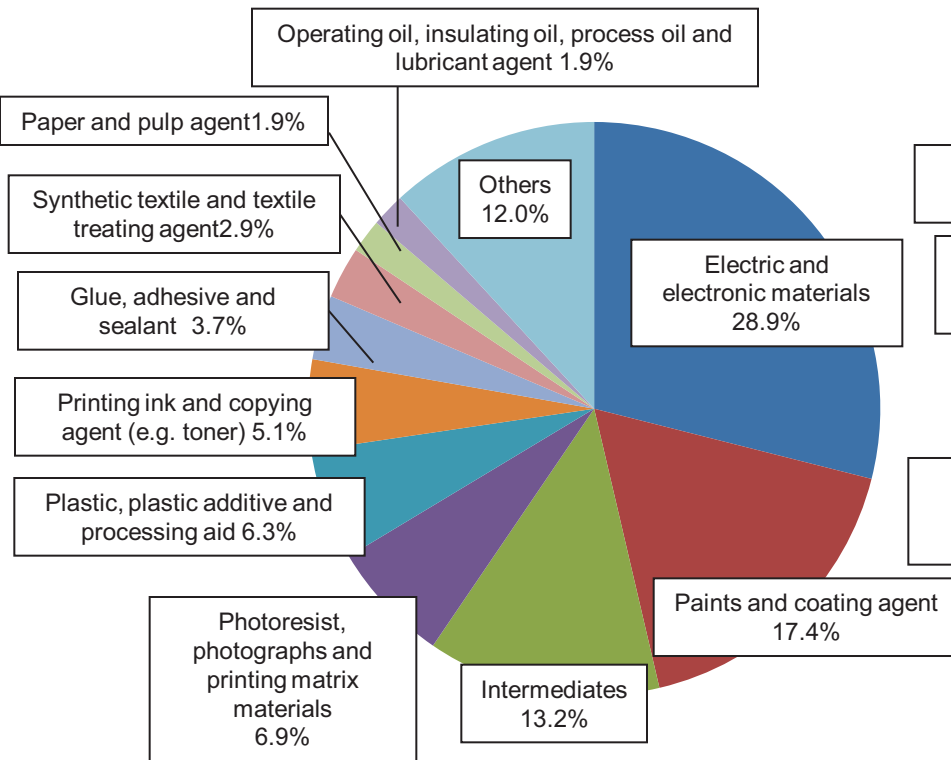
Source: Materials by the Chemical Substances Council, Ministry of Economy, Trade and Industry

# Implementation of CSCL (1) (Preliminary New Chemical Substances)

○ The following shows the classification by notifications of new chemical substances and small quantity of new chemical substances. In both cases, the notifications show that the usage for electric and electronic materials accounts for the greatest percentage.

<Main applications of new chemical substances (FY2011)>

<Main applications of small quantity of new chemical substances (FY2011)>

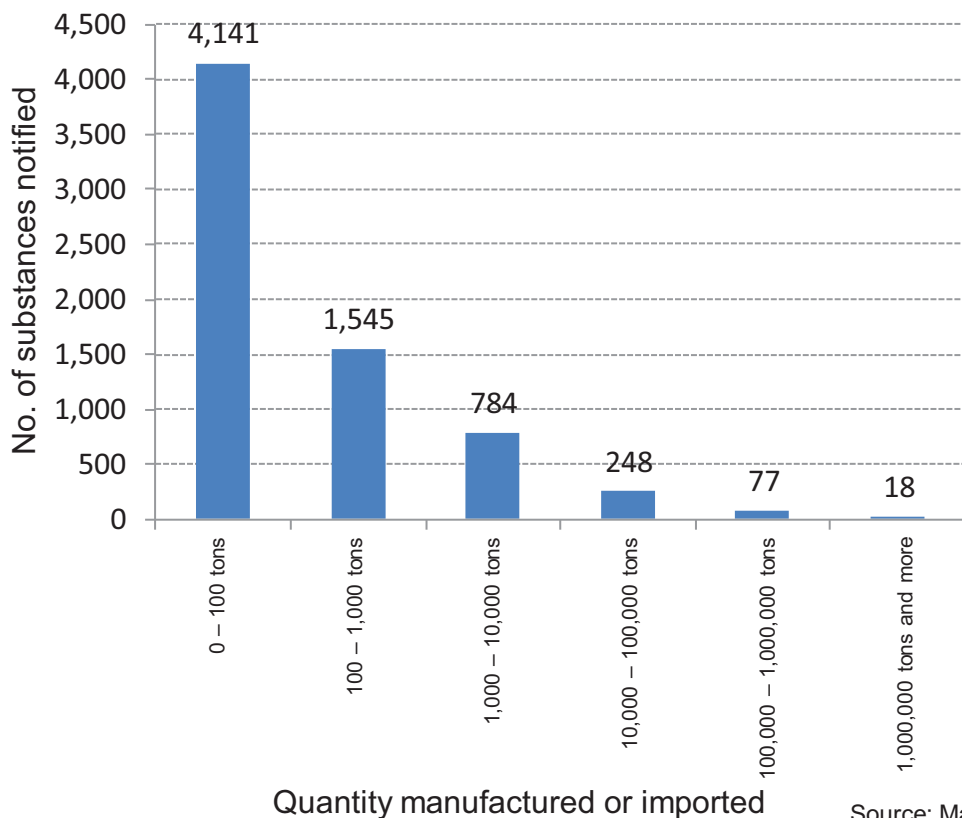


Source: Materials by the Chemical Substances Council, Ministry of Economy, Trade and Industry

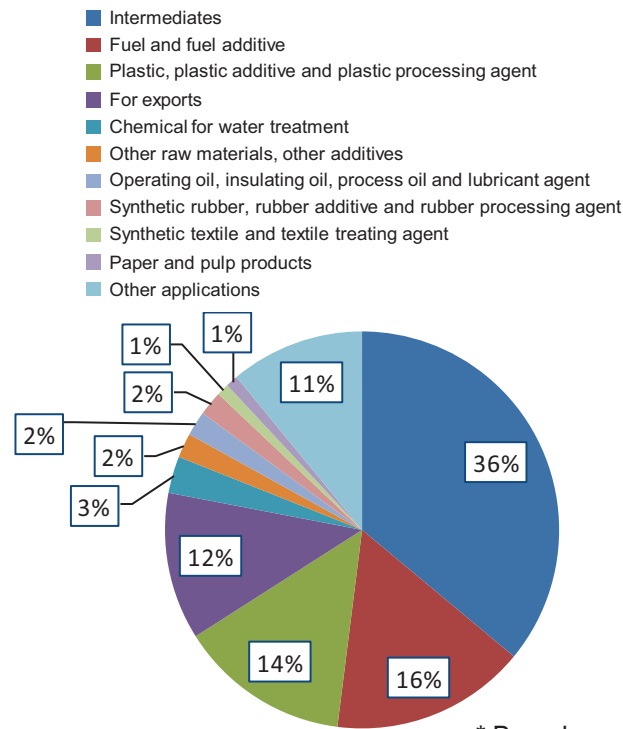
# Implementation of CSCL (2) (Measures for Existing Chemical Substances after Placing on the Market)

- The system that a person who intends to manufacture or import 1 ton or more existing chemical substances annually to notify the manufactured or imported quantity has been introduced since the FY2010 record.
- The number of substances notified so far is:
  - FY2011 (FY2010 record, actual value): 31,301 notifications (1,422 companies), 6,813 substances
  - FY2012 (FY2011 record, tentative estimation): 30,354 notifications (1,416 companies) (\*under final estimation)
- The record of these notifications is counted and announced to make use of the record for estimating exposure classes.

<Quantity distribution of substances notified (FY2010 record)>



<Classification of applications (FY2010 record)>



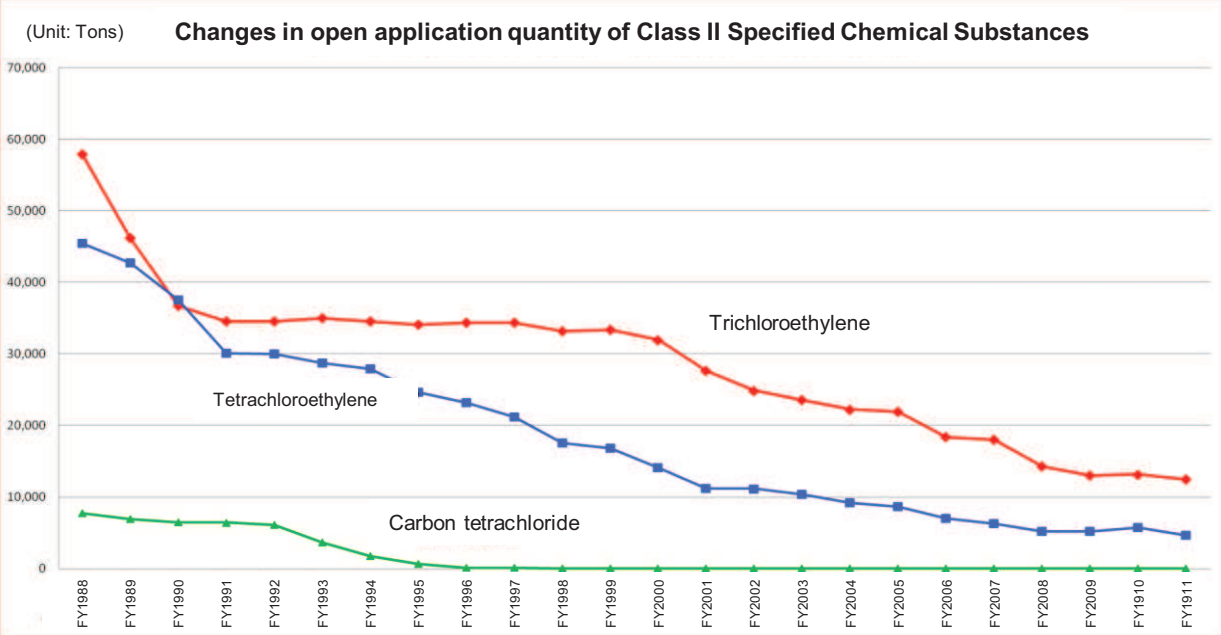
\* Based on shipment quantity

# Implementation of CSCL (3) (Control Measures Appropriate for Properties, etc. of Chemical Substances)

○ The planned quantity to be manufactured or imported must be notified for Class II Specified Chemical Substances. The Class II Specified Chemical Substances currently manufactured or imported include trichloroethylene, tetrachloroethylene and carbon tetrachloride, of which the open application quantity tends to decrease.

Changes in open application quantity of Class II Specified Chemical Substances

Fiscal year	(Unit: Tons)		
	Trichloroethylene	Tetrachloroethylene	Carbon tetrachloride
FY1988	57,922	45,483	7,736
FY1989	46,201	42,760	6,904
FY1990	36,762	37,554	6,492
FY1991	34,546	30,059	6,420
FY1992	34,546	30,009	6,127
FY1993	35,002	28,727	3,681
FY1994	34,541	27,892	1,747
FY1995	34,084	24,648	658
FY1996	34,396	23,159	89
FY1997	34,394	21,200	70
FY1998	33,179	17,585	37
FY1999	33,340	16,787	44
FY2000	31,952	14,089	27
FY2001	27,634	11,153	37
FY2002	24,863	11,148	29
FY2003	23,537	10,397	22
FY2004	22,233	9,191	22
FY2005	21,889	8,683	30
FY2006	18,351	7,013	27
FY2007	18,020	6,270	40
FY2008	14,284	5,198	20
FY2009	12,971	5,200	16
FY2010	13,142	5,703	17
FY2011	12,437	4,618	18



- (\* Class II Specified Chemical Substances
- Long-term toxicity to people or animals / plants in living environment.
  - Risk of people or animals / plants in living environment because the substantial amount of the substances is expected to remain to a certain extent in the remarkably extensive regional environment.
  - No. of substances specified: 23
  - Need to notify quantity manufactured or imported (planned and record values), applications, etc., order to change planned quantity as required, need to provide indications for products designated by government ordinances, etc.

# Information Collection / Sending Program for Existing Chemicals Safeness under the Cooperation between the Public and Private Sectors (Japan Challenge Program)

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## ○ Overview

- Aiming the acceleration of safeness information collection of existing chemicals and started in June 2009.

## ○ Registration Status of Sponsors

- 109 companies and 3 entities participated voluntarily.
- 91 substances from priority information collection target list (97 substances including outside of list) were sponsor registered.
- 17 categories were formed and information was collected.

## ○ Progress Situation

- Among 97 substances sponsor registered, the safeness information collection plan was submitted with 72 substances.
- The final Report was submitted with 22 substances.
- Other sponsors are under work for the submission in 2012.

## ○ Future

- The program will be completed by the end of FY2012.
- Will be shifted to screening / risk evaluations at framework of CSCL

## 2. Promotion of Voluntary Management of Chemicals ~ PRTR System ~



# PRTR System

- PRTR (Pollutant Release and Transfer Register) System
  - : Registration / Announcement systems of hazardous chemicals discharged amount to environment and migration amount contained in waste material.
- It takes much time for the determination of threshold (standard value) and risk evaluation.
  - Effectively reduce the discharge of [Gray Substance]
  - Voluntary management by business operators, information disclosure to nations and utilization by the public administration
- Preceded by U.S.A and Netherlands (Framework and main purpose are different depending on countries) → In Japan, Legislated in 1999. (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof): (Co-Jurisdiction by the MOE and METI)

# PRTR System (continued)

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## ○ PRTR System in Japan

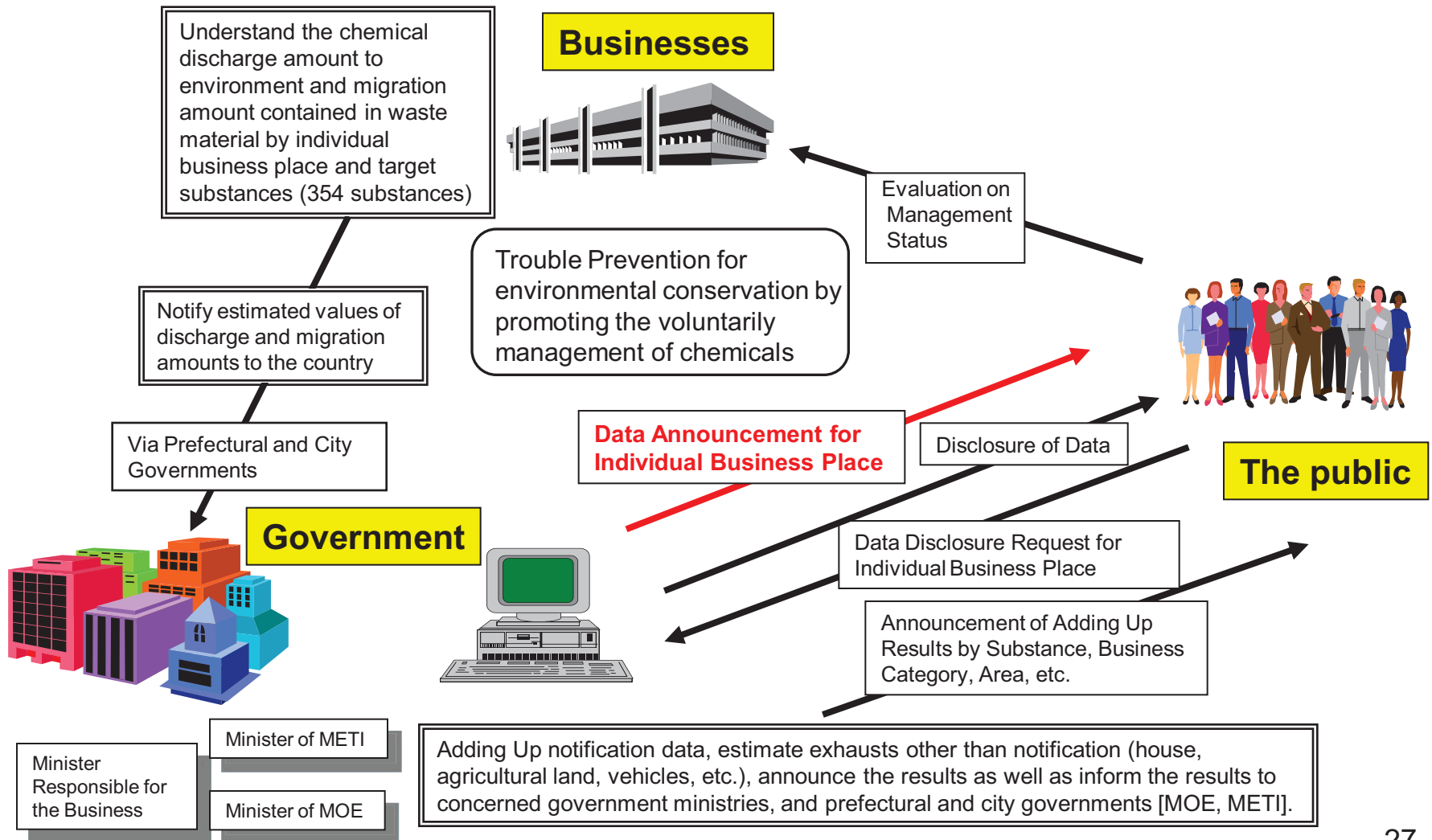
- Purpose: Promoting the voluntarily management improvement by business operators

### Trouble Prevention for Environmental Conservation

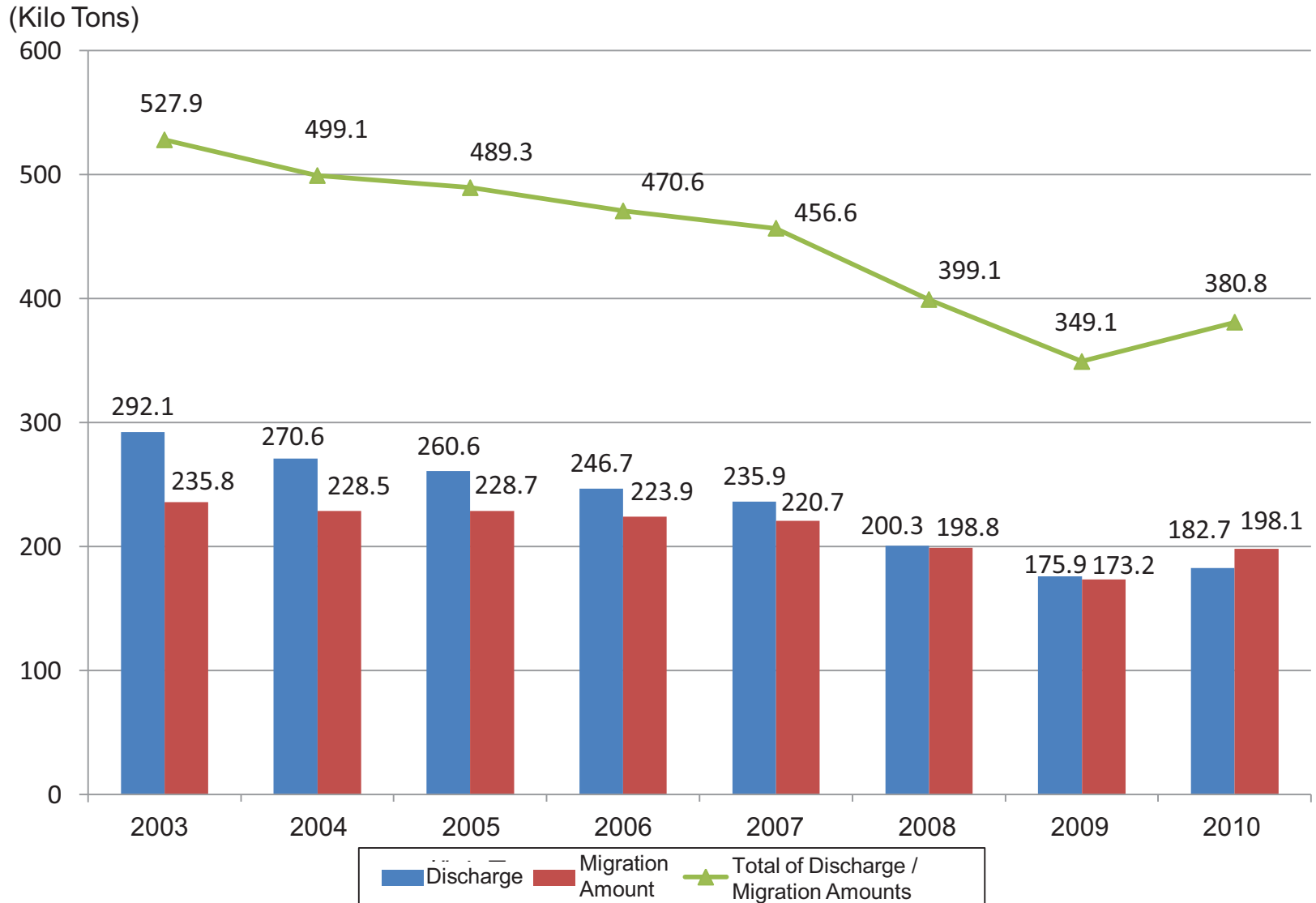
- Target Chemicals: 354 substances → 462 substances (started since FY2010)
- Target Business Operators: Handling Business Operators (Defined by business category / size)
  
- Notification of discharge amount / migration amount by the target business operators
- Estimation of discharge amount from other exhaust sources (small size business place, non-target business category, family and mobile object) by the country
  - Adding Up and Announcement. Individual notification data has been announced since this year

## ○ Delivery system for MSDS (Material Safety Data Sheet) is also incorporated.

# Institution of PRTR System



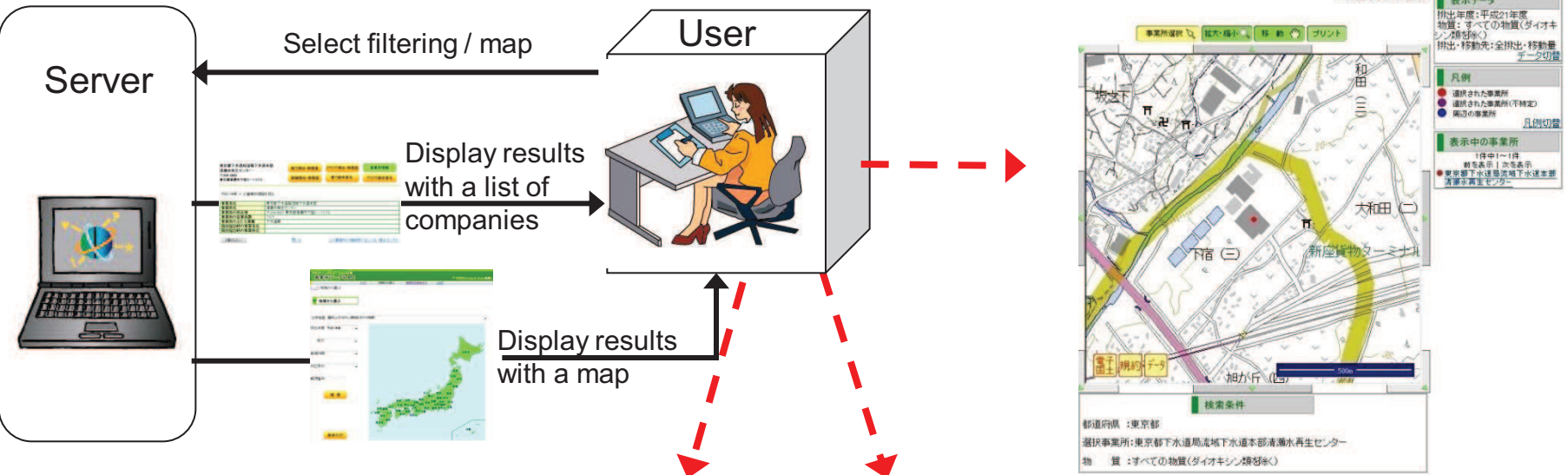
# Trend of Notified Discharge Amount / Migration Amount, FY2003 ~ 2010



# Image of the System to Display PRTR Data on Maps

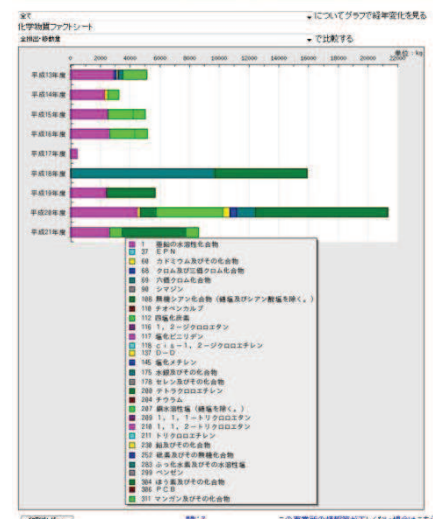
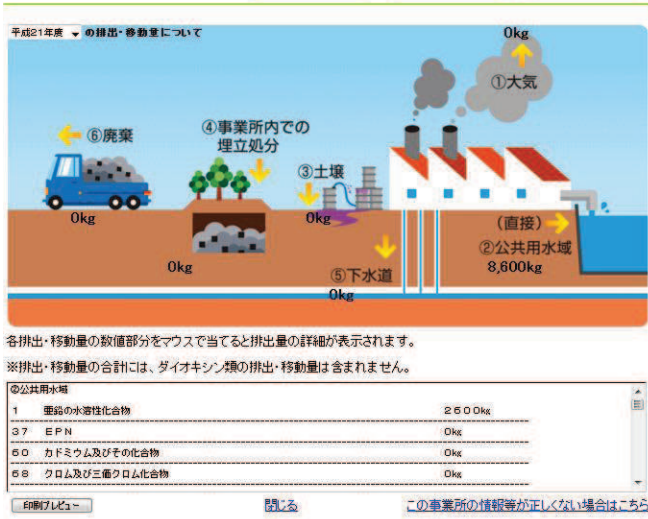
How to publish data

Display search results on map



Emissions and movement of a fiscal year

Change in emissions and movement over the years



# Purpose of PRTR and Data Utilization Examples

Purpose of PRTR	Utilization Examples of PRTR Data (Future utilization schedule included)
[1] Basic Data for Environmental Conservation	<ul style="list-style-type: none"> <li>○ Let the PRTR Discharge Amount Data to be the benchmark toward undertaking the promotion of chemical sector</li> <li>○ Use as basic data when reviewing various political measures such as system for industrial waste subject to special control, etc.</li> </ul>
[2] Priority Decision for Chemicals Countermeasure by Administration	<ul style="list-style-type: none"> <li>○ Used for the environment risk evaluation of chemicals</li> <li>○ Used for the selection of target substance / target place for environment monitoring</li> <li>○ Used for the risk evaluation of monitoring chemicals based on CSCL</li> </ul>
[3] Promotion of voluntary management by business operators	<ul style="list-style-type: none"> <li>○ Provision of tools such as the estimation of environment concentration around business offices to business operators.</li> <li>○ Used as business operator instruction material at local public entities</li> </ul>
[4] Provision of information to nationals and enhancement of understanding regarding chemicals	<ul style="list-style-type: none"> <li>○ Announce the adding up results of data and post them on the web.</li> <li>○ Prepare map information on discharge amount and estimated atmospheric concentration and post them on the web.</li> <li>○ Prepare a guidebook for citizens and chemical fact sheet in which PRTR data is utilized.</li> </ul>
[5] Understanding of effect and progress status of environment countermeasure	<ul style="list-style-type: none"> <li>○ Understand the countermeasure situation regarding the reduction of priority undertaking substance of Air Pollution Control Act with monitoring data and PRTR data.</li> </ul>

# Major Additional Undertaking Examples for Chemical Management at Local Public Entities

	Local Gov. Regulations Enforcement YR	Notification of Discharge & Migration Amounts (No. of Substances other than law target)	Notification of Handling Amount (No. of Target Substances)	Notification of Plan Document, Management Target, etc.	Management Guideline for Business Operator	Risk Communication (*2)
Saitama	YR2002	-	601	○	○	○
Tokyo	YR2001	15	58	○	○	○
Kanagawa	YR2005	-	462	○	○	○
Aichi	YR2003	-	462	○	○	○
Osaka	YR1995 (Rev. 2009)	23+VOC	462+23+VOC	○	○	○
Sapporo	YR2003	-	65	○	○	○
Kawasaki	YR2000	α (*1)	64+α (*1)	○	○	○
Nagoya	YR2004	-	462	○	○	○

\*1: Substances for which city mayor recognized needs

\*2: Undertaking not based on regulations of local government shall also be written down.

### 3. Output Control of Chemicals

~ Air Pollution Control Law / Water Pollution Control Law ~



# Air Pollution Control Law (Purpose)

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## 1. Protect Public Health and Preserve Living Environment

- By controlling emissions of soot, smoke and particulate from the business activities of factories and business establishments
- By controlling emissions of particulate while buildings are being demolished
- By promoting various measures concerning hazardous air pollutants
- and, By setting maximum permissible limits for automobile exhaust gases, etc.

## 2. Help Victims of Air Pollution Related Health Damage

- By providing liability regime health damages caused by air pollution from business activities

# Air Pollution Control Law (Overview)

Substance	Substance (Details)	Facility	Countermeasure Required
Smoke	<ul style="list-style-type: none"> <li>- SOx</li> <li>- Smoke</li> <li>- Hazardous Substance (NOx, etc.)</li> </ul>	Soot and Smoke Emitting Facility	Emission Standard, Order for Improvement, etc.
	Specified Smoke (SOx, NOx)	Specified Factory	Total Mass Emission Control Standards, Order for Improvement, etc.
Volatile Organic Compound (VOC)	Toluene, Xylene, Ethyl Acetate, etc. (about 200 substances)	Volatile Organic Compound Emitting Facility	Emission Standard, Order for Improvement, etc.
Particulate	General Particulate	General Particulate Emitting Facility	Standard for Structure, Usage and Management, Order for Standard Compliance, etc.
	Designated Particulate (Asbestos)	Designated Particulate Emitting Facility	Site Border Standard, Order for Improvement, etc.
		Designated Particulate Discharge Work	Working Standard, Order for Working Standard Compliance, etc.
Hazardous Air Pollutants	Specified Substance: Benzene, Trichloroethylene, Tetrachloroethylene Substances Requiring Priority Action: Refer to the attached Table-1		Suppression Standard for Specific Substance, Warning, etc.
Exhaust Gases from Motor Vehicles		Vehicle	Permissible Limits, etc.

# Table-1: Substances Requiring Priority Action (23 substances)

Acrylonitrile	Tetrachloroethylene
Acetaldehyde	Trichloroethylene
Vinyl Chloride Monomer (Alias Name: Chloroethene, Vinyl Chloride)	Toluene
Methyl chloride (Alias Name: Chloromethane)	Nickel Compounds
Chromium and Trivalent Chromium Compounds	Arsenic and its Compounds
Hexavalent Chromium Compounds	1, 3-Butadiene
Chloroform	Beryllium and its Compounds
OXIRANE (Alias Name: Ethylene Oxide)	Benzene
1, 2-Dichloroethane	Benzo[a]Pyrene
Dichloromethane (Alias Name: Methylene Chloride)	Formaldehyde
Mercury and its Compounds	Manganese and its Compounds
Dioxins	

# Reduction Countermeasure for Volatile Organic Compounds

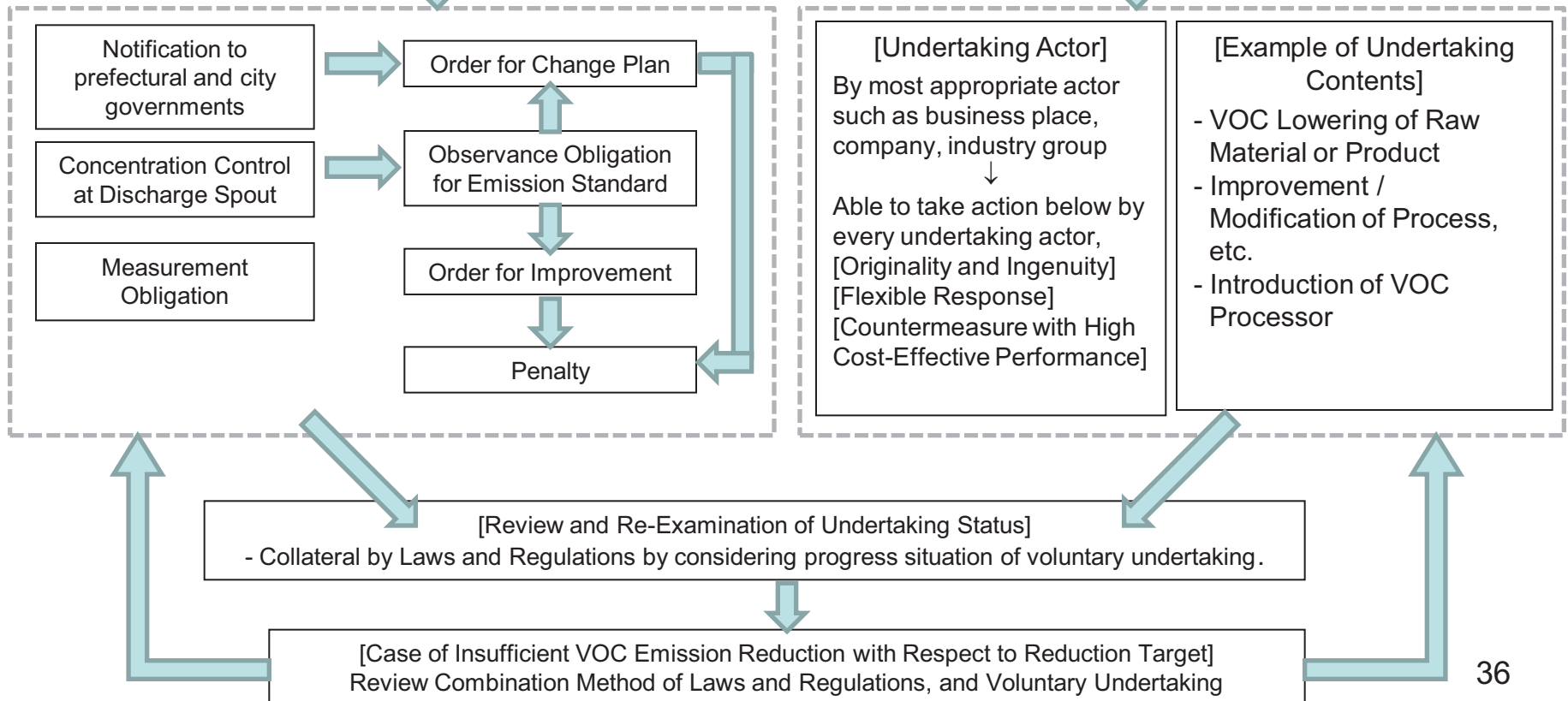
## Emission Source of Volatile Organic Compounds

[Control Subjects]

6 Facility Group Types / Large Size Facility

[Out of Control Subjects] Voluntary Undertaking

- Medium-Small Size Facility, out of Control Subjects
- Facility Type, out of Control Subjects
- Aperture Area, other than Discharge Spout
- VOC volatilization/scattering from somewhere other than facility such as outdoor painting work, etc.



# VOC Emitting Facility and Emission Standard to be Control Subjects

VOC Emitting Facility	Size Requirements	Emission Standard	
○ Painting Facility (Only limited to Spray Painting)	Air-Exhaust Performance of Exhauster: Greater than 100,000m <sup>3</sup> /hr.	Painting Facility for Vehicle Manufacturing (only limited to spray painting)	Existing: 700ppmC New: 400ppmC
		Other Painting Facility (only limited to spray painting)	700ppmC
○ Drying Facility for Painting (The facilities for Spray Painting and Electrophoretic Coating are excluded)	Air Blowing Performance of Air Blower: Greater than 10,000m <sup>3</sup> /hr.	Facility for timber/wood product (furniture included) manufacturing	1,000ppmC
		Others	600ppmC
○ Drying Facility for Adhesion (The facility for timber/wood product manufacturing and the facility listed below are excluded)	Air Blowing Performance of Air Blower: Greater than 15,000m <sup>3</sup> /hr.	1,400ppmC	
○ Drying Facility for the manufacturing of copper clad laminates, plastic laminate container packing, adhesive tape / adhesive sheet or paper liner.	Air Blowing Performance of Air Blower: Greater than 5,000m <sup>3</sup> /hr.	1,400ppmC	
○ Drying Facility for the gravure printing	Air Blowing Performance of Air Blower: Greater than 27,000m <sup>3</sup> /hr.	700ppmC	
○ Drying Facility for the rotary offset printing	Air Blowing Performance of Air Blower: Greater than 7,000m <sup>3</sup> /hr.	400ppmC	
○ Drying Facility for the chemical product manufacturing	Air Blowing Performance of Air Blower: Greater than 3,000m <sup>3</sup> /hr.	600ppmC	
○ Cleaning Facility for the industrial products (Drying facility for cleaning included)	Facility in which air contacting surface area with cleaning agent is greater than 5m <sup>2</sup>	400ppmC	
○ VOC Storage Tank in which vapor pressure of gasoline, crude oil, naphtha, etc. exceeds 20KPa at 37.8 °C temperature [Closed Type and Floating Roof Type (Interior Floating Roof Type included) excluded]	Facility greater than 1,000KL (However, the discharge standard is applied to the existing storage tank with capacity greater than 2,000KL)	60,000ppmC	

# Business Operator's Duty and Penalty for Air Pollution Control Law (1)

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- Article-6: Notification shall be submitted to the governor when installing soot and smoke emitting facility (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-8: Notification shall be submitted to the governor when changing the structure of soot and smoke emitting facility. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-13: Do NOT emit soot and smoke which does not comply with emission standards at the outlet of the facility. (Penal servitude not exceeding 6 months or fine not exceeding ¥500K)
- Article-13.2: Do NOT emit soot and smoke which fails to meet the total mass emission control standard from the outlets of all the soot and smoke emitting facility installed at specific factories, etc. (Penal servitude not exceeding 6 months or fine not exceeding ¥500K)
- Article-16: The volume and density of the soot and smoke shall be measured/recorded/saved. (Fine not exceeding ¥300K)
- Article 17: Emergent measures shall be taken and conditions of the accident shall be reported to the governor when accident occurred at soot and smoke emitting facility, etc.
- Article-17.2: Emission status of the soot and smoke into the air shall be figured out and necessary action to suppress the emission shall be taken.

## Business Operator's Duty and Penalty for Air Pollution Control Law (2)

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- Article-17.5: Notification shall be submitted to the governor when installing VOC Emitting Facility. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-17.7: Notification shall be submitted to the governor when changing the structure of VOC Emitting Facility. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-17.10: Emission Standard regarding VOC Emitting Facility shall be observed.
- Article-17.12: VOC concentration shall be measured and recorded.
- Article-17.14: Emission status of VOC into the air shall be figured out and necessary action to suppress the emission shall be taken.
- Article-18: Notification shall be submitted to the governor when installing General Particulate Emitting Facility. (Fine not exceeding ¥300K)  
Notification shall be submitted to the governor when changing the structure of General Particulate Emitting Facility. (Fine not exceeding ¥300K)

# Business Operator's Duty and Penalty for Air Pollution Control Law (3)

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- Article-18.3: Standard regarding General Particulate Emitting Facility shall be observed.
- Article-18.6: Notification shall be submitted to the governor when installing Designated Particulate Emitting Facility. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)  
Notification shall be submitted to the governor when changing the structure of Designated Particulate Emitting Facility. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-18.12: Designated particulate density shall be measured on the border line of the ground of the factory and recorded.
- Article-18.15: Notification shall be submitted to the governor when implementing Designated Particulate Emitting Work, etc.  
(Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-18.17: Working Standard regarding Designated Particulate Emitting Work shall be observed.
- Article-18.21: Emission status of the Hazardous Air Pollutant into air shall be figured out and necessary action to suppress emission shall be taken.
- Article-25: The business operator shall take the responsibility of making restitution when damaging human life or health due to the harmful substances from a plant, etc.

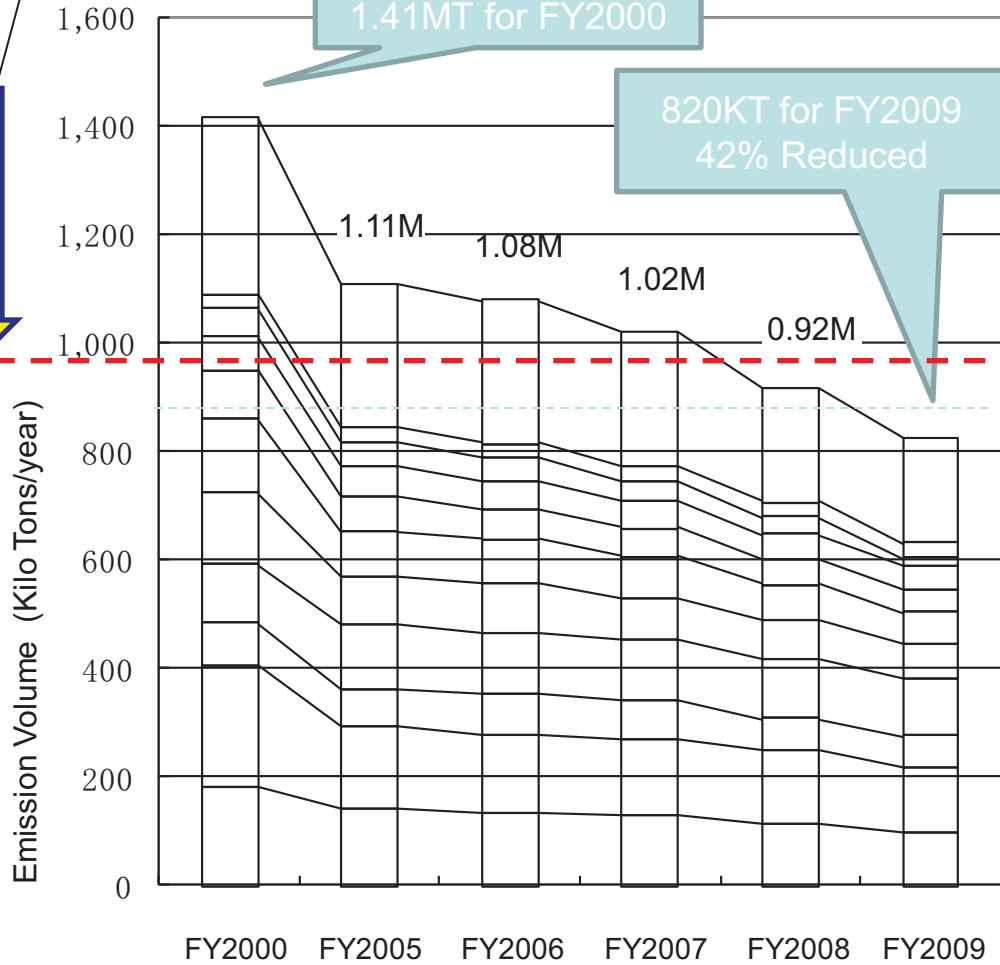


# Trend of Emission Volume for VOC

Target Value



Showing 30% Increase Over 2000, 990KT



- Business Categories other than already mentioned
- Drink, Tobacco and Feedstuff Manufacturing Businesses
- Laundry
- Petroleum / Coal Product Manufacturing Business
- Metal Product Manufacturing Business
- Chemical Industry
- ▨ Printing and Related Businesses
- ▨ Fuel Retailing Business
- ▨ Plastic Product Manufacturing Business
- Civil Engineering, Architectural and Paving Work Businesses
- Transport Equipment Manufacturing Business

- Most of emission volume reduction since 2000 until 2009 depends on the undertaking of VOC Emission Suppression.
- It is considered that the reason for sudden reduction of emission volume in 2008 from 2007 was brought by the result of voluntary undertaking by industrial world and the reduction of production activity due to Lehman's Fall in September 2008.

# Enforcement Status of Air Pollution Control Law (1)

## Trend of Number of VOC Emitting Facilities

Fiscal Year	Number of Facilities Notified			Number of Factories / Business Places where Notified Facilities are Installed
	Facilities in Total	Atmosphere (Note-1)	Electricity / Gas / Mine (Note-2)	
FY2006	3,741	3,739	2	1,189
FY2007	3,776	3,775	1	1,188
FY2008	3,781	3,779	2	1,188
FY2009	3,613	3,611	2	1,152
FY2010	3,552	3,548	4	1,131

(Note-1) VOC Emitting Facility Notified by Air Pollution Control Law

(Note-2) Electricity; VOC Emitting Facility Notified by Electricity Business Act: Gas; VOC Emitting Facility Notified by Gas Business Act: Mine; VOC Emitting Facility Notified by Mine Safety Act

# Enforcement Status of Air Pollution Control Law (2)

## Trend of Number of On-Site Inspection Implemented and of Business Places

Category	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010
Soot and Smoke Emitting Facility Installed Factory / Business Place	17,984	16,085	17,881	16,312	15,831	15,908
VOC Emitting Factory / Business Place	—	718	720	798	974	927
General Particulate Emitting Facility Installed Factory / Business Place	2,083	1,723	1,738	1,632	1,602	1,825
Designated Particulate Emitting Facility Installed Factory / Business Place	305	29	27	0	0	0
Designated Facility <sup>(Note)</sup> Installed Factory / Business Place	2	23	30	16	78	4
Designated Particulate Emitting Work	7,045	11,393	8,238	6,748	6,595	6,362
Total	27,419	29,971	28,634	25,506	25,080	25,026

(Note) The designated facility refers to the facility to emit designated substances (28 substances) such as ammonia used with chemical processing and action taken at accident is defined.

# Water Pollution Control Law (Purpose)

## 1. Protect Public Health and Preserve Living Environment

- By regulating effluent discharged by factories, etc.

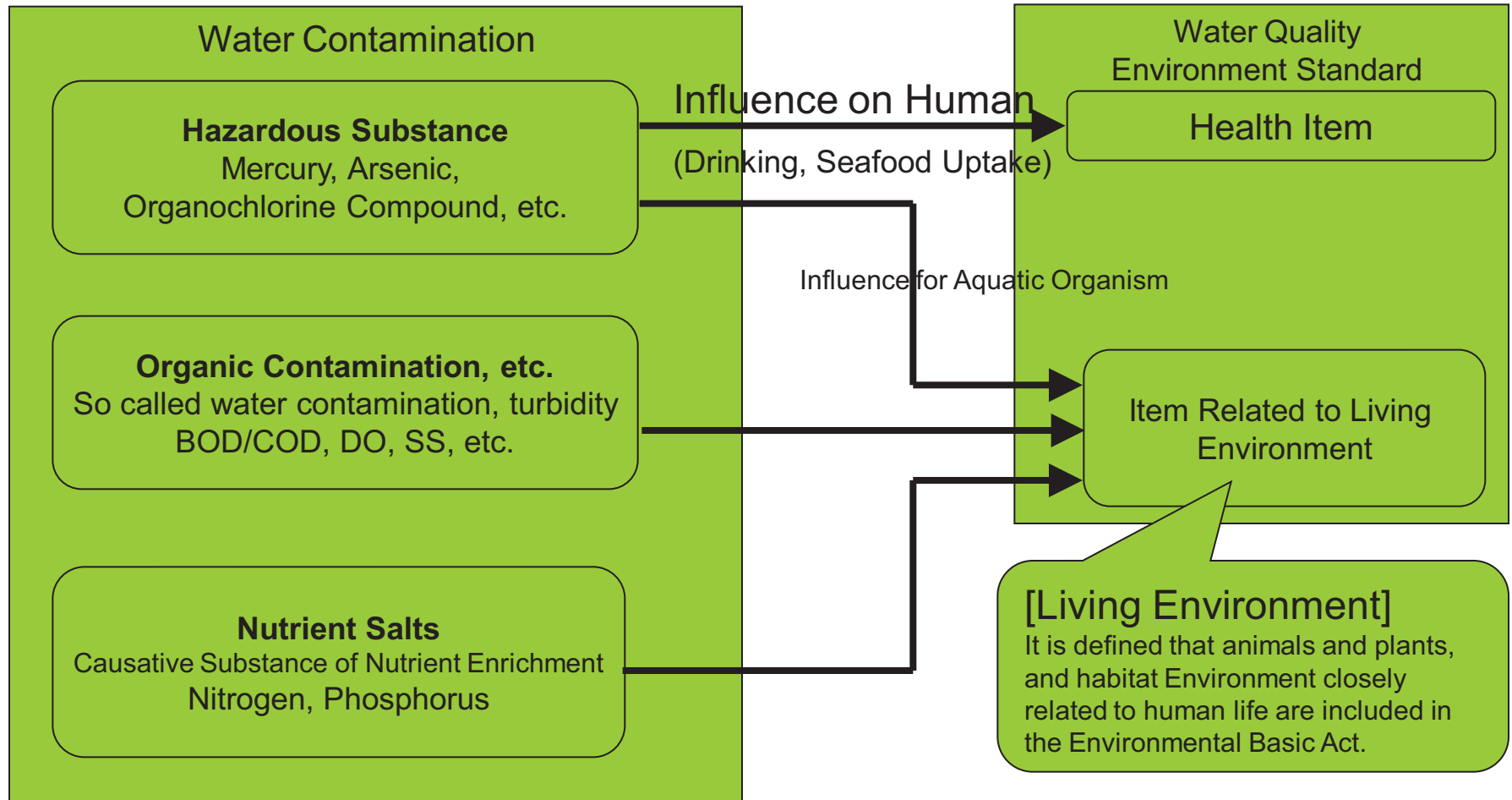
## 2. Help victims of water pollution related Health damage

- By providing liability regime health damages caused by water pollution from business activities.

### Contents to be Controlled

- Notification System for Specific Facility
- Common National effluent Control
- Constant Monitoring of Water Quality
- Total Amount Control against Enclosed Coastal Seas
- Living Drainage Countermeasure such as the designation of strategic regions for living drainage countermeasure, etc.

# Water Quality Environment Standard



## [Living Environment]

It is defined that animals and plants, and habitat Environment closely related to human life are included in the Environmental Basic Act.

## BOD / COD

Water area dysoxic environment is the most basic problem of Water contamination. Bad odor is generated when oxygen in the water is decreased. Troubles such as disrupting the habitat of Aquatic Organism may occur. For the reason, oxygen demand (OD) is utilized as the index of water quality contamination where oxygen consuming substance is measured as oxygen amount in addition to the direct dissolved oxygen (DO) amount. There are methods, BOD measuring by utilizing microbe and COD measuring by utilizing chemicals for the oxygen consuming amount, the former is used for river and the latter is used for lake, pond and marine area at the Environment Standard.

# Water Quality Environment Standard

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## [Environmental Standard Regarding Water Contamination]

1. Environmental Standard Regarding the Human Health Protection  
(Health Item: 27 items)
2. Environmental Standard Regarding the Life Environment Conservation  
(Life Environment Item: 10 items)

**\* Concrete items and Standard value are shown on the next slide.**

## [Environmental Standard Regarding Water Contamination by Dioxin Group]

Water Quality Standard : Less than 1pg-TEQ/L, annual average value

Sediment Standard : Less than 150pg-TEQ/g

# Environmental Standard Regarding Water Contamination.etc.

Human Health

Kinds of harmful substances	Standard	Kinds of harmful substances	Standard
Cadmium	$\leq 0.003\text{mg/L}$	1,1,2-trichloroethane	$\leq 0.006\text{mg/L}$
Cyanogen	Not detected	Trichloroethylene	$\leq 0.03\text{mg/L}$
Lead	$\leq 0.01\text{mg/L}$	Tetrachloroethylene	$\leq 0.01\text{mg/L}$
Hexavalent chromium	$\leq 0.05\text{mg/L}$	1,3-dichloropropene	$\leq 0.002\text{mg/L}$
Arsenic	$\leq 0.01\text{mg/L}$	Thiram	$\leq 0.006\text{mg/L}$
Mercury	$\leq 0.0005\text{mg/L}$	Simazine	$\leq 0.003\text{mg/L}$
Alkyl mercury	Not detected	Thiobencarb	$\leq 0.02\text{mg/L}$
Polychlorinated biphenyl	Not detected	Benzene	$\leq 0.01\text{mg/L}$
Dichloromethane	$\leq 0.02\text{mg/L}$	Selenium	$\leq 0.01\text{mg/L}$
Carbon tetrachloride	$\leq 0.002\text{mg/L}$	Nitrate nitrogen and nitrite nitrogen	$\leq 10\text{mg/L}$
1,2-dichloroethane	$\leq 0.004\text{mg/L}$	Fluorine	$\leq 0.8\text{mg/L}$
1,1-dichloroethylene	$\leq 0.1\text{mg/L}$	Boron	$\leq 1\text{mg/L}$
cis-1,2-dichloroethylene	$\leq 0.04\text{mg/L}$	1,4-dioxane	$\leq 0.05\text{mg/L}$
1,1,1-trichloroethane	$\leq 1\text{mg/L}$		

Life Environment

Kinds of harmful substances	River	Lake	Sea
BOD	$\leq 1 - 10\text{mg/L}$	—	—
COD	—	$\leq 1 - 8\text{mg/L}$	$\leq 2 - 8\text{mg/L}$
pH	6.0 - 8.5	6.0 - 8.5	7.0 - 8.3
SS	$\leq 25 - 100\text{mg/L}$ .etc.	$\leq 1 - 15\text{mg/L}$ .etc.	—
DO	$2 - 7.5\text{mg/L} \leq$	$2 - 7.5\text{mg/L} \leq$	$2 - 7.5\text{mg/L} \leq$
Coliform group number	$\leq 50 - 5,000\text{MPN}/100\text{mL}$	$\leq 50 - 1,000\text{MPN}/100\text{mL}$	$\leq 1,000\text{MPN}/100\text{mL}$
Normal-hexane extracts	—	—	Not detected
Nitrogen	—	$\leq 0.1 - 1\text{mg/L}$	$\leq 0.2 - 1\text{mg/L}$
Phosphorus	—	$\leq 0.005 - 0.1\text{mg/L}$	$\leq 0.02 - 0.09\text{mg/L}$
Zinc	$\leq 0.03\text{mg/L}$	$\leq 0.03\text{mg/L}$	$\leq 0.01 - 0.02\text{mg/L}$

# Wastewater standards

Kinds of harmful substances	Tolerable limit
Hydrogen ion concentration (pH)	Other than sea area: 5.8 – 8.6 Sea area: 5.0 – 9.0.
Biochemical oxygen demand (BOD)	160 mg/L (Daily mean value: 120 mg/L)
Chemical oxygen demand (COD)	160 mg/L (Daily mean value: 120 mg/L)
Suspended solids (SS)	200 mg/L (Daily mean value: 150 mg/L)
Normal-hexane extracts content (mineral oils content)	5 mg/L
Normal-hexane extracts content (animal and plant fats content)	30 mg/L
Phenols content	5 mg/L
Copper content	3 mg/L
Zinc content	2 mg/L
Soluble iron content	10 mg/L
Soluble manganese content	10 mg/L
Chromium content	2 mg/L
Coliform group number	Daily mean value: 3,000/cm <sup>3</sup>
Nitrogen content	120 mg/L (Daily mean value: 60 mg/L)
Phosphorus content	16 mg/L (Daily mean value: 8 mg/L)

## Note

The effluent standard shown in this table is applicable to the effluent water discharged by a plant, factory, or business establishment which discharges 50m<sup>3</sup>/day or more of effluent water on daily average.

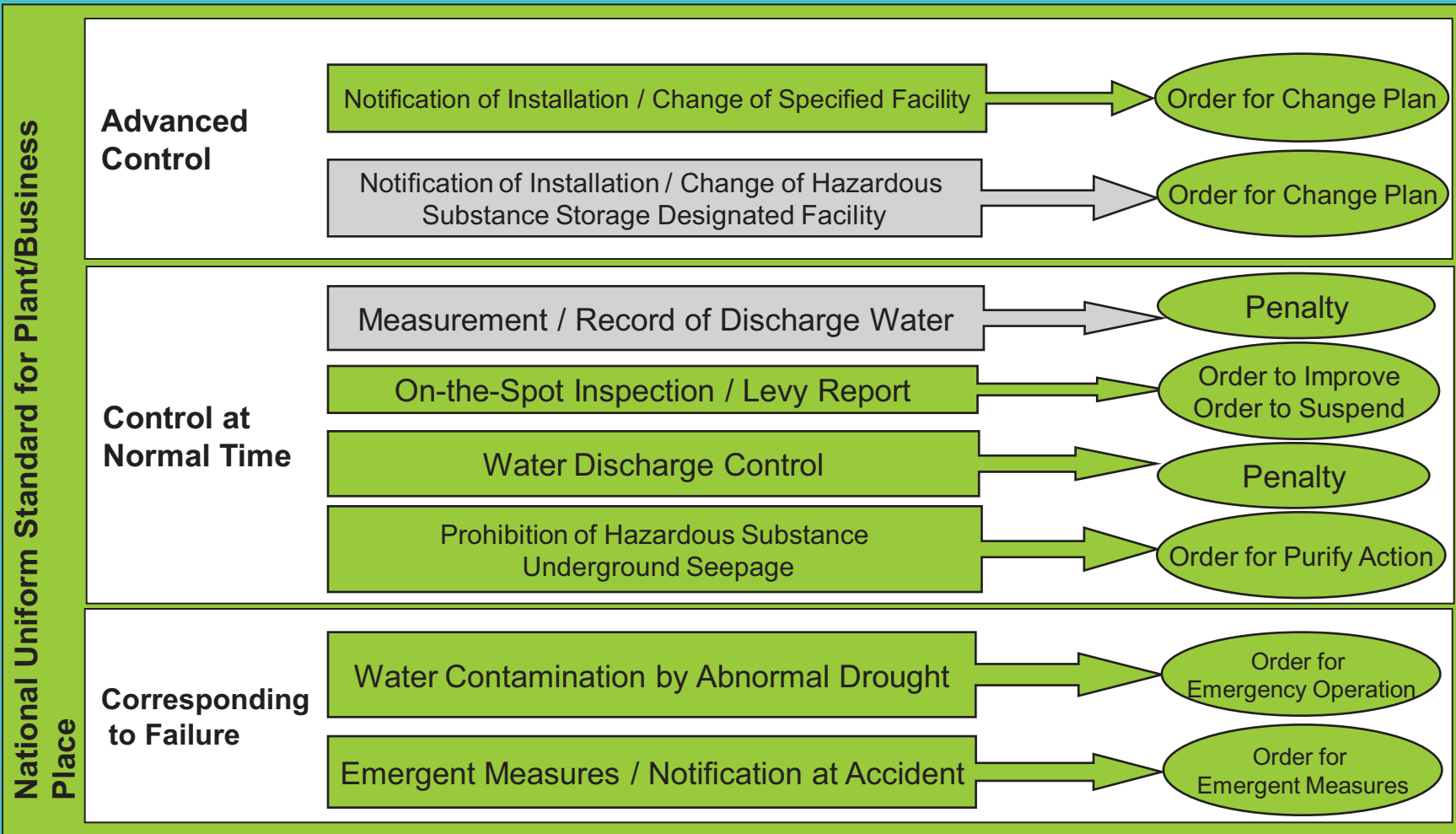
(\*) 0.4 times the ammonia nitrogen compound, and the total of nitrite nitrogen and nitrate nitrogen

Kinds of harmful substances	Tolerable limit
Cadmium and its compounds	0.1 mg/L
Cyanide compounds	1 mg/L
Organic compound (limited to parathion, methyl parathion, methyl demeton and EPN (ethyl p-nitrophenyl phenylphosphorothioate))	1 mg/L
Lead and its compounds	0.1 mg/L
Hexavalent chromium compounds	0.5 mg/L
Arsenics and its compounds	0.1 mg/L
Mercury and alkyl mercury, and other mercury compounds	0.005 mg/L
Alkyl mercury compounds	Not detected
Polychlorinated biphenyl	0.003 mg/L
Trichloroethylene	0.3 mg/L
Tetrachloroethylene	0.1 mg/L
Dichloromethane	0.2 mg/L
Carbon tetrachloride	0.02 mg/L
1,2-dichloroethane	0.04 mg/L
1,1-dichloroethylene	0.2 mg/L
cis-1,2-dichloroethylene	0.4 mg/L
1,1,1-trichloroethane	3 mg/L
1,1,2-trichloroethane	0.06 mg/L
1,3-dichloropropene	0.02 mg/L
Thiram	0.06 mg/L
Simazine	0.03 mg/L
Thiobencarb	0.2 mg/L
Benzene	0.1 mg/L
Selenium and its compounds	0.1 mg/L
Boron and its compounds	Other than sea area: 10 mg/L Sea area: 230 mg/L
Fluorine and its compounds	Other than sea area: 8 mg/L Sea area: 1 mg/L
Ammonia, ammonium compounds, nitrite compounds and nitrate compounds	(*) 100 mg/L
1,4-dioxane	0.5 mg/L



# Countermeasures for Water Environment Conservation

## Water Pollution Control Law (Unified Countermeasures)



### Water Quality Monitoring on Public Water Area

Measurement Plan by Prefectural and City Governments

Constant Monitoring / Announcement, etc.

# Business Operator's Duty and Penalty for Water Pollution Control Law (1)

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- Article-5: Notification shall be submitted to the governor when installing Specific Facility, etc. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-7: Notification shall be submitted to the governor when changing structure of Specific Facility, etc. (Penal servitude not exceeding 3 months or fine not exceeding ¥300K)
- Article-12: Do NOT discharge effluent which does not satisfy the Effluent Standards at the point of discharge from the Specified Factory. (Penal servitude not exceeding 6 months or fine not exceeding ¥500K)
- Article-12.2: A person who has set up a Specified Factory within a Specified Region shall observe the total pollutant load regulation standards shall be observed.
- Article-12.3: Do NOT impregnates the water of specific underground infiltration water.
- Article-12.4: Structural Standard related to the specific facility using harmful substances shall be observed.

## Business Operator's Duty and Penalty for Water Pollution Control Law (2)

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- Article-14: The pollution level of the said effluent or specified permeation water shall be measured / recorded / saved. (Fine not exceeding ¥300K)  
The pollutant load of the effluents in the specified region where Total Pollutant Load regulation Standards is applied shall be measured/recorded/saved. (Fine not exceeding ¥300K)
- Article-14.2: Emergent measures shall be taken and conditions of the accident shall be reported to the governor when accident occurred at specific workplace, etc.
- Article-14.3: Cooperation with the Order for Action regarding ground water quality purification shall be performed.  
(Penal servitude not exceeding 1 year or fine not exceeding ¥ 1M)
- Article-14.4: The situation of discharge into public water area or underground infiltration water shall be figured out and necessary action to prevent the water contamination shall be taken.
- Article-19: The business operator shall take the responsibility of making restitution when damaging human life or health due to the harmful substances in the polluted water or wastewater discharged from factories.

# Enforcement status of water pollution control law

		2010	2009	2008	2007	2006
No. of specified establishments		271,242	274,039	276,952	280,517	289,091
average effluent more than 50m <sup>3</sup> /day		33,964	34,271	34,807	35,506	36,139
Notification	Article 5 (Establishment of Specified facilities)	5,307	5,075	6,174	6,670	6,279
	Article 7 (Structure changes etc.)	3,539	3,530	3,841	3,986	3,963
	Article 8 (Order to change plans)	0	0	0	0	0
No of establishments inspected (Article 22.1)		41,260	42,367	43,509	47,410	46,764
inspection during night		588	581	575	686	768
Order for Improvement (Article 13)		16	26	23	27	37
Order to suspend operation (Article 13)		0	0	1	1	1
Order to purify groundwater (Article 14.3)		0	0	0	0	0
Number of administrative direction	in writing	2,880	2,964	2,623	2,968	2,877
	Oral	5,095	4,106	4,917	5,314	4,702
	Total	7,975	7,070	7,540	8,282	7,579
Contents of administrative direction	Installation or improvement of wastewater treatment facilities	2,206	2,506	2,515	2,731	2,347
	temporary suppression of effluent	28	14	20	29	26
	Others	6,010	4,943	5,346	5,849	5,380
	total	8,244	7,463	7,881	8,609	7,753
Violation of effluent standards (Article 31.1.1)		11	6	13	11	12
Violation of order for improvement (Article 30)		0	0	0	0	0
Violation of water pollution control law (others)		0	0	0	0	0
Measures to be taken in case of an accident		433	375	458	526	500

# Legal System concerning Water Environment Conservation

**Environmental Basic Law:** Establishment of Environment Standards

## **Water Pollution Control Law**

Notification System for Specific Facility, Common National Wastewater Control, Constant Monitoring of Water Quality, Total Amount Control against Enclosed Coastal Seas, Living Drainage Countermeasure such as the designation of strategic regions for living drainage countermeasure

## **Sewerage Law**

Sewage Service Total Plan by Watershed, Installation of Public Sewage/River-Basin Sewage/City Sewage System, Notification System for Specific Facility, Installation of Pretreatment Facility for Sewage System and Observation of Water Discharge Standard.

## **Waste Management and Public Cleansing Law**

Basic Policy, Waste Disposal Facility Improvement Project, Waste Disposal Plan, General Waste Disposal Plan, General Waste Management Service, Approval System for Industrial Waste Disposal Contractor, Approval System for Waste Import

## **Law relating to the Prevention of Marine Pollution and Maritime Disaster**

Disposal Control for Oil / Harmful Liquid Substance / Waste Material from Ship and Vessel, Confirmation System for Harmful Liquid Substance Exhaust, Approval System for Waste Disposal into the Sea, Seabed Disposal Control for Oil / Harmful Liquid Substance / Waste Material

## **Agricultural Chemicals Regulation Law**

Registration System for Agricultural Chemicals, Labeling Requirement for Agricultural Chemicals, Notification System for Seller, Usage Control for Agricultural Chemicals/Water Pollution Prone Agricultural Chemicals

## **Groundwater Preservation Countermeasures**

Continuous Monitoring on the Nature of Ground Water, Prohibition of hazardous substance infiltrating into underground, Purification on Contaminated Groundwater

## 4. Others: Pollution Control Manager System

At the time of the establishment of laws relating to pollution control such as the Water Pollution Control Law, etc., many factories were not sufficiently equipped with a pollution control system (human organization).

Therefore, they were obliged to install human organizations that possessed expertise about pollution control.

## 【Purpose】

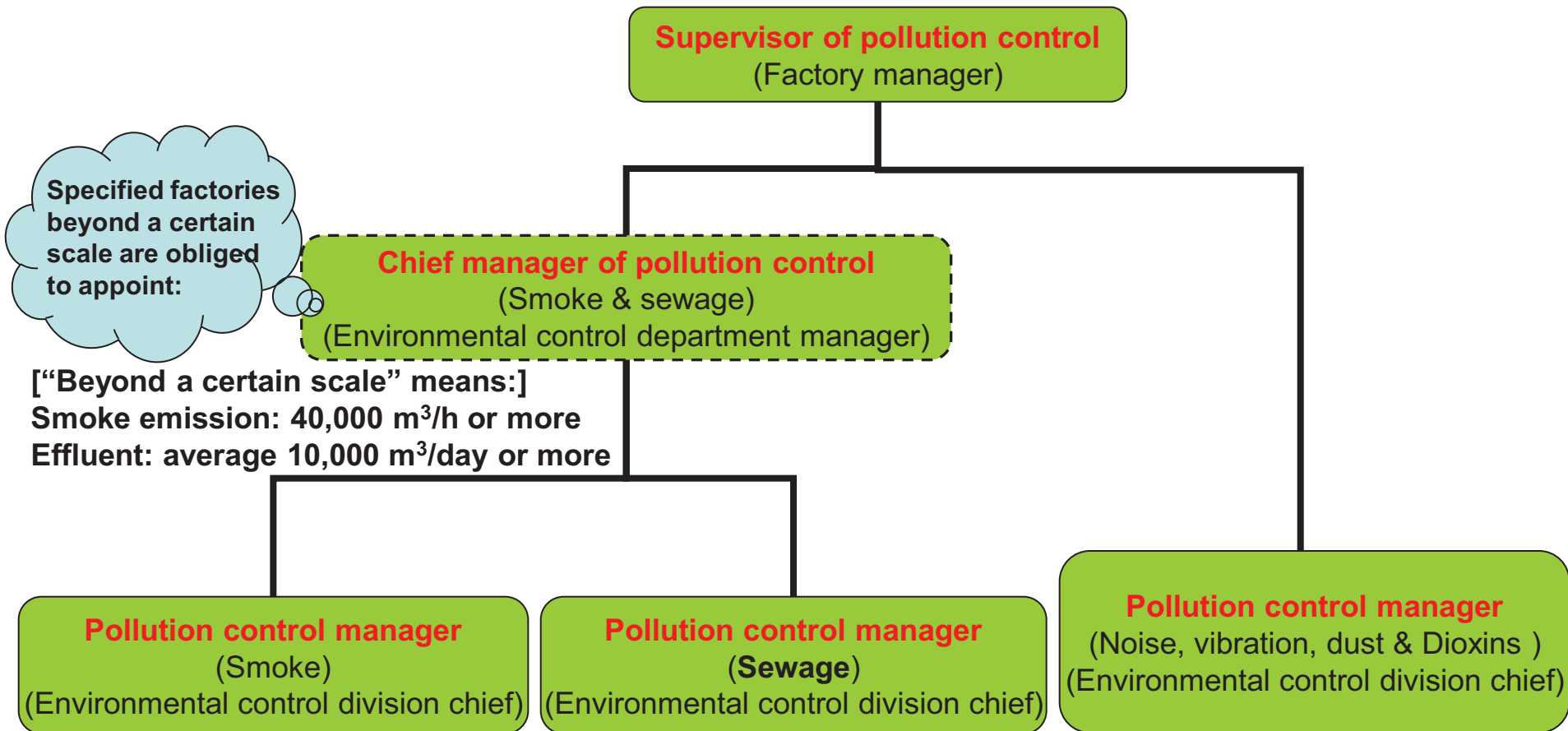
It aims at developing a pollution control structure at specified factories by installing a pollution control manager system, etc., thereby contributing to pollution control.

## 【Specified Factory】

Smoke, sewage or wastewater, excessive noise, specified dust or general dust, excessive vibration and dioxins.

Among the factories that discharge or generate the above items, certain ones are designated as specified factories.

# Basic Concept for Pollution Control Manager System





Thank you for your kind attention

MOEJ's Website

([URL:http://www.env.go.jp/chemi/](http://www.env.go.jp/chemi/)) (Japanese Only)