

Chemicals Management Policy in Korea



Ministry of Environment
Republic of Korea

C O N T E N T S

1. Overview
2. Chemicals Management System
3. Emerging Policies and Issues



Overview

- ◆ Background
- ◆ History of Chemicals Management
- ◆ Legal Framework
- ◆ Organization

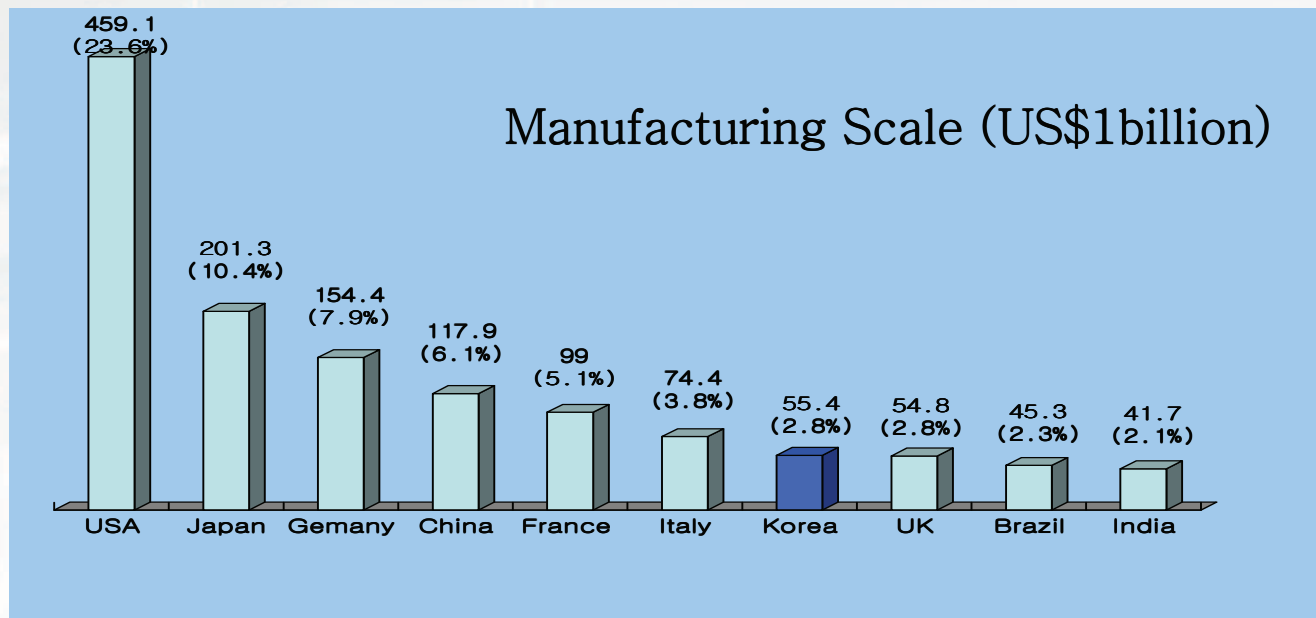
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Background

○ Major player in the Korean economy

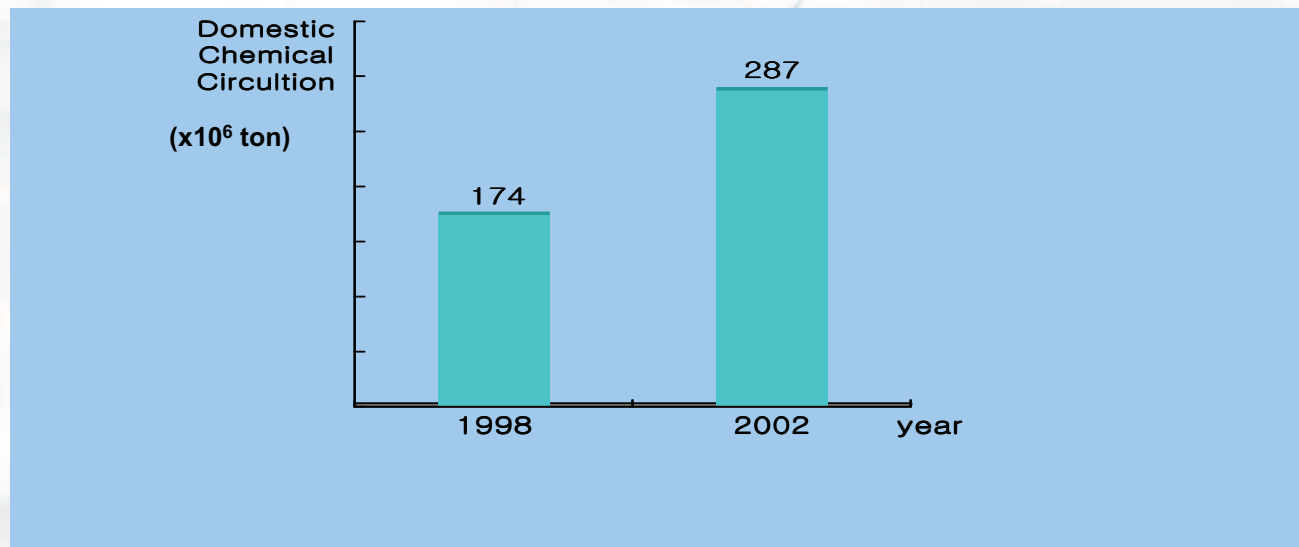
- Accounts for 10% of the domestic manufacturing industry
- Ranked 7th in the global chemical industry



Chemical Production in Major Countries (Korea NSO, 2003)

Background *cont'd*

- More than 40,000 chemicals in the market
 - 400 new chemicals are produced or imported annually
- 287.4 million tons in trade (2002)
 - HPV (>1,000 ton/yr) chemicals (287)



History of Chemicals Management

History	Contents
Toxic chemicals management ('63~'90) (Act on Poisons and Toxins)	Hazard/noxious substances to prevent poisoning
Beginning of full-scale chemicals management policy('90~'96) (Toxic Chemicals Control Act)	Systematic chemicals management including hazardous assessment
Setting up a basis for advanced chemicals management('96~'05)	OECD accession in 1996, introduction of TRI, GLP and risk assessment
Policy shift to enhance public health based on risk assessment('06~) (Revision of TCCA)	Chemical Self-confirmation, banned /restricted chemicals

Legal Framework

○ Toxic Chemicals Control Act (rev. 2004)

- Basic law regarding chemicals management in Korea
“To prevent risk caused by chemicals to human health or the environment” and “to control hazardous chemicals so that everyone can live in a healthy environment”
- Five Chapters
 - Framework Plan for Hazardous Chemicals Control, TRI, etc.
 - New Chemical Notification, Risk Assessment, etc.
 - Safe Control of Toxic Chemicals, Banned or Restricted Chemicals, Responses to Chemical Accidents, etc.
 - Supplementary Provisions
 - Penalty Provisions

Legal Framework *cont'd*

○ Relevant laws

Laws	Ministries	Major contents
<ul style="list-style-type: none">• Industrial Safety and Health Act	Ministry of Labor	<ul style="list-style-type: none">• MSDS, occupational health management
<ul style="list-style-type: none">• High Pressure Gas Safety Control Act• Quality Management and Industrial Products Safety Control Act	Ministry of Commerce, Industry and Energy	<ul style="list-style-type: none">• Toxic gas storage and transportation• Hazardous chemicals standard for industrial products
<ul style="list-style-type: none">• Explosives Safety Control Act	National Emergency Management Agency	<ul style="list-style-type: none">• Explosives storage and transportation
<ul style="list-style-type: none">• Ship Safety Act	Ministry of Maritime Affairs & Fisheries	<ul style="list-style-type: none">• Explosives classification and labelling, maritime transportation
<ul style="list-style-type: none">• Agricultural Chemicals Control Act• Fertilizers Control Act	Ministry of Agriculture & Forestry	<ul style="list-style-type: none">• Agricultural chemicals management• Fertilizer management
<ul style="list-style-type: none">• Pharmaceutical Affairs Act	Ministry of Health & Welfare	<ul style="list-style-type: none">• Pharmaceuticals management

Institutional Framework

○ Ministry of Environment

- Environment Health Policy Division, Chemicals Safety Division, Hazardous Chemicals Division (*Total 3 Divisions*) ('04)
- Chemicals Management Division in each River Basin/Regional Environmental Office

○ National Institute of Environmental Research

- Environmental Health Research Department, Chemicals Assessment Department ('07)

○ Related Ministries

- Ministry of Labor, Ministry of Commerce, Industry and Energy, National Emergency Management Agency

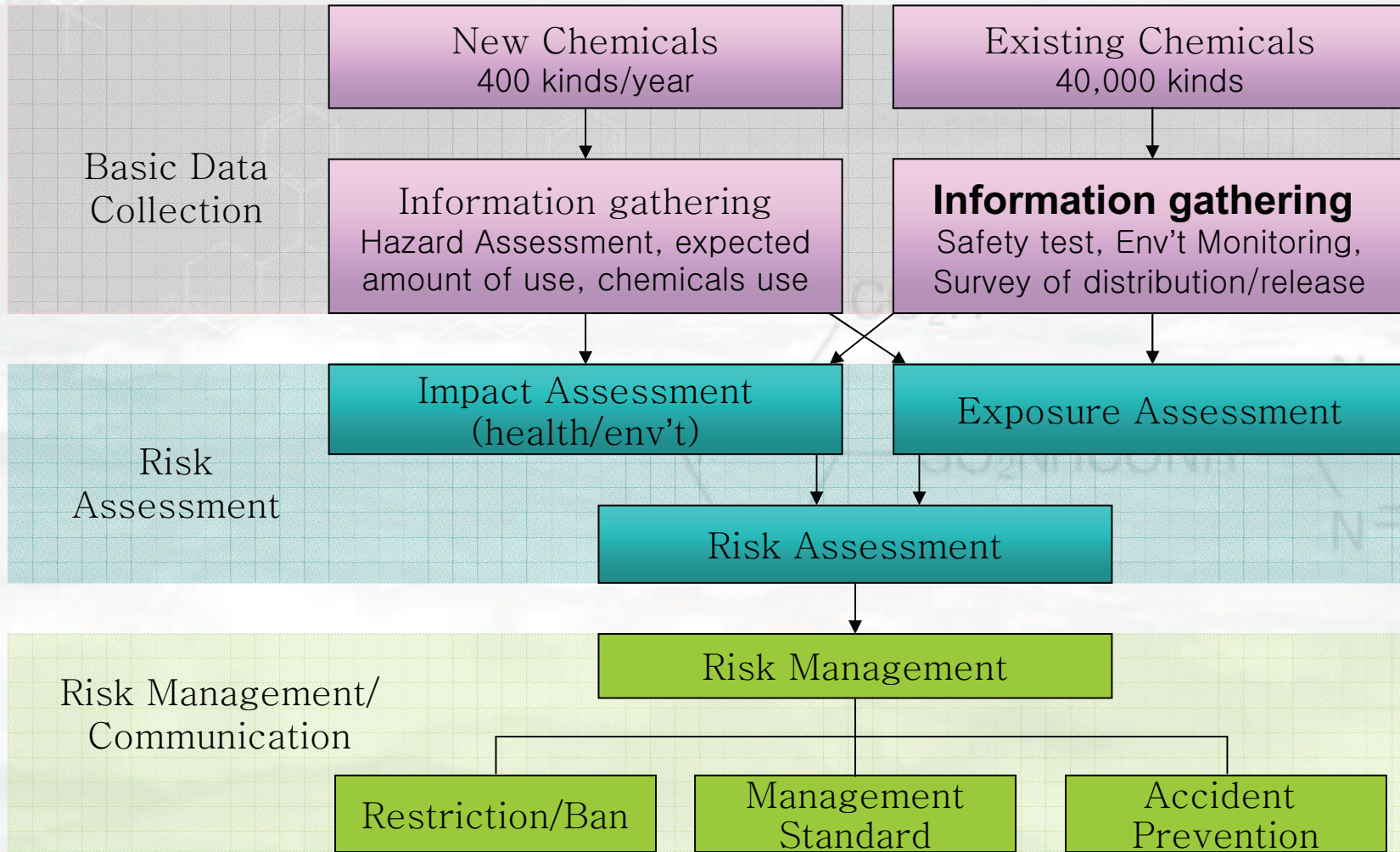
Chemicals Management System

- ◆ Overview of Management Framework
- ◆ Assessment of New & Existing Chemicals
- ◆ Regulation of Hazardous Chemicals
- ◆ Risk Assessment
- ◆ Information Sharing
- ◆ Participation of Stakeholders
- ◆ Partnership with Enterprises
- ◆ Capacity Building

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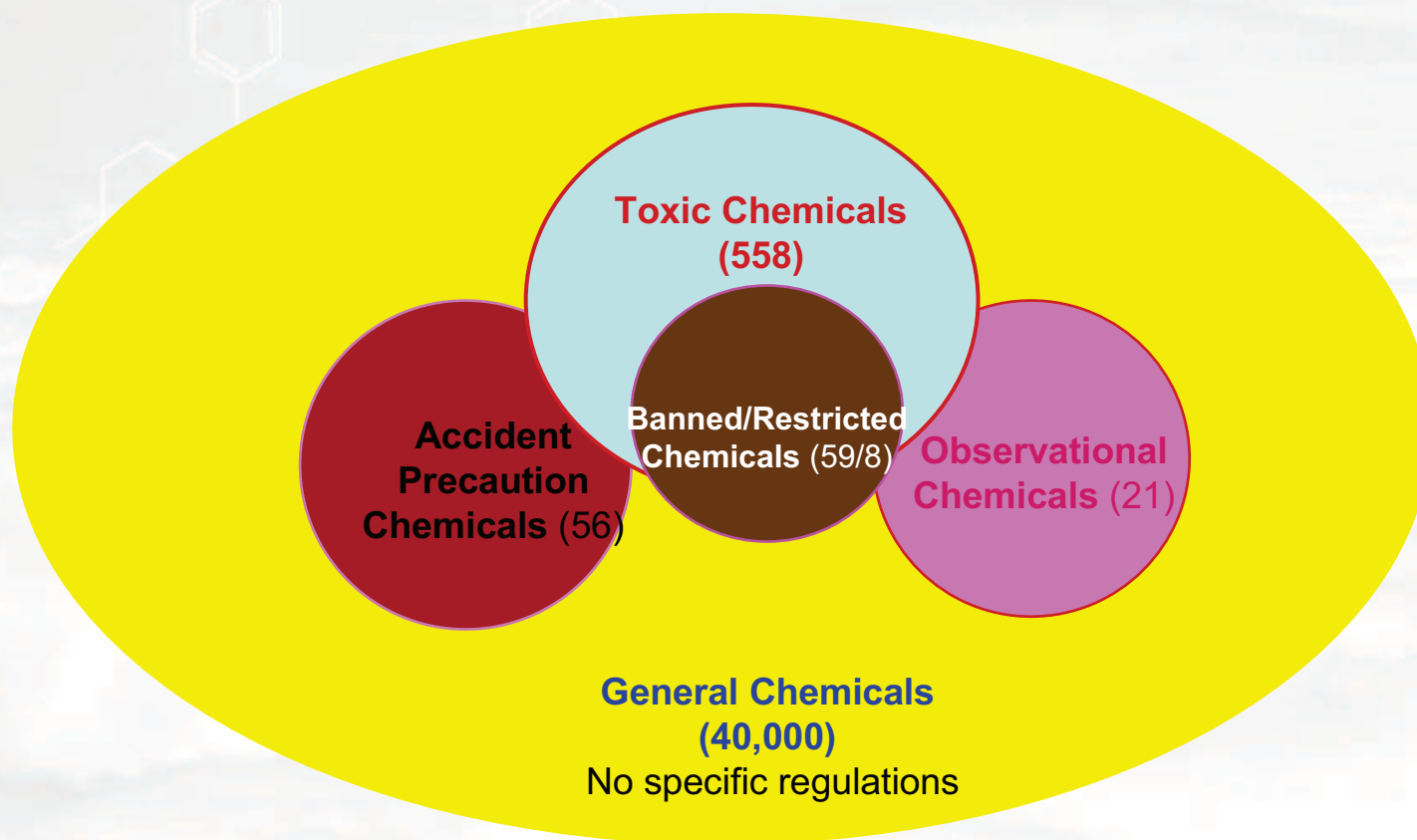


Overview of Management Framework



Categorization of Chemicals

- According to their hazard and risk



Definitions

- Toxic chemicals
 - Harmful to human health or the environment
- Observational chemicals
 - Being likely to be harmful to human health or the environment
- Restricted or banned chemicals
 - Severely harmful to human health or the environment
- Accident precaution chemicals
 - High acute toxicity, explosive hazard, etc. and thus presents a high risk at an accident

Chemicals Self-confirmation

- Manufacturer or importer of chemicals shall submit chemicals self-confirmation sheet to MOE prior to manufacturing or import
 - Confirmation of New Chemicals, Toxic Chemicals, Observational Chemicals, Restricted Chemicals
- Submit only once for the same product
 - Exporters in overseas need to offer chemicals information to their importers in Korea
- Result of Chemicals Self-confirmation(2006)
 - 439 Manufacturer(6,828 chemicals), 9,336 importer(210,269 chemicals)

Assessment of New & Existing Chemicals

○ New Chemicals

- Chemicals produced/introduced in Korea for the first time (approx. 400 kinds/yr)
 - ➔ Completion of 4,679 chemicals evaluation from 1991 to 2006
 - ➔ Designate 125 chemicals as toxic chemicals and 12 chemicals observational chemicals
- Assess six items for toxicity
 - ※ 13 items recommended by the OECD
 - Acute oral toxicity, genetic toxicity, biodegradability, fish acute toxicity, daphnia toxicity, algae toxicity
 - ※ Acute dermal toxicity, acute inhalation toxicity, skin irritation, skin sensitization, eye irritation, repeated dose toxicity, bioaccumulation (OECD)

Assessment of New & Existing Chemicals

○ Existing Chemicals

- Safety test: approx. 15 kinds/yr according to priorities of chemical distribution
 - ➔ Completion of 983 chemicals evaluation by 2006
 - ➔ Designate 440 chemicals as toxic chemicals and 9 chemicals observational chemicals
- Risk assessment for hazardous chemicals
 - Annual risk assessment by stage
 - Chemicals management plans based on survey of toxicity, distribution, emissions of chemicals

Regulation of Toxic Chemicals

- Required to register
 - People who want to produce, market, store, transport, or use toxic chemicals
 - 558 toxic chemicals

< Number of Toxic Chemicals Business Entities > (2006)

Total	Manufacturing	Sales	Storage	Transportation	Use
5,783	449	3,332	104	214	1,684

- Regulation on the import of toxic chemicals
 - People who intend to import a toxic chemical for the first time shall give notice of its type, applications, etc. to MOE
 - Reagents for tests, research, and inspection are exempted

Regulation of Toxic Chemicals *cont'd*

- Regular/irregular facility inspection
 - Applications for regular inspection (every year) and safety inspection (if necessary)
 - MOE guidance for managing toxic chemicals during storage, transportation and distribution
- Post management for toxic chemicals handlers
 - Reporting annual results of manufacturing, sales, storage, transportation by Feb. next year
 - Keeping documents and their preservation for 3 years (chemicals self-confirmation, import license, etc.)

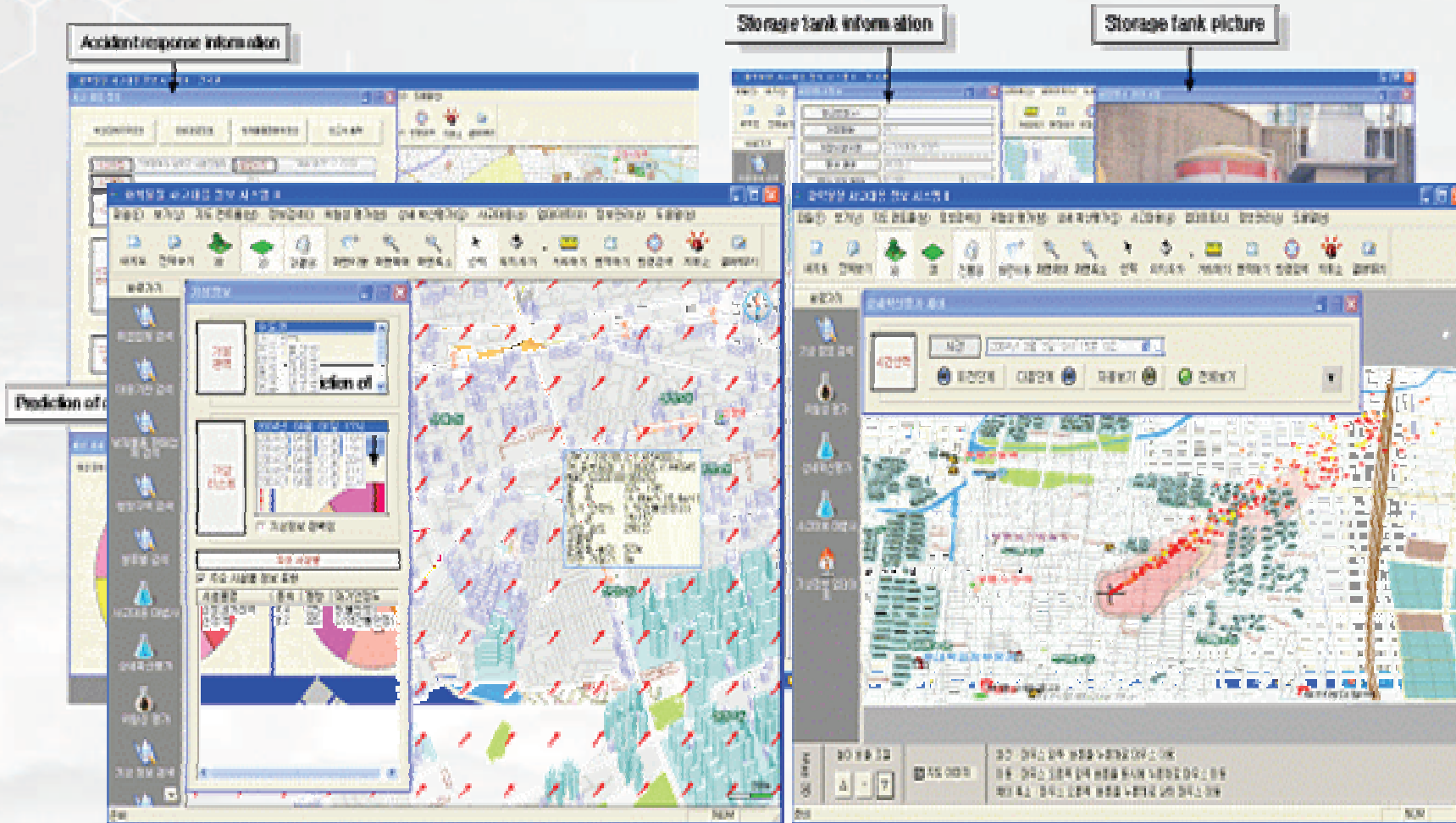
Regulation of Restricted Chemicals

- Required to obtain business permission
 - People who want to produce, market, store, transport, or use restricted chemicals
 - 8 restricted chemicals (Methyl bromide, Malachite Green, Carbon tetrachloride, etc.)
 - ※ 59 banned chemicals (PCBs, Aldrin, Endrine, etc.)
- MOE Guidance for managing restricted chemicals during storage, transportation and distribution
- Needs prior authorization for the import of restricted chemicals
 - Reagents for tests, research, and inspection are exempted

Accident Precaution Chemicals

- Designation of 56 accident precaution chemicals
 - phosgene, benzene, ammonia, chlorine, etc.
- Emergency Preparedness Plan for certain sized facilities
- Report of accident
 - Report to the local government, local environmental office, police station, fire station, or local labor authority
 - MOE distributes the report to other organizations
- Survey on post accident impact and establishment of restoration guideline

Chemical Accidents Response Information System (CARIS)



Management of Persistent Organic Pollutants (POPs)

❑ Enactment of POPs Control Act (Jan. '07)

○ Objective

- To protect human health and environment from POPs

○ Contents

- Set up the emission standards for POPs
- Preparing treatment method and recycling standards of POPs waste
- Implementing Stockholm Convention which was ratified in Jan. '07

Management of POPs *cont'd*

□ Dioxin

- Risk assessment project of dioxin
 - Assessing the current pollution level of dioxin in Korea using the existing dioxin measurement data
 - ※ Dioxin Risk Assessment Committee ('05.7~)
- Establishment of 'dioxin emission allowable standards' ('08.1)
 - Daily allowable exposure amount: 4pg-TEQ/day/Kg
 - Environmental std. in air: 0.6pg-TEQ/Sm³ (yearly average)

Management of POPs *cont'd*

□ PCBs

- Checking the PCBs-containing stockpiles such as transformer
 - Examine oil-filled transformers and set up a database
- Development of 'Guideline for handling PCBs-containing waste'
 - For handling PCBs-containing waste during waste collection and transportation
- Collection and storing methods of PCBs-containing waste
 - Attachment of identification tag and RFID('06.4)
- Considering the use of chemical reaction methods rather than using high temperature incineration

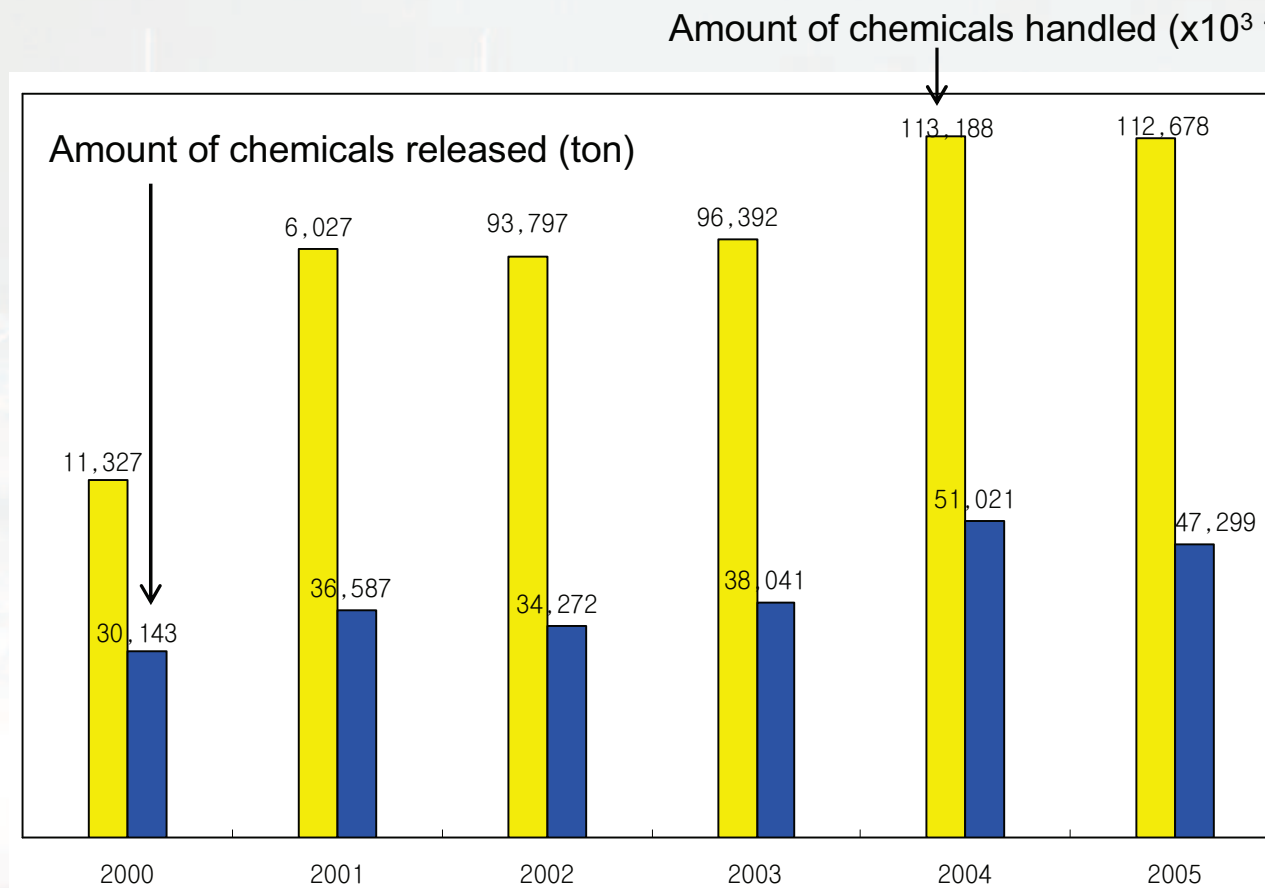
Risk Assessment

- 107 high-risk priority chemical substances were selected based on their potential hazard and distribution amount ('02~'03)
- An initial risk assessment about 17 chemicals among the priority chemicals ('03~'06)
 - Previous screening test for selecting chemicals and concerned area
 - Based on chemicals toxicity, monitoring, exposure assessment, etc.
- A detailed risk assessment of 7 chemicals ('07~)
 - Lead, Cadmium, Mercury, Arsenic, Chrome, Nickel, Benzene
 - Kyunggi Banweol, Sihwa, Gumi, Incheon industrial complex, etc.

Toxics Release Inventory (TRI)

- To report the amount of chemicals released to the environment in the process of production or use, as well as the amount transferred to other places
 - 388 chemicals from companies with > 30 employees
 - Annual ('00~)
- ※ Chemicals Distribution Amount Survey
 - Facilities which manufacture or use > 100 Kg
 - Every 4 years ('98~)

Amount of Chemicals Released



TRI Information System

- Government is opening TRI results to the public
 - Statistics by regions, Industries, etc.(~'99)
 - Statistics of each enterprise will be available from 2008

The left screenshot shows the homepage of the TRI Information System. It features a banner with the text "화학물질 배출량 정보공개 시스템" (Chemical Discharge Information System) and an illustration of two children. Below the banner, there is a section titled "TRI (화학물질 배출량 조사제도)는" (What is TRI (Chemical Discharge Investigation System)?) and a list of notices under "공지사항" (Notices).

The right screenshot shows a detailed view of the "지역별 배출현황" (Regional Discharge Status) page. It includes a table of data and a map of South Korea. The table shows the following data:

연도	총량	2005	2006	2007	2008
1	1,000	100	200	300	400
2	2,000	200	400	600	800
3	3,000	300	600	900	1,200
4	4,000	400	800	1,200	1,600
5	5,000	500	1,000	1,500	2,000
6	6,000	600	1,200	1,800	2,400
7	7,000	700	1,400	2,100	2,800
8	8,000	800	1,600	2,400	3,200
9	9,000	900	1,800	2,700	3,600
10	10,000	1,000	2,000	3,000	4,000

National Chemicals Information System

- Ongoing project of NCIS construction('05~ '09)
 - Providing domestic chemicals database, information on toxic substances and regulations

The screenshot shows the main interface of the National Chemicals Information System (NCIS). It features a navigation menu with categories like 'NCIS 소개' (Introduction), '물질검색' (Material Search), '발령정보' (Designation Information), '관련사이트' (Related Sites), and '통합게시판' (Integrated Noticeboard). A search bar is prominently displayed, allowing users to filter results by various criteria such as '유해성' (Hazardousness), '화학물질명' (Chemical Name), 'CAS No.', and 'NIER's Number'. Below the search bar, there are several informational boxes, including one for '화학물질정보를 통한 안전한 화학 제품 서비스!!' (Safe chemical products service through chemical information!!) and another for '화학물질 목록' (Chemical Substance List).

This screenshot displays the search results page for the query '50-80-0'. The page includes a search filter section with options like 'ALL', 'Toxic Chemicals', 'Korean Existing Chemicals Inventory', and 'Restricted Chemicals'. Below the filters, a table lists the search results:

CAS No.	Korean Existing Chemicals Inventory	Chemical Name	Korean Chemical Name	NIER's Number	Toxic Chemicals	Observational Chemicals	Restricted/Banned Chemicals
50-80-0	KE-1104	Formaldehyde, Formalin	포름알데히드		97-1-35		
13199-80-0	KE-3182	Sodium 2-[2-(2-iododecylsulfonylethyl)ethyl]sulfate					
6859-80-0	KE-1670	Fatty acids, sat. or polymers with carbon atoms, ethane anhydride and terephthalic acid					

Below the table, there are instructions: '+ You can see full report by clicking of CAS No. and chemical name, + You can see detailed classification by clicking of NIER's Number.'

Participation of Stakeholders

○ Chemical Policy Councils

- Hazardous Chemicals Management Committee

➔ 26 members (MOE and related ministry :10, company, NGO, institute, university : 16)

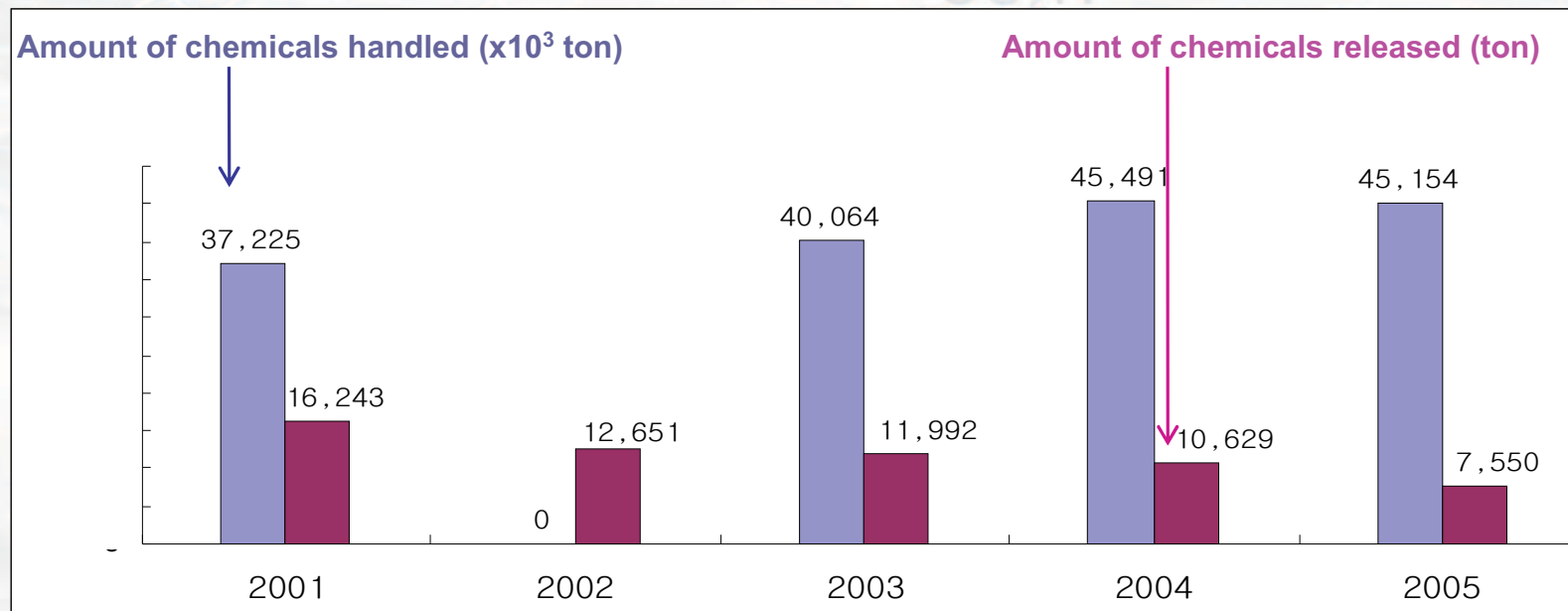
➔ Deliberation on risk management, toxicity confirmation, substitute for hazardous chemicals, public relation about pollution prevention, international cooperation, etc.

- PCBs Committee
- Dioxin Risk Assessment Committee
- Hazardous Materials Life-Cycle Risk Assessment Committee
- Household Utensils Government-NGOs Committee, etc.
(children goods, adhesives, cellular phone...)

Partnership with Enterprises

○ 30/50 Program

- Enterprises' voluntary agreement to reduce chemicals release('04-)
- 30% decrease by 2007 and 50% by 2009
- Participation of 205 plants, MOE, local government, NGOs



Partnership with Enterprises *cont'd*

- Voluntary agreement to exterminate PCBs
 - Technology development and provision of funding for exterminating PCBs by 2015
 - Participation of 7 Electric power companies, MOE, NGOs
- Voluntary Agreement to reduce dioxin
 - 30% decrease of dioxin release by 2008 and 50% by 2010
 - Participation of 19 companies, MOE, NGOs

Capacity Building

- Periodic mandatory education for field managers dealing with toxic chemicals and restricted/banned chemicals (every 3 years)
 - TCCA regulation, toxic chemicals property, general chemistry
- Education for officeholders in charge of chemicals management
 - MOE and local government : TCCA regulation, GHS, risk assessment, chemicals accident precaution
 - Emergency response agencies (fire station, police) : chemicals accident precaution, CARIS, emergency preparedness plan

Capacity Building *cont'd*

- **Distribution of Policy Information Pamphlet**
 - TCCA, TRI, accident precaution



TCCA



TRI

Emerging Policies and Issues

- ◆ Framework Plan on Hazardous Chemicals Management (2006-2010)
- ◆ Health Protection Policy for Children
- ◆ New Chemicals Evaluation System
- ◆ GHS
- ◆ REACH
- ◆ SAICM

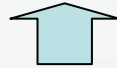
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Framework Plan on Hazardous Chemicals Management (2006-2010)

<GOAL>

Protecting human health and environment from the hazard of chemicals



<STRATEGIES>

- ◆ Expanding management coverage : Hazard → Risk
- ◆ Utilization of diverse policy tools
- ◆ Enhancing cooperation mechanism among all stakeholders



<MAJOR TASKS>

- Strengthening the basis for safe management of hazardous chemicals
- Risk management of chemicals from a standpoint of human health protection
- Establishing a focused control system on specific hazardous chemicals
- Enhancing Risk Communication
- Introducing a new chemical registration & evaluation system

Health Protection Policy for Children

- Securing environmental safety of children activity places (playground, school zone)
 - Indoor air quality management
- Protecting children health from hazardous chemicals release from children goods
 - Introduction of recall system
- Establishment of risk assessment for children
- Development of risk communication
 - Teach program, symbol mark

New Chemicals Evaluation System

- Introduction of a “new” system by 2011 to address global trend
 - Expansion of the assessment items to meet OECD recommendation (6 → 13 items)
 - Enhancing the role of industry in chemicals data production
 - Strengthening information sharing on chemicals through supply chain

GHS

- Operation of Inter-Ministerial Committee since 2004
 - MOE, Ministry of Labour, National Emergency Management Agency, etc.
 - UN GHS Purple Book published (Korean Version)
- Preparation of national GHS regulation
 - MOE will revise the ministerial decree of TCCA to apply GHS on toxic chemicals (2,000 kinds) by 2007
 - ※ Transition period : 3 yrs (toxic substances) or 5 yrs (mixtures)
 - Development of GHS guideline and education program
 - ※ Ministry of Labor revised the Industrial Safety and Health Act relating to GHS and the detailed notification was announced Dec 2006, which ask mandatory application from July 2008

Building a Response System to REACH

- MOE has been a leading role in coping with REACH in its early stage of REACH
- The Goal
 - Providing systematic support service to related industry and improving domestic chemical management system
- Established the “REACH Task Force” in Sep. 2006 under MOE
- Operation of “Helpdesk” for Industry
 - Homepage: <http://reach.me.go.kr>

SAICM

- Establishment of “SAICM Promotion Council” ('06.10)
 - Participation of government, industry, expert, etc.
 - Under development of national implementation plan

THANK YOU

감사합니다