

# 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 Issues
4. Future Policy Direction

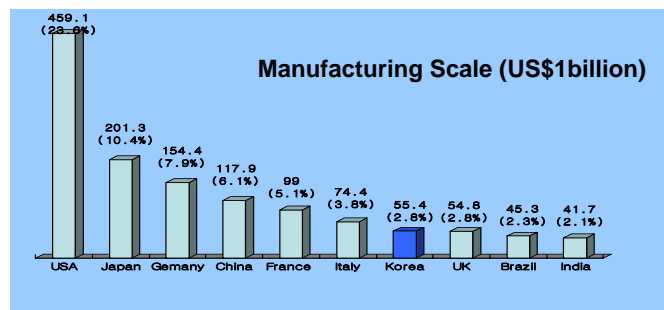
## Overview

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

# 1

## Background

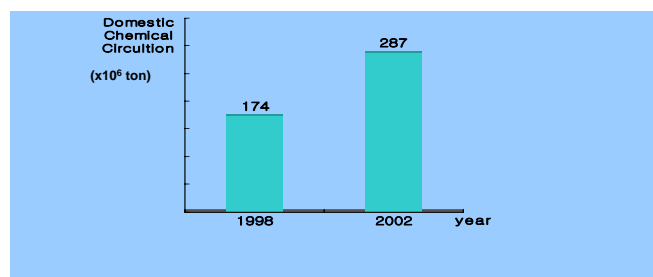
- Major player in the Korean economy
  - Accounts for 10% of the domestic manufacturing industry
  - Ranked 7<sup>th</sup> in the global chemical industry



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
• Industrial Safety and Health Act	Ministry of Labor	• MSDS, occupational health management
• High Pressure Gas Safety Control Act • Quality Management and Industrial Products Safety Control Act	Ministry of Commerce, Industry and Energy	• Toxic gas storage and transportation • Hazardous chemicals standard for industrial products
• Explosives Safety Control Act	National Emergency Management Agency	• Explosives storage and transportation
• Ship Safety Act	Ministry of Maritime Affairs & Fisheries	• Explosives classification and labelling, maritime transportation
• Agricultural Chemicals Control Act • Fertilizers Control Act	Ministry of Agriculture & Forestry	• Agricultural chemicals management • Fertilizer management
• Pharmaceutical Affairs Act	Ministry of Health & Welfare	• Pharmaceuticals management

# Institutional Framework

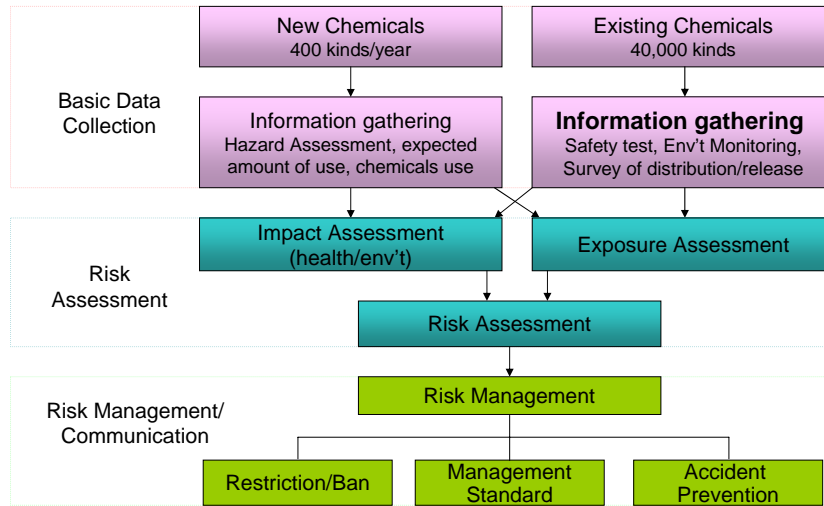
- Ministry of Environment
  - Environment Health Policy Division, Chemicals Safety Division, Hazardous Chemicals Division (*Total 3 Divisions*) ('04)
  - Chemicals Management Division in each River Basin/Regional Environmental Office
- National Institute of Environmental Research
  - Environmental Health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

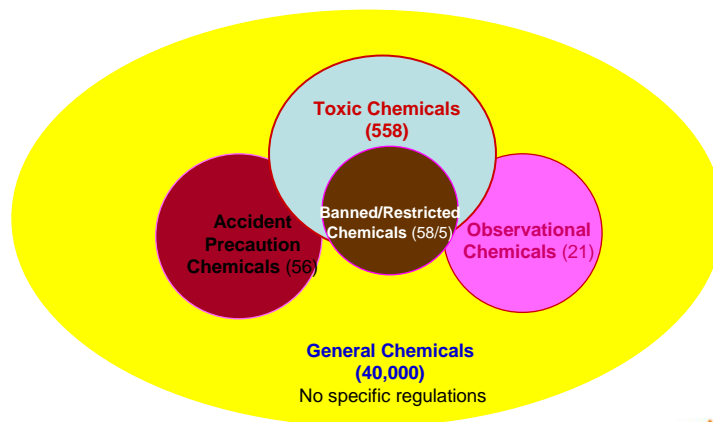
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# Overview of Management Framework



# 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

## 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.)

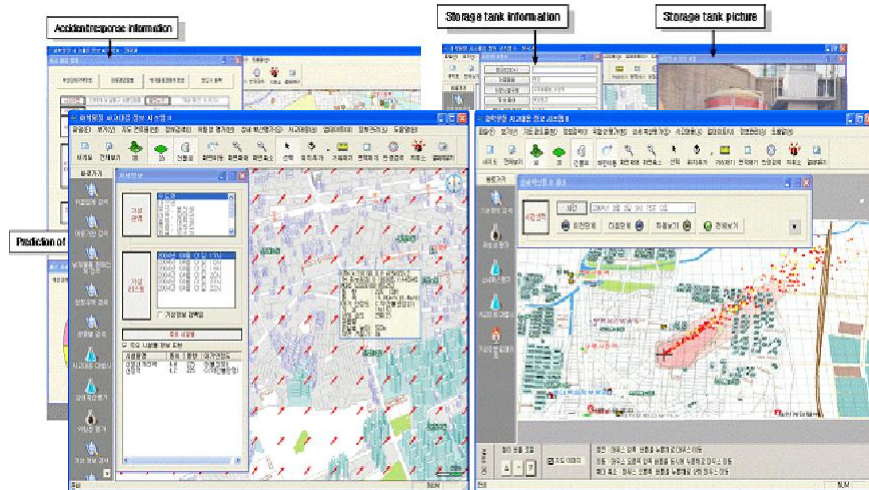
## Regulation of Restricted Chemicals

- Required to obtain business permission
  - People who want to produce, market, store, transport, or use restricted chemicals
  - 5 restricted chemicals (Methyl bromide, Malachite Green, Carbon tetrachloride, etc.)
    - \* 58 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
    - To implement 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)
  - Considering with the current status of each industry with the full review by stakeholders

## 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

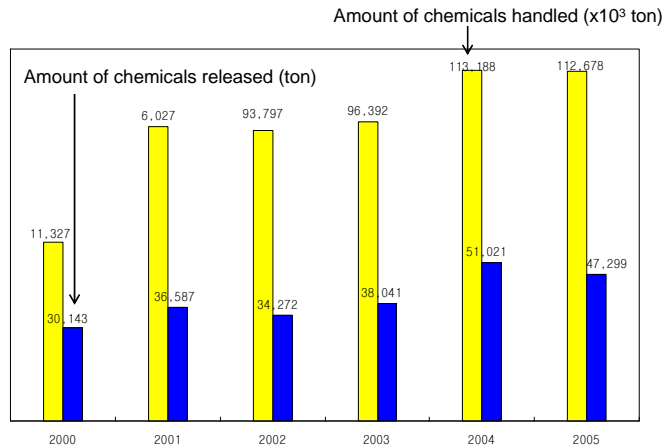
## Risk Assessment

- 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



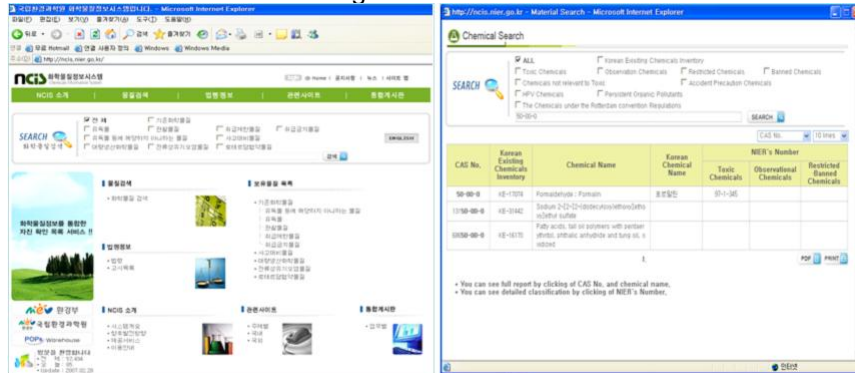
# TRI Information System

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



# National Chemicals Information System

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



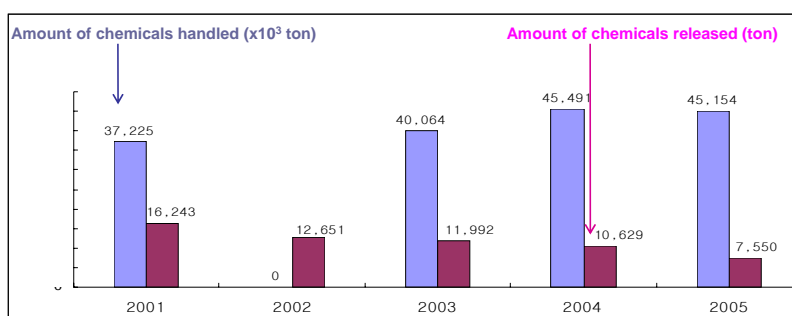
# Participation of Stakeholders

- Chemical Policy Councils
  - Hazardous Chemicals Management Committee
    - ➔ 26 peoples (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 167 Enterprises, 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

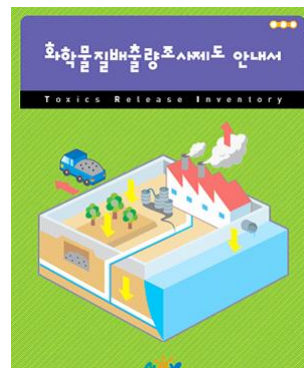
- Periodic mandatory education for field managers dealing with toxic chemicals and restricted/banned chemicals (every 3 years)
  - TCCA regulation, toxic chemicals property, general chemistry
- Education for officeholders in charge of chemicals management
  - MOE and local government : TCCA regulation, 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  34  
Ministry of Environment  
Republic of KOREA

## Emerging Issues

- ◆ Health Protection Policy for Children
- ◆ REACH
- ◆ GHS
- ◆ SAICM

# 3

## 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

## 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>

## GHS

- Operation of Inter-Ministerial Committee since 2004
    - MOE, Ministry of Labor, National Emergency Management Agency, etc.
    - UN GHS Purple Book published (Korean Version)
  - Preparation of national GHS regulation
    - MOE will prepare regulation on toxic chemicals (2,000 kinds) by 2007
    - 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

# SAICM

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

## Future Policy Direction

- ◆ The Goal and Strategies
- ◆ New Chemicals Evaluation System
- ◆ Risk Management of Chemicals Based on Public Health
- ◆ Integrated Risk Assessment & Management

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## Framework Plan(2006-2010) on Hazardous Chemicals Management

### <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

## New Chemicals Evaluation System

- Introduction of a “new” system by 2010 to address global flow
  - 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

## Risk management of Chemicals Based on Public health

- Establishment of receptor-oriented risk assessment system
- Life cycle management of living goods containing hazardous substances
  - Chemical exposure monitoring on a daily basis
- Protection of vulnerable people (e.g. children) from hazardous substances
  - Periodic monitoring of exposure to hazardous substances contained in children's goods and establishment of management system

## Integrated Risk Assessment & Management (IRAM)

- Promotion of environmental health policy focused on the risk of receptor such as human health and environment
  - Integrated Environmental Standards (incorporation of air, water and soil)
- Implementation plan for risk assessment and management ('02~'05, first stage)
- IRAM TF and Forum('06)
- Implementation plan for risk assessment and management ('07~'10, second stage)

THANK YOU

감사합니다