

# Introduction to Reorganized Hazardous Chemicals Designation and Management System

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환경부

Ministry of Environment



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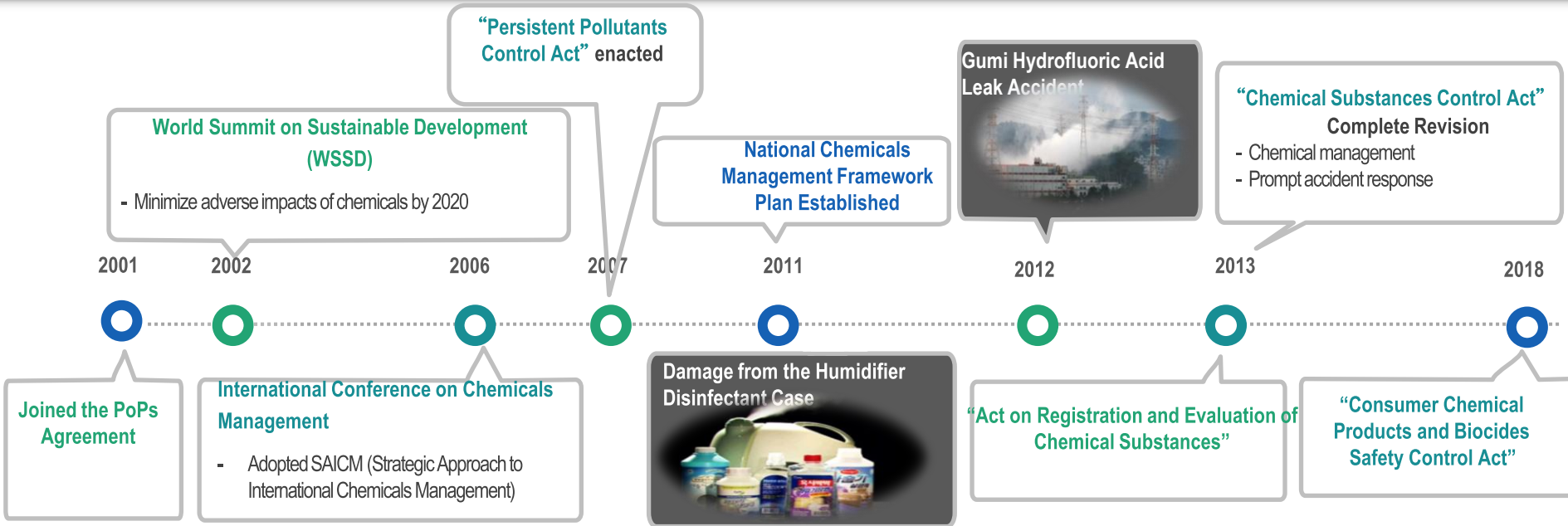
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# I . Current State

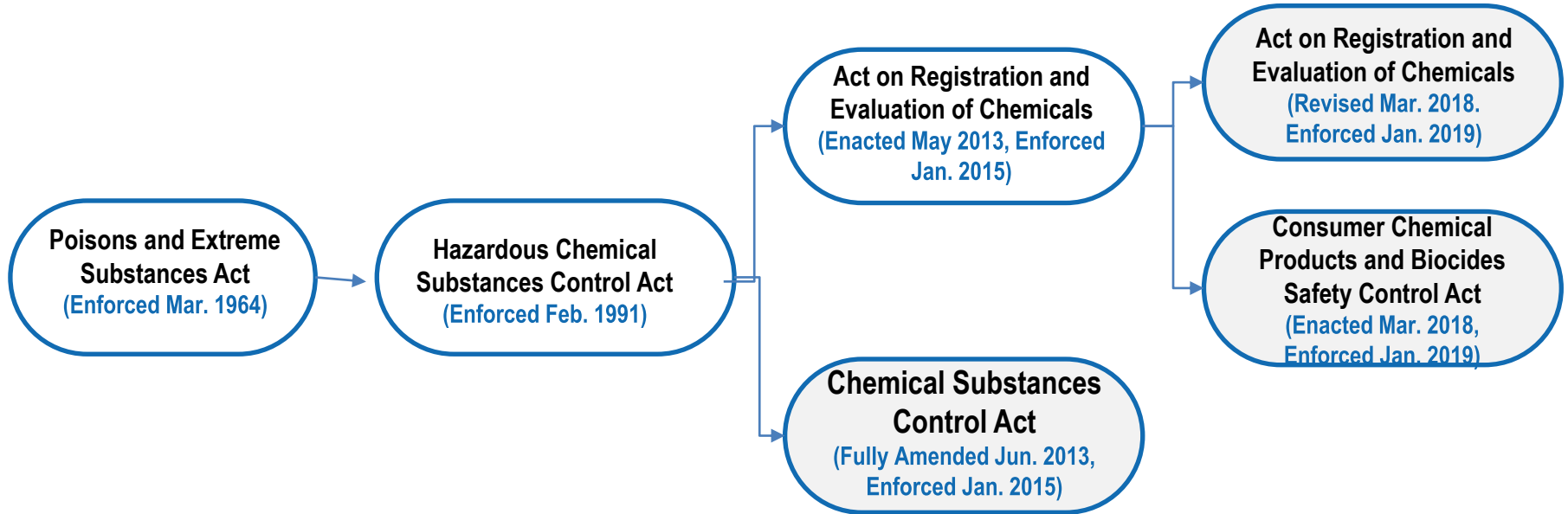
# 1. History of Chemical Safety Management



- ◇ The Poisons and Extreme Substances Act enacted(1963)
  - Preventing health and hygiene risks by properly managing poisons and extreme substances
- ◇ The Hazardous Chemical Substance Control Act enacted(1990)
  - Contributing to public health and environmental preservation by examining the hazards of chemicals and managing hazardous chemicals appropriately
- ◇ Established advanced chemical management system(2006-2014, the Hazardous Chemical Act amended)
  - Promoting scientific regulatory policies based on risk assessment through restrictions on handling and designation of prohibited substances
- ◇ Strengthened chemical accident management system at stage including prevention, response and recovery (2015, the Chemical Substances Control Act completely amended)

## 2. Development of 3 Key Chemical Acts

Following the 2011 humidifier disinfectant case and the 2012 Gumi hydrofluoric acid leak accident, the **Hazardous Chemical Substances Act** was restructured into 3 separate acts to enhance accident prevention and public safety protection, including the **Act on Registration and Evaluation of Chemicals** and **Evaluation of Chemicals**.



# 3. Highlights of 3 Key Chemical Acts

Act on Registration and Evaluation of Chemicals

Chemical Substances Control Act

Consumer Chemical Products and Biocides Safety Control Act

Identify chemical hazards  
<Registration/Reporting, & Assessment>

Manufacture, Import  
<Market Entry>

Use (Manufacture),  
Storage, Transportation,  
etc.  
<Safety Control>

Sale  
<Distribution Management>

Management of distribution  
and safe handling of  
daily consumer chemical  
products  
<Product Reporting & Approval>

Registration & reporting of chemical substances, hazard assessment  
Designation of restricted, prohibited, permitted, and intense-control substances  
Transmission of hazard information

Chemical distribution management (verification and statistical surveys on chemical substances, etc.)  
Management of hazardous chemical handlers (business permits etc.)  
Management of hazardous chemicals handling facilities (chemical accident prevention and management plan, handling facility inspection, etc.)  
Immediate reporting of chemical accidents and operational shutdown

Risk assessment of daily use consumer chemical products, approval of biocidal substances and products, safety standards, etc.

Production of Information

Safety and distribution management based on hazard information

Management of consumer chemical products

## 4. Overview of Chemical Substances Control Act

### Purpose

Preventing public health and environmental risks from chemicals through systematic chemical management

Protecting people's lives, property, and the environment from chemicals through prompt response to chemical accidents

### Background

A hydrofluoric acid spill in Sep. 2012 and several other small-scale chemical accidents highlighted the need for the revision of law to prevent and respond to accidents more effectively.

\* Hydrofluoric acid spill (2012): resulted in 5 deaths, 15 injuries, and 55.4 billion won in property damage

### Implications of the 2012 Hydrofluoric Acid Accident

Need to assess the impact of chemical accidents beyond the workplace and implement safety measures

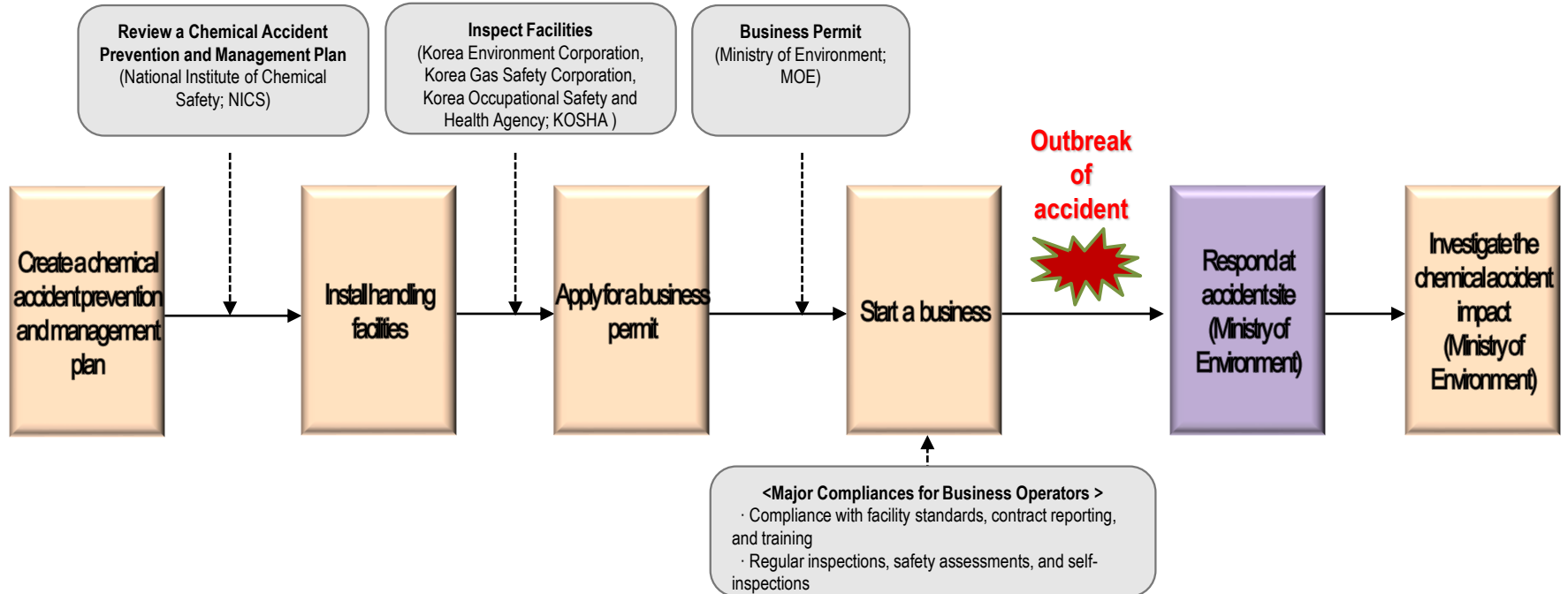
Crucial to establish specific safety management standards for handling facilities, such as the installation of emergency shut-off devices

Ensure the use of appropriate personal protective equipment

Need to establish an initial response system in the event of a chemical accident

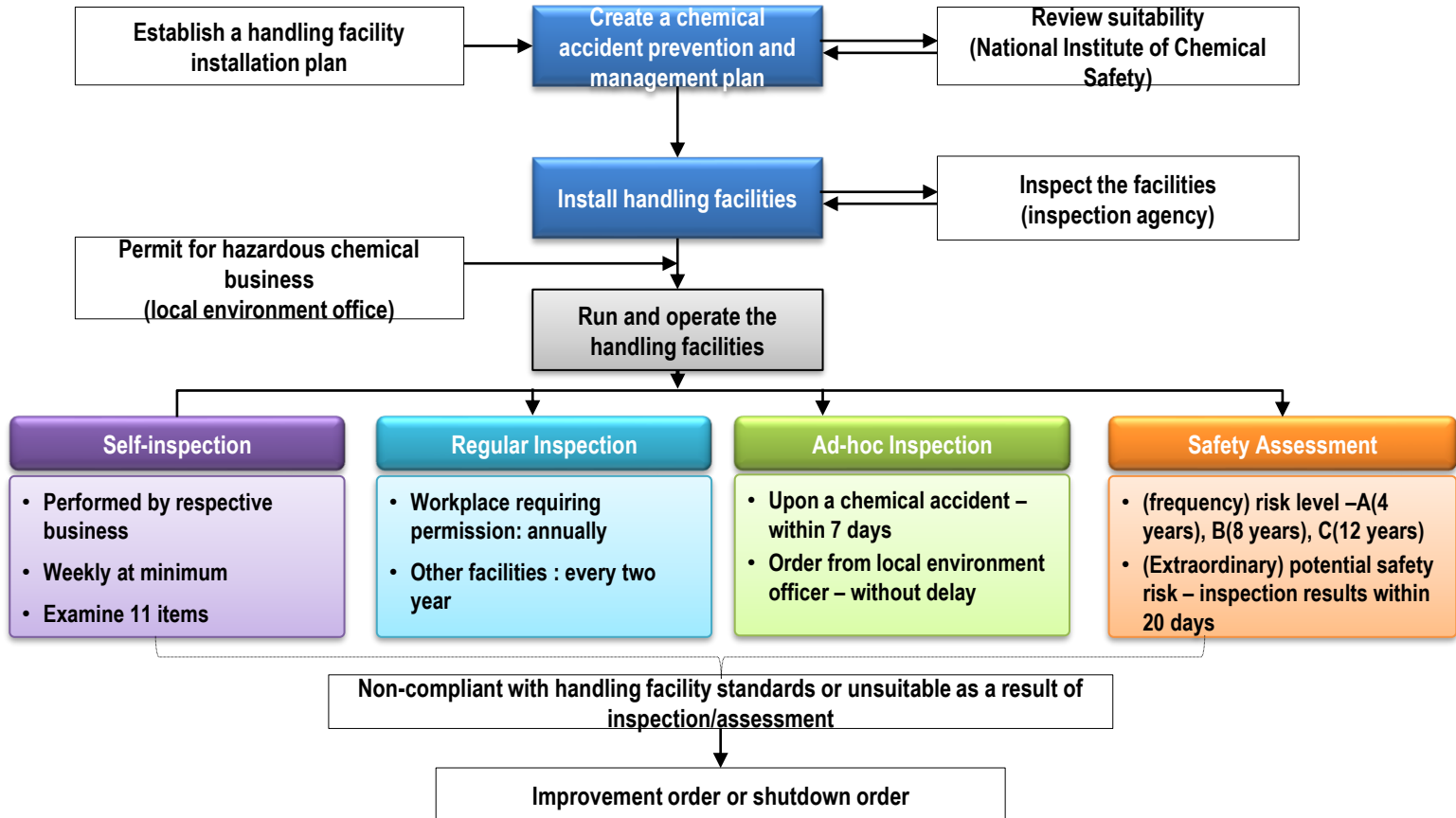
## 4. Overview of Chemical Substances Control Act

Establishing a **comprehensive accident prevention system**, including pre-operation evaluation of outside impacts on people and the environment, post-installation inspections, and supervisor appointment when obtaining permits





# 4. Overview of Chemical Substances Control Act



# 4. Overview of Chemical Substances Control Act

Provisions		Key Details
Chapter I	<b>General Provisions (Article 1-8)</b>	<ul style="list-style-type: none"> <li>▪ Purpose, definitions and scope of application</li> <li>▪ Duties of state, local governments, and business operators</li> <li>▪ Basic plans, chemical controls committee, and consultations on major policies, etc.</li> </ul>
Chapter II	<b>Statistical Surveys, Disclosures of Information on Chemicals (Article 9-12)</b>	<ul style="list-style-type: none"> <li>▪ Verification of chemicals</li> <li>▪ Statistical Surveys on chemicals, investigation of volume of chemical discharges, and discharge reduction plan</li> </ul>
Chapter III	<b>Safety Control of Hazardous Chemicals (Article 13-26)</b>	<ul style="list-style-type: none"> <li>▪ Criteria for handling hazardous chemicals, wearing of personal protection equipment</li> <li>▪ Restrictions on quantity of hazardous chemicals displayed or stored, labeling of hazardous chemicals, etc.</li> <li>▪ Import and export of hazardous chemicals, safety control on handling facilities</li> </ul>
Chapter IV	<b>Hazardous Chemical Business Operator (Article 27-38)</b>	<ul style="list-style-type: none"> <li>▪ Classification of business and business permit, exemption from permit and disqualifications for operators</li> <li>▪ Reporting on awarding of contracts for handling hazardous chemicals</li> <li>▪ Hazardous chemical supervisors and safety education</li> </ul>
Chapter V	<b>Preparation for and Response to Chemical Accidents etc. (Article 39-47)</b>	<ul style="list-style-type: none"> <li>▪ Designation of substances requiring preparation for accidents and their control standards</li> <li>▪ Reporting of accidents, on-site responses</li> </ul>
Chapter VI & VII	<b>Supplementary Provisions and Penal Provisions (Article 48-64)</b>	<ul style="list-style-type: none"> <li>▪ Establishment and operation of comprehensive chemical information system</li> <li>▪ Reporting, inspection, delegation of authority, and entrustment of affairs</li> <li>▪ Penalties, fines for negligence and joint penal provisions</li> </ul>

## II. Significant Changes

# 1. Significant Changes

## Actively enhanced regulations by incorporating feedback from the field to ensure the system operates rationally

### ✓ Handling Facility Standards

Amendment to the Chemical Substances Control Act (2015): Retrospectively applied stricter standards to facilities installed prior to the Act, causing concerns about large-scale relocations and shut down

Uniform Facility Standards: Applied consistently, regardless of handling volume or industry



Enhanced Applicability (2019): Introduced alternative facility standards, like additional detectors instead of a distance between a discharge wall and a tank (1.5-meter)



Customized Standards (2018-2022): Tailored to handling volume and specific industries, e.g., surface treatment and semiconductors

### ✓ Chemical Accident Prevention and Management Plan

Outside impact assessment report and hazard control plan are created respectively, reviewed and approved by the National Institute of Chemical Safety (NICS)



Streamlined to a chemical accident prevention and management plan (2020)

Simplified submissions by omitting redundant reports under OSHA Act, or High-pressure Gas Safety Control Act (2020)

### ✓ Workforce

License holders are recognized as technical personnel.



The NICS training completers acknowledged (2018), for businesses with fewer than 30 employees.

# 1. Significant Changes

**Improved handling facility standards to consider site conditions (effective from Jan. 2023)**

- ✓ Expanded piping standards previously only for metallic material to encompass PTFE (Teflon) lined pipes suitable for handling corrosive substances
- ✓ Exemptions granted for processes requiring the use of fire for heating or drying facilities (e.g., refining, non-ferrous metal manufacturing)
- ✓ Recognized sloshing prevention devices (baffle plates) with functions similar to partitions under the High Pressure Gas Safety Control Act, when applicable
- ✓ Aligned Outside piping protection potential standard at -0.85V or less, based on the copper sulfate electrode under the High Pressure Gas Safety Control Act

# 1. Significant Changes

**Established handling facility standards considering the characteristics of the semiconductor industry (effective from Dec. 2022)**

- Recognized internationally certified facilities with a manufacturing request form adhering to Chemical Substances Control Act standards for pipes in finished products and modular production equipment as compliant with the Act.**
- Recognized safety devices for advanced equipment as equivalent to those used in existing manufacturing and use facilities. (e.g., one detection and alarm device per facility, water collection facilities per facility, etc.)**

# 1. Significant Changes

## Expanded qualification requirements for hazardous chemical supervisors and technical personnel (effective from Oct. 2023)



### Expanded the types of hazardous chemical supervisors

(Added 12 types including surface treatment professional engineer/master technician/industrial engineer/technician, fine chemical engineer, environmental hazard management engineer, gunpowder manufacturing engineer/industrial engineer, chemical analyst engineer/technician, hazardous material master technician, gas master technician)



### Extended the validity period and broadened the qualifications for relaxed technical personnel qualification standards for small businesses with fewer than 30 employees

(Validity period: Extended from 2023 to 2028 to recognize technical personnel qualifications for those who have completed NICS' specialized training for technical personnel)

(Qualifications: surface treatment professional engineer/master technician/industrial engineer, environmental hazard management engineer, etc.)



### Adjusted the Timing of Safety Training for Those Handling Hazardous Chemicals (effective from Jan.1, 2025)

(before) 16 hours of training before handling hazardous chemicals (after) 16 hours of training before handling or 8 hours each before and after handling (completed within 3 months, and those who handle for less than 6 months are not subject to the improvement)

## **III. Future Policy Direction**



# 1. Background

Current

## Increasing Societal Burden

- **The designation of hazardous substances is continued through hazard reviews under the Chemical Registration and Evaluation Act.**



- Hazard assessment of existing chemicals
- Newly developed chemicals → hazard assessment

Challenges

## Need Differentiated Management Approach

- **One-size-fits-all approach → transition to a system considering various hazards**

## 2. Progress

Promoting the possibility of transparent policymaking based on stakeholder participation through the **chemical safety policy forum since May 2021**

- ✔ Established a transparent and open public forum planned and operated by stakeholders and the Ministry of Environment

※ The public forum is broadcast live on the Ministry of Environment's newsroom (YouTube), and discussion materials and results are publicly available on the *Nurijib* website ([chemnavi.or.kr/forum](http://chemnavi.or.kr/forum)).



## 2. Progress

**A total of 44 organizations and 201 individual stakeholders are participating (Feb. 2023)**

Korea Chamber of Commerce and Industry  
Korea Petroleum Association  
Korea Air Cleaning Association  
The Federation of Korean Industries  
The American Chamber of Commerce in Korea  
European Chamber of Commerce in Korea  
Korea Federation of SMEs  
Korea LP Gas Sale Association  
Korea Enterprises Federation  
Korea Petrochemical Industry Association  
Korea Resource Recycling Energy Mutual Aid Association  
Korea Electric Wire Industry Cooperative  
Korea Iron & Steel Organization  
Korea Print & Printing Ink Industry Cooperation  
Korea Waste Recycling Mutual Aid Association  
Korea Surface Treatment Industry Cooperative  
Korea Chemicals Management Association

National Humidifier Disinfectant Incident Network  
Gyungnam People Protecting Health and Life  
National Council of the Green Consumers Network in Korea  
Green Korea United, Daejeon Chungnam Green Korea  
Northeast Women's Environmental Network Choroksangsang  
Banolrim, People's Action for Carcinogen-Free Society  
Seosan Taeam Federation for Environmental Movement  
Andong Federation for Environmental Movement  
Women's Environmental Network, Green Korea Incheon  
Incheon Federation for Environmental Movement  
Work and Health  
Jeonnam People Protecting Health and Life  
Jeonbuk People Protecting Health and Life  
Jeonbuk Federation for Environmental Movement  
Cheongju Chungbuk Federation for Environmental Movement  
Chungnam People Protecting Health and Life  
Pyeongtaek People Protecting Health and Life  
Korean Federation for Environmental Movement  
Environmental Justice

## 2. Progress

### Discussion highlights from the chemical safety policy forum with public, industry, and government participation

<2022>

- ✓ Establish a mid- to long-term plan for chemical safety management
- ✓ Prepare a plan to rationalize the management system for designating hazardous chemicals
- ✓ Establish operating regulations for public participation in chemical safety policy
- ✓ Effectively produce, communicate, and utilize hazardous information on small quantities of new chemicals

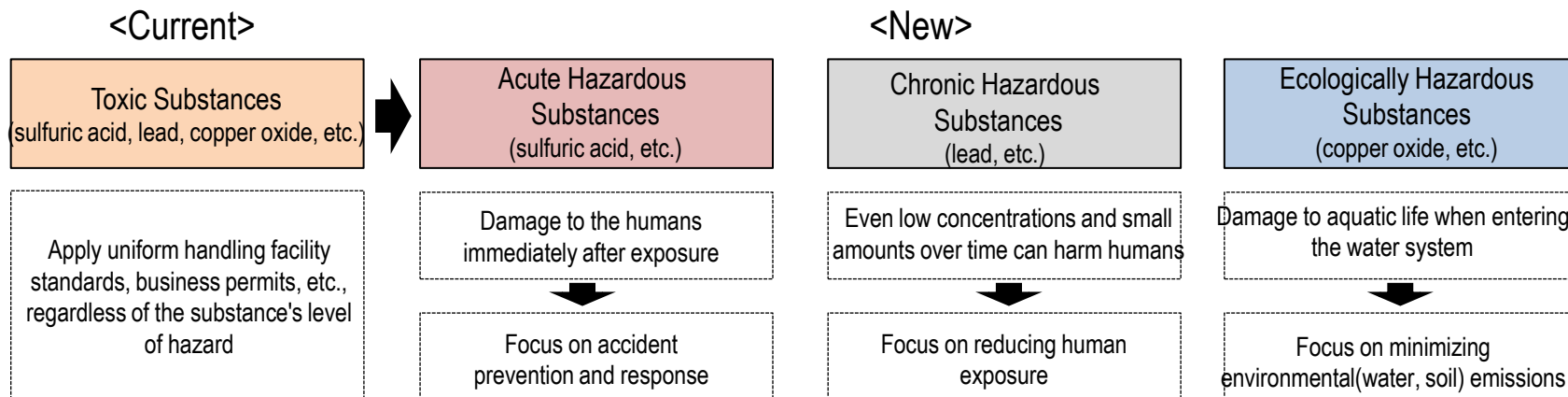
<2023>

- ✓ Establish a mid- to long-term plan for chemical safety management
- ✓ Enhance the management system for designating hazardous chemicals
- ✓ Improve the effectiveness of production, communication and utilization of hazardous information of chemicals
- ✓ Prepare a roadmap for managing chronic hazardous substances

### 3. Reorganized Hazardous Chemicals Designation Management System

Prepared in accordance with the principles of 'securing public safety,' 'rational application of regulations,' and 'strengthening communication' (Dec. 2022)

- ✓ (Designation) Designation of acute, chronic, and ecologically hazardous substances according to hazards
- ✓ (Management) Reorganization of the system, considering chemical accident prevention and response, human and environmental exposure, etc.



## 4. Public Forum Highlights (Mar.-Jun. 2023)

### Improving the frequency of regular inspections and safety assessments to account for the level of risk, such as handling volume

<Periodic Inspection Cycle Linked with Chemical Accident Prevention and Management Plan (Proposal)>

Classification		Periodic Inspection Cycle(Proposal)
UT or above	Chemical Accident Prevention and Management Plan (Group 1-A)	1 year
	Chemical Accident Prevention and Management Plan (Group 1-B, C)	2 years
Less than UT~LT or above	Chemical Accident Prevention and Management Plan (Group 2)	3 years
Less than LT~LLT or above	Chemical Accident Prevention and Management Plan (Exempted)	4 years
Less than LLT		Exempted
Shipping/Transportation Facilities (regardless of handling volume and level of risk at respective workplace)		3 years

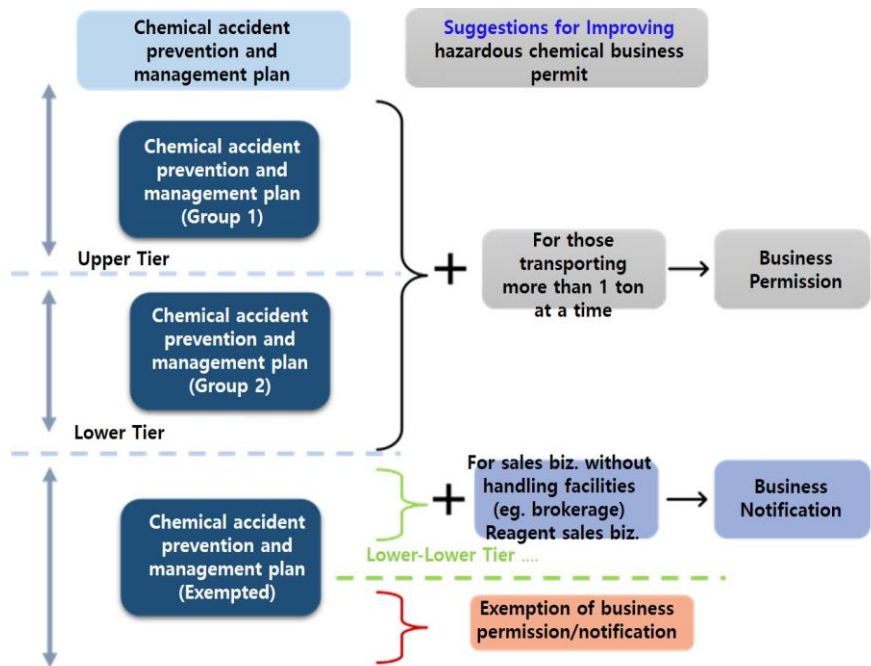
<Safety Assessment(Proposal)>

**Conducting safety assessment every fourth regular inspection for workplaces that have submitted chemical accident prevention and management plans**

※ Based on research findings from the public forum

# 4. Public Form and Meeting Highlights (Mar.-Jun.2023)

## Improving business permit management system to account for the level of risk, such as handling volume



Proposal for Improvement to Technical Personnel Appointment Requirement	
Business Permit	Business Notification
No change (Newly added) Environmental risk management engineering license & 5-year work experience	Not required to appoint

Proposal for Improvement to Hazardous Chemical Supervisor Appointment Requirement	
Business Permit	Business Notification
No change	Appointed by business (include supervisor information in the notification document)

※ Based on research findings from the public forum

## 5. Highlights of the Proposed Amended Legislation

**National Assembly passed the proposed amendments to the Act on Registration and Evaluation of Chemicals and the Chemical Substances Control Act in January 2024.**

### **Definition of Toxic Substance**

- Deleted the term toxic substance and categorized it into acute, chronic and ecologically hazardous substance to humans

### **Inspection of Handling Facilities**

- Exempted facilities handling extremely small quantities (Lower-lower tier) and facilities handling only chronic substances from regular inspections

### **Business Permission**

- Divided into permits and notifications based on the handling volume, exempting businesses handling extremely small quantities from permits and notifications



## 5. Highlights of the Proposed Amended Legislation

**National Assembly passed the proposed amendments to the Act on Registration and Evaluation of Chemicals and the Chemical Substances Control Act in Jan. 2024**

- ✔ **Exceptions to handling standards, personal protective equipment, display and storage plan, and labeling standards**
  - Exceptions apply in cases where consumers use hazardous chemicals in their daily lives
- ✔ **Restricted Substances, etc.**
  - Excluded restricted substances, prohibited substances, and substances subject to permission from the definition of hazardous substances, and obligations for chemical accident prevention and management plans, handling facility standards, business permits, etc.
  - **Restricted substances transitioned to a notification system**
    - ✘ Substances that are classified as human acute, chronic, and ecologically hazardous are required to comply with the corresponding regulatory obligations.
- ✔ **Establishment of an Overseas Representative System**
  - A person appointed by an overseas manufacturer or producer performs duties on behalf of the importer, such as tasks related to verifying chemical substances and obtaining permits for substances subject to permission.

**Thank You for Your  
Attention**

