

Per- and Polyfluoroalkyl Substances (PFAS) Management Action Plan (Approved Version)



Ministry of Environment



Ministry of Health and Welfare



Ministry of Economic Affairs



Ministry of Agriculture



Ministry of the Interior



Ministry of Finance



Ministry of Labor



Ministry of Education



Ministry of National Defense



Ocean Affairs Council



**National Science and Technology
Council**



National Health Research Institutes



**National Environmental Research
Academy**

October 2024

I. Background

A. Origins

Per- and Polyfluoroalkyl substances (PFAS) refers to a family of chemical substances with approximately 10,000 members according to the European Chemicals Agency. PFAS have unique water-repellent, oil-repellent, stain-resistant, and high thermal stability properties, making them widely used in industrial and consumer applications. Additionally, some PFAS have been confirmed to possess persistence, bioaccumulative potential, and long-range transport capabilities, causing adverse effects on wildlife and humans. Due to their persistent nature and resistance to degradation, the United Nations Environment Programme (UNEP) has included certain PFAS chemicals in the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention on Persistent Organic Pollutants) list since 2009. PFAS are also known as "Forever Chemicals."

The Stockholm Convention on Persistent Organic Pollutants continues to review and regulate these substances. From listing Perfluorooctane sulfonic acid (PFOS) in Annex B (measures must be taken with acceptable purposes or specific exemptions for restricted use) in 2009, to listing Perfluorooctanoic acid (PFOA) in 2019 and Perfluorohexane sulfonic acid (PFHxS) in 2022 in Annex A (measures must be taken to eliminate them). In addition, review procedures for long-chain Perfluorocarboxylic acids (PFCAs) were initiated in 2023.

Taiwan places great importance on persistent organic pollutants issues and has already invited cross-ministerial collaboration to establish the "National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants" (hereinafter referred to as the National Implementation Plan) in 2008. This plan is jointly implemented by the Ministry of Environment, Ministry of Health and Welfare, Ministry of Economic Affairs, Ministry of Agriculture, Ministry of Finance, and Ministry of Labor, with implementation results published on the website annually. For the PFAS chemicals listed in the aforementioned Convention's control list, Taiwan has simultaneously implemented source control and regularly confirms implementation results from various ministries through the Convention plan. Since PFAS includes over 10,000 members, the Convention has progressively regulated and actively assessed their control. However, due to their large quantity and impact on the environment and humans, in recent years the international community has, in addition to following the Convention, successively invested in research or discussions to evaluate the feasibility of strengthening PFAS regulation. To collect and evaluate information on PFAS beyond the Convention early on, we are implementing the National Implementation Plan to align with the

Convention while also extending a dedicated chapter to promote this plan.

B. Substance Characteristics and Domestic and International Management Status

(1) PFAS Definition, Characteristics and Uses

The Organisation for Economic Cooperation and Development (OECD) defined PFAS in 2021 as fluorinated substances containing at least one perfluorinated methyl or methylene carbon atom (i.e., carbon atoms without any H/Cl/Br/I atoms). In other words, with few exceptions, any chemical substance containing at least one perfluorinated methyl (-CF₃) or perfluorinated methylene (-CF₂-) is a PFAS.

PFAS have a fluorinated carbon chain structure with one end being hydrophobic and the other end being hydrophilic, giving them water-repellent and oil-repellent properties. They can be used as surface coating agents, surfactants, and additives. Due to the strong bond between carbon and fluorine atoms, most PFAS substances are chemically stable synthetic substances that can persist in the natural environment for long periods. The length of the fluorinated carbon chain leads to different physicochemical properties, affecting the behavior of substances in the environment and organisms, as well as their bioaccumulative potential and ecotoxicity.

Due to the excellent physicochemical properties of PFAS, their applications are very extensive. According to Convention data, PFOS and its salts and perfluorooctane sulfonyl fluoride (PFOSF) are used in fire extinguisher foams, carpets, leather products/clothing, textiles/padding materials, paper and packaging materials, coatings and coating additives, industrial and household cleaners, pesticides and insecticides. PFOA and its salts and related compounds are used in electronics, textiles and leather, non-stick cookware, paper and cardboard (e.g., food packaging), firefighting foams, cleaners, paints, and wetting agents. PFHxS and its salts and related compounds are widely used in the production of fluoropolymer surfactants and water and stain-resistant coatings for carpets, paper, and textiles, as well as in firefighting foams.

(2) International PFAS Management Status

For different countries, management measures for PFAS include source control (such as gradually reducing and restricting the production and use of PFAS raw materials), strengthening product management (such as food contact materials, textiles, firefighting foams,

and cosmetics), and investing relevant resources in research, investigation, and pollution remediation.

Regarding the management status in the European Union, the United States, and Japan, the summary is as follows, with detailed content supplemented in the appendix.

1. Source Management

(1) European Union - Persistent Organic Pollutants (POPs) Regulations

On June 25, 2019, the EU issued Regulation (EU) 2019/1021, replacing the original regulation Regulation (EC) No 850/2004, effective from July 15, 2019. This regulation manages PFOS and its derivatives, which may not be manufactured, supplied to the market, or used in the form of substances, mixtures, or products unless given specific exemptions.

On April 8, 2020, Regulation (EU) 2020/784 was issued, amending Regulation (EU) 2019/1021 to include PFOA and its salts and PFOA-related compounds, effective from July 4, 2020. Later that year, on August 18, Regulation (EU) 2020/1203 was issued, amending the PFOS exemption provisions, effective from September 7, 2020.

Additionally, to prevent PFHxS from becoming a substitute for PFOA after the restriction on PFOA took effect, on August 8, 2023, the EU issued Regulation (EU) 2023/1608, including PFHxS and its salts and related compounds in the management.

(2) United States - Toxic Substances Control Act (TSCA)

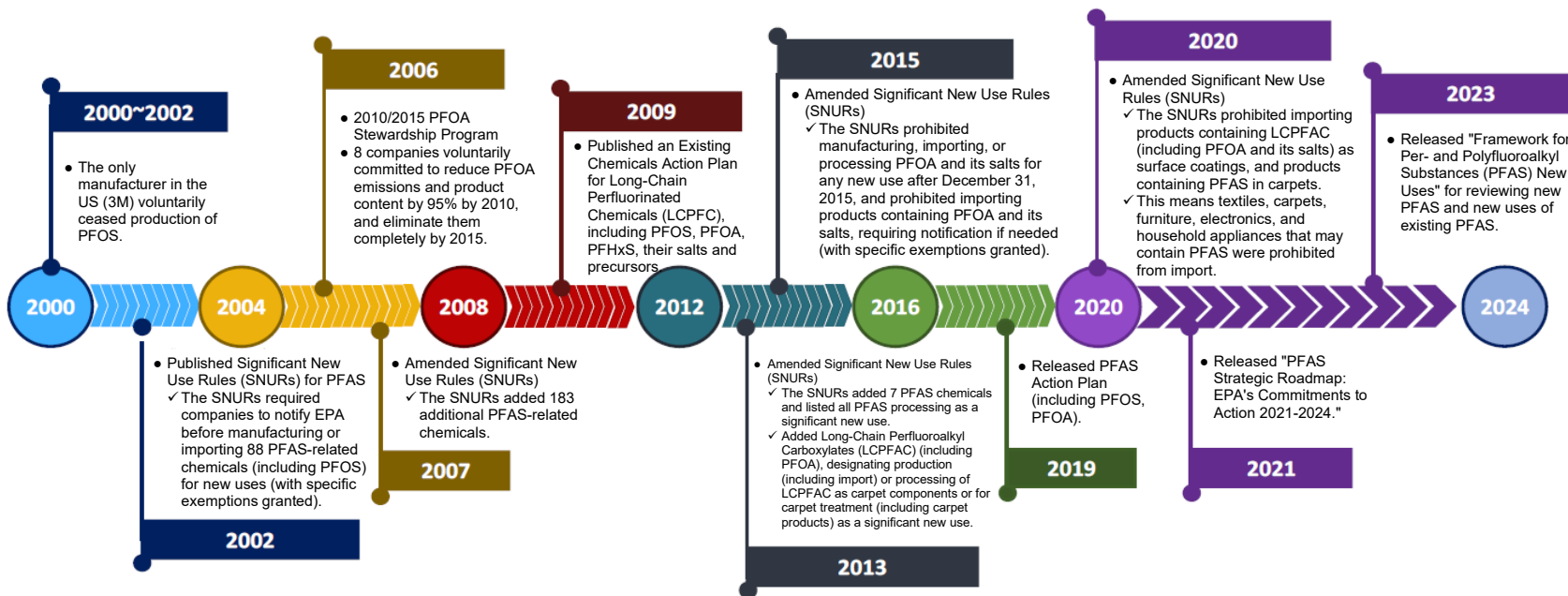
The US EPA has listed PFOS, PFOA, and PFHxS on the chemical substance inventory (TSCA Inventory) under the Toxic Substances Control Act (TSCA).

Key management highlights over the years in the US, as shown in Figure 1, include:

1. From 2000 to 2002, US manufacturer 3M voluntarily stopped producing PFOS.
2. From 2002 to 2020, rolling amendments to the "Significant New Use Rules (SNURs)" were made based on TSCA for related management.
3. In 2006, the US EPA launched the 2010/2015 PFOA Stewardship Program, where eight companies including 3M/Dyneon voluntarily committed to reducing PFOA emissions

and its content in products by 95% by 2010, and completely eliminating it by 2015 (based on 2000 levels).

4. In February 2019, the US EPA announced the PFAS Action Plan.
5. The 2020 National Defense Authorization Act (NDAA) requires the US Department of Defense to phase out all aqueous film-forming foams used to extinguish fuel fires at military facilities by 2024.
6. In 2021, the "PFAS Strategic Roadmap" was released. In June 2023, the "Framework for New Uses of Per- and Polyfluoroalkyl Substances (PFAS)" was released.



Reference: Long-Chain Perfluorinated Chemicals: Risk Reduction Approaches, U.S. Environmental Protection Agency, 2014

Figure 1: Timeline of PFAS Substance Management in the United States

(3) Japan - Chemical Substances Control Law (CSCL)

PFOS and PFOA and their salts are listed as "Class I Specified Chemical Substances," adopting a manufacturing and import permit system. Before manufacturing or importing, an application must be submitted to the Ministry of Economy, Trade and Industry for approval, but manufacturing and import are essentially prohibited (except for testing or research purposes). Import of designated products containing PFOS and PFOA and their salts is not allowed.

On December 1, 2023, the CSCL was amended to include Perfluorohexane sulfonic acid (PFHxS) or its isomers or salts (limited to substances with a branched structure and six carbon atoms) as Class I Specified Chemical Substances (effective from February 1, 2024).

2. Environmental Protection Management

(1) European Union

A. Persistent Organic Pollutants Regulation (Regulation (EU) 2019/1021)

Set content standards for PFOS and its derivatives, PFOA, and PFHxS in waste. When the content exceeds the specified "minimum management threshold," waste producers and holders must dispose of or recycle according to regulations.

B. Drinking Water Directive (Drinking Water Directive, 98/83/EC)

On December 16, 2020, amendment (EU) 2020/2184 to the Drinking Water Directive was adopted, establishing limits for Per- and Polyfluoroalkyl Substances (PFAS). The total of individual PFAS (PFAS Total) is set at 0.5 µg/L, and the Sum of PFAS is set at 0.1 µg/L, applicable only to measurements using "analytical methods for the 20 PFAS listed in the regulation."

(2) United States

A. Safe Drinking Water Act (SDWA)

On April 10, 2024, the US EPA issued national drinking water standards for six PFAS.

B. Emergency Planning and Community Right-to-Know Act (EPCRA)

Establish the Toxics Release Inventory (TRI), managing releases from operational sites across various media (including air, water, and waste) and disclosing to the public. Facilities must report annually to the government on releases, recycling, or treatment quantities involving substances on the list.

(3) Japan

Drinking Water Quality Management

Divided into three main parts: statutory items, water quality target management items, and items requiring testing. PFOS and PFOA are listed as water quality target management items with a provisional target value for their sum set at 0.00005 mg/L or less. Items listed as water quality target management items indicate substances that may be detected in drinking water, with non-mandatory target values. PFHxS is listed as an item requiring testing.

3. Commercially Available Food and Food Contact Materials, Products, and Human Health Management

(1) European Union

A. Food

On August 24, 2022, Regulation (EU) 2022/1431 on monitoring Per- and Polyfluoroalkyl Substances in food was adopted. EU member states, in cooperation with food business operators, should monitor PFOA, PFOS, PFHxS, and PFNA (Perfluorononanoic Acid) in food from 2022 to 2025.

B. Food Contact Materials

On May 27, 2020, the Danish Ministry of Environment and Food issued Order No. 681 "Executive Order on Food Contact Materials and Penalties for Breaching EU Regulations," prohibiting the use of PFAS (including PFOS, PFOA, and PFHxS) chemicals in paper and paperboard food contact materials and products, effective from July 1, 2020.

On April 26, 2022, the Dutch Ministry of Public Health, Welfare and Sport issued an amendment to the Commodities Act on packaging and consumer goods (Warenwetregeling verpakkingen en gebruiksartikelen), stipulating that from July 1, 2022, PFOA, PFOS, PFHxS, and PFNA shall not be used in the manufacture of food contact materials and must not be present in food contact materials.

C. Human Health Management - Tolerable Weekly Intake for PFOA and PFOS

The European Food Safety Authority (EFSA) published a health risk assessment of PFAS in food in 2020, establishing a Tolerable Weekly Intake (TWI) for the sum of PFOA, PFOS, PFHxS, and PFNA at 4.4 ng/kg body weight/week, revising the TWI set in 2018 for PFOA and PFOS, which were 6 and 13 ng/kg bw/week respectively.

(2) United States

A. Food Packaging Materials

- a. The US Senate passed the Keep Food Containers Safe from PFAS Act on June 15, 2022, prohibiting the sale of any food packaging containing PFAS from January 1, 2024.
- b. In August 2018, San Francisco approved the amendment to Ordinance No. 201-18, revising current regulations on single-use food plastic products and toxic chemicals in individual packaging waste reduction, prohibiting the use of single-use food contact materials containing PFAS (including PFOS, PFOA, and PFHxS), with the new regulations effective from January 1, 2020. Single-use food contact items under this ordinance include bowls, plates, trays, cups, and lids.
- c. On March 21, 2018, Washington State enacted the ESHB2658 bill, restricting the use of PFAS (including PFOS, PFOA, and PFHxS) in food packaging. As of February 2023, PFAS is prohibited in four types of food packaging, and from May 1, 2024, food packaging manufacturers, distributors, and retailers shall not manufacture, sell, or distribute five types of food packaging containing PFAS.

B. Cosmetics

On June 17, 2021, the US House of Representatives introduced the "Personal Care Products Safety Act, S. 2100," which includes prohibiting the intentional addition of Per- and Polyfluoroalkyl Substances (PFAS) in cosmetics and requires the FDA to issue proposed rules within six months of the enactment of the legislation. This act has been passed.

(3) Domestic Regulatory Management

1. Source Operation Management

Taiwan manages operations in accordance with the Toxic and Concerned Chemical Substances Control Act and the Environmental Agents Control Act, which aligns with international convention management. The explanations are as follows:

- (1) Toxic Chemical Substance Management: In 2010 and 2018, following the Stockholm Convention management trends, Taiwan announced PFOS and its salts (Perfluorooctane sulfonic acid lithium salt, Perfluorooctane sulfonyl fluoride PFOSF) and PFOA as toxic chemical substances. As for PFHxS, the Convention has just resolved to manage it in 2022 (effective from November 16, 2023). The Chemicals Administration announced its pre-listing as a toxic chemical substance on July 11, 2023, and on April 24, 2024,

officially announced its addition as a Category 1 toxic chemical substance and established operational management regulations. At the same time, in response to the expiration of the permissible use period under the Stockholm Convention for PFOS, PFOS-Li, PFOSF, and PFOA in foam firefighting equipment for Class B fires, the permissible uses were deleted accordingly. In response to the Stockholm Convention's strengthened regulation of perfluoroalkyl compounds, the regulated concentrations for PFOS, PFOS-Li, PFOSF, and PFOA were adjusted to total concentration. For Taiwan's history of toxic substance listing, please refer to Figure 2, and for the permissible uses, see Table 1.

(2) Environmental Agent Management: In 2010, Taiwan announced PFOS and its salts and PFOSF as prohibited ingredients in environmental agents under the Environmental Agents Control Act.

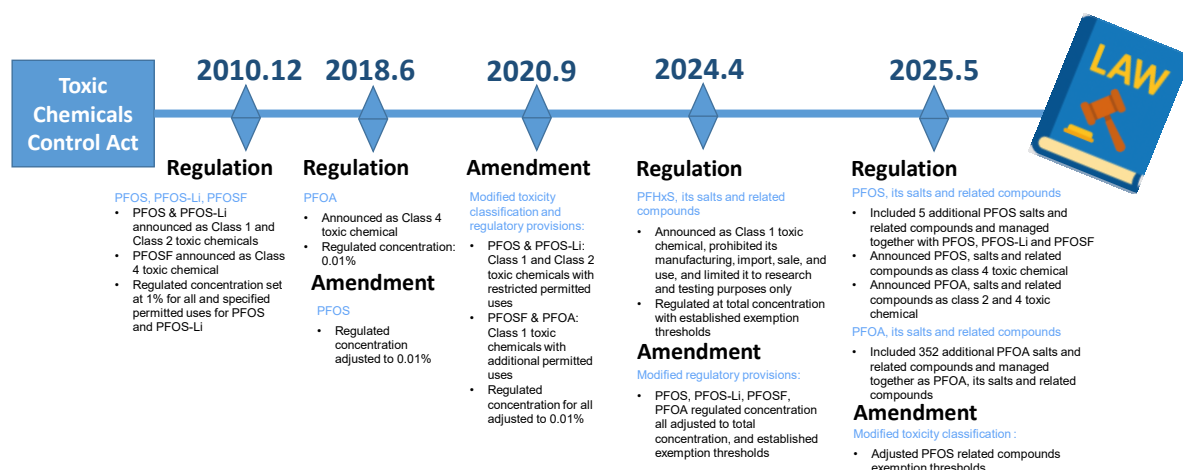


Figure 2: Taiwan's history of managing PFAS-related substances under the Toxic Chemical Substances Control Act

Table 1: Taiwan's toxic substance control status

| Substance | Regulated Concentration (Note 1) | Classification Operational Quantity (kg) | Toxicity Classification (Note 2) | Permitted Uses |
|--|----------------------------------|--|----------------------------------|--|
| Perfluorooctane sulfonic acid (PFOS), its salts and PFOS-related compounds | Total concentration | 50 | 1, 2, 4 | 1. Research, testing, education. 2. Use in closed systems for hard metal electroplating. |
| Perfluorooctanoic acid(PFOA),its salts and PFOA-related compounds | Total concentration | 50 | 1, 2, 4 | 1. Research, testing, education. 2. Lithography of etching processes in semiconductor manufacturing. 3. Manufacturing of photographic film coatings. 4. Manufacturing of oil-repellent and water-repellent textile products for labor use. 5. Manufacturing of polytetrafluoroethylene (PTFE) and polyvinylidene fluoride (PVDF) membranes for industrial heat exchangers and industrial sealants. 6. Manufacturing of fluorinated ethylene propylene (FEP) for high-voltage wires and cables. 7. Manufacturing of O-rings, V-belts, and plastic parts for automotive interiors. |

| Substance | Regulated Concentration (Note 1) | Classification Operational Quantity (kg) | Toxicity Classification (Note 2) | Permitted Uses |
|--|----------------------------------|--|----------------------------------|-------------------------------|
| Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds | Total concentration | 50 | 1 | Research, testing, education. |

Source: Toxic and Concerned Chemical Substances Control Act

Note 1: Substances or mixtures containing per- and polyfluoroalkyl substances that meet the following concentration requirements and are not intentionally added are not regulated under this Act:

(1) The total concentration of PFOS, its salts and PFOS-related compounds does not exceed 10 mg/kg.

(2) PFOA, its salts individually does not exceed 0.025 mg/kg.

(3) The total concentration of PFOA-related compounds do not exceed 0.025 mg/kg.

(4) PFHxS and its salts individually do not exceed 0.025 mg/kg.

(5) The total concentration of PFHxS-related compounds does not exceed 1 mg/kg.

Note 2: Toxicity classification: "1" indicates Class 1 toxic chemical substances, "2" indicates Class 2 toxic chemical substances, "4" indicates Class 4 toxic chemical substances.

2. Product Management

For direct regulations on products, such as restrictions on use or sales of products containing these substances, Taiwan currently implements the CNS15290 "Safety Requirements for Textiles (General Requirements)" national standard through the Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs, and the "Inspection Requirements for Infant and Children's Clothing and Accessories, Bedding, Towels, Underwear, Swimwear, Socks, Ready-made Clothing, and Sweaters." These regulations require manufacturers (including importers) to test domestic or imported textiles subject to inspection for PFOS and comply with the limit value of 1 µg/m² before the products can be distributed in the domestic market. For textiles containing PFOS, through cooperation between the Ministry of Environment and the Ministry of Economic Affairs, comprehensive management is implemented from the source operation, sales, and imports.

3. Environmental Survey Status

Regarding environmental surveys, results related to PFOS, PFOA, and PFHxS in Taiwan, as well as testing results for environmental media, commercial foods, food containers and packaging, agricultural products, and human blood, are detailed in the appendix. Environmental survey categories include wetland organisms and water bodies, river water bodies and organisms, river sediments, industrial effluents, water treatment plants, high mountain lakes and streams, environmental soil, and groundwater. Other surveys such as commercial foods, food containers and packaging, agricultural products, and human blood have been continuously monitored since 2010.

II. Objectives

The PFAS Management Action Plan refers to convention regulations and international chemical management norms, and based on human, biological, and environmental monitoring and risk assessment planning, establishes the following five major objectives:

1. Source Management: Implement source management to reduce or eliminate use.
2. Distribution Control: Monitor results in the environment, biological matrices, food, and commercial products.
3. International Alignment: Comply with international management trends and engage in international exchanges.
4. Industrial Innovation: Encourage industries to voluntarily establish measures that exceed regulatory requirements or reduce use.
5. Risk Communication: Strengthen inter-ministerial cooperation and enhance education, promotion, and risk communication.

III. Implementation Strategies and Promotion Team Members

1. Implementation Strategies

(1) Ministries and departments strengthen execution and amend relevant regulations according to their responsibilities

Relevant regulatory authorities for environment, health, economy, and agriculture shall, based on international practices and Taiwan's current situation, review and amend relevant regulations according to their responsibilities, and establish relevant management mechanisms to control, reduce, and prevent PFAS hazards.

(2) Develop testing methods, monitor environment, human body, biological matrices, and products

In response to various media monitoring, biological monitoring, and the formulation of related control standards, develop corresponding sampling procedures, analytical methods, and improve testing capabilities, and conduct monitoring on food, products, environment, and human health.

(3) Follow international trends, promote related research or development

Relevant regulatory authorities shall, according to their responsibilities, promote related research or development on issues related to food, products, and environment and human health, develop technologies or practices for control, substitution, treatment, improvement, etc., and evaluate their promotion.

(4) Promote voluntary industrial actions to reduce the use of PFAS

Encourage voluntary industry commitments, strengthen PFAS-related research, and reduce PFAS hazard risks through process improvements, reduction of use, or use of alternatives.

(5) Strengthen cross-ministerial cooperation and enhance communication with all stakeholders

Establish a cross-ministerial platform to strengthen communication, coordination, and integration, organize related activities, and plan communication materials to educate and promote correct risk knowledge to all stakeholders.

2. Promotion Team Members

(1) The Ministry of Environment serves as the secretariat, responsible for convening related meetings and compiling results.

(2) Cross-ministerial promotion team members include:

1. Ministry of Environment: Department of Atmospheric Environment, Department of Water Quality Protection, Department of Planning, Department of Monitoring and Information Management, Environmental Management Administration, Resource Circulation Administration, Chemicals Administration, National Environmental Research Academy.
2. Ministry of Health and Welfare: Food and Drug Administration, Health Promotion Administration.
3. Ministry of Economic Affairs: Bureau of Standards, Metrology and Inspection, Industrial Development Administration, International Trade Administration.
4. Ministry of Agriculture: Animal and Plant Health Inspection Agency, Department of Animal Husbandry, Agriculture and Food Agency, Fisheries Agency, Agricultural Chemicals Research Institute.
5. Ministry of the Interior: National Fire Agency, National Land Management Agency.
6. Ministry of Finance: Customs Administration.
7. Ministry of Labor: Occupational Safety and Health Administration.
8. Ocean Affairs Council: Ocean Conservation Administration.
9. Ministry of Education: Department of Information and Technology Education, K-12 Education Administration.
10. Ministry of National Defense.
11. National Science and Technology Council.
12. National Health Research Institutes.

IV. Division of Responsibilities

Due to the wide range of uses, distribution, and media covered by PFAS, relevant competent authorities need to gradually implement control strategies according to their responsibilities. This plan defines the competent authorities and their responsibilities related to PFAS in Taiwan's environment and daily life as follows (see Table 2):

1. Ministry of Environment: Air pollution control and air quality management, drinking water and water quality protection, waste management, eco-labeling, soil and groundwater contamination remediation, eco-labeling, environmental inspection, toxic chemical substance management,

inspection and control, investigation of concentrations in environmental media to understand distribution patterns.

2. Ministry of Health and Welfare: Food safety, management of food utensils, containers and packaging, cosmetics management, exposure assessment and health risk communication, food safety and hygiene, inspection of pharmaceuticals, medical devices, cosmetics, and human blood.
3. Ministry of Economic Affairs: Management of products (such as textiles, consumer goods, etc.), development and promotion of alternative technologies; cooperation with commodity authorities to announce PFAS import and export regulations.
4. Ministry of Agriculture: Management of agricultural, livestock, and aquaculture products (including marine fisheries) and feed, investigation of agricultural environmental concentrations and internal concentrations in agricultural workers at risk of exposure.
5. Ministry of the Interior: Management of firefighting foam.
6. Ministry of Finance: Cooperate with commodity authorities for border control of import and export goods.
7. Ministry of Labor: Strengthen protection of worker safety and health, enhance worker awareness of chemical hazards.
8. Ocean Affairs Council: Marine pollution prevention and marine protection.
9. Ministry of Education: Educational promotion in schools.
10. Ministry of National Defense: Conduct soil and groundwater pollution prevention and remediation at military sites in accordance with the "Soil and Groundwater Pollution Remediation Act".
11. National Science and Technology Council: Review science and technology projects to develop relevant technologies or fill knowledge gaps.
12. National Health Research Institutes: Implement the Taiwan Human Biomonitoring (THBM) program.

Table 2: Division of Responsibilities in Taiwan's PFAS Management Action Plan Task Force

| Work Items | Division of Responsibilities among Ministries | Executing Agencies (Units) |
|---|--|--|
| 1. Ministries review and amend relevant regulations according to their responsibilities | Ministry of Environment 1. Collect international PFAS-related control information, analyze and propose control recommendations. 2. Promote source management and disaster response management of toxic chemicals according to the "Toxic and Concerned Chemical Substances Management Act". 3. Conduct PFAS operation control promotion for manufacturers, understand operation methods, substance types and quantities, manage in phases to gradually phase out. 4. In response to international trends, conduct domestic PFAS-related controls according to main responsibilities, review and amend relevant regulations, or assess the feasibility of including PFAS in relevant control standards. | Chemicals Administration Chemicals Administration Chemicals Administration Ministry of Environment, Chemicals Administration, Department of Atmospheric |

| Work Items | Division of Responsibilities among Ministries | Executing Agencies (Units) |
|------------|---|---|
| | <p>5. Review and amend eco-label product specifications based on various authorities' PFAS prohibition (restriction) regulations.</p> <p>6. Establish and evaluate environmental governance strategies and models, including development and research of environmental testing methods, amendment of standard environmental testing methods, and improvement of environmental testing capabilities.</p> <p>Ministry of Health and Welfare</p> <p>1. Continue to collect domestic and international PFAS-related research and control information to serve as evaluation basis for adjusting Taiwan's relevant management policies.</p> <p>2. Collect foreign PFAS health management-related data for domestic health management.</p> <p>Ministry of Economic Affairs</p> <p>1. In response to international trends, review or evaluate the establishment and revision of national standard limits, and the feasibility of testing and managing products containing PFAS</p> <p>2. Research administrative measures related to PFAS pollution prevention guidance, alternative product development and application.</p> <p>3. Forward the PFAS management action plan's controlled substance inventory to industry associations to assess and develop response measures.</p> <p>4. Cooperate with commodity authorities' relevant laws to announce PFAS import and export regulations.</p> <p>Ministry of Agriculture</p> <p>1. In response to international trends, conduct domestic PFAS-related controls according to main responsibilities.</p> <p>2. Provide guidance for agricultural production, monitor agricultural product quality.</p> <p>3. Conduct monitoring and management of PFAS in aquatic products and aquatic feed according to relevant validation methods and standards established by the Food and Drug Administration.</p> <p>4. Control agricultural product residues, provide technical services, and establish various testing methods and evaluation standards for monitoring PFAS substances in the agricultural environment.</p> <p>Ministry of the Interior</p> | <p>Environment, Department of Water Quality Protection, Resource Circulation Administration (Recycling Management Fund Council), Environmental Management Administration (Soil Pollution and Groundwater Pollution Remediation Fund Council) Department of Planning National Environmental Research Academy</p> <p>Ministry of Health and Welfare</p> <p>Ministry of Health and Welfare</p> <p>Bureau of Standards, Metrology and Inspection Industrial Development Administration</p> <p>Industrial Development Administration International Trade Administration, Ministry of Economic Affairs</p> <p>Animal and Plant Health Inspection Agency Agriculture and Food Agency Fisheries Agency</p> <p>Agricultural Chemicals Research Institute</p> <p>National Fire Agency</p> |

| Work Items | Division of Responsibilities among Ministries | Executing Agencies (Units) |
|--|--|---|
| | <p>1. Investigate the current status and use of PFAS-containing firefighting foam.</p> <p>2. In response to international trends, manage domestic PFAS according to announced controlled toxic chemical substances.</p> <p>Ministry of Finance Cooperate with various authorities to implement border control of import and export goods according to the "Customs Cooperation with Import and Export Trade Management Regulations."</p> <p>Ministry of Labor In response to international trends, strengthen worker safety, health prevention, and hazard awareness related to PFAS according to main responsibilities.</p> <p>Ocean Affairs Council In response to international trends, review and amend relevant regulations according to main responsibilities, or assess the feasibility of including PFAS in relevant control standards.</p> | <p>Customs Administration</p> <p>Occupational Safety and Health Administration</p> <p>Ocean Conservation Administration</p> |
| <p>2. Develop testing methods, monitor environment, human body, biological matrices and products</p> | <p>Ministry of Environment</p> <ol style="list-style-type: none"> 1. Sample products on the market (including eco-labeled products) for PFAS content. 2. Conduct domestic river sediment and fish environmental distribution surveys. 3. Conduct environmental water body surveys. <ol style="list-style-type: none"> 4. Conduct domestic drinking water surveys. 5. Conduct fixed pollution source stack emissions and environmental air quality surveys. 6. Conduct inspection and management of environmental pollution behaviors. 7. Conduct soil and groundwater pollution potential surveys, improvement and remediation work. 8. Conduct surveys of effluent concentrations from industries. <p>Ministry of Health and Welfare</p> <ol style="list-style-type: none"> 1. Develop and research relevant testing methods according to management and monitoring needs to improve detection capabilities. 2. Conduct surveys and assessments of PFAS content in food and food containers or packaging according to management and assessment needs. 3. Compile international PFAS toxicology data and international research developments, conduct domestic human biomonitoring surveys (e.g., blood concentration background surveys), establish long-term baseline monitoring data of PFAS concentrations in domestic human bodies, and assess human health risks. <p>Ministry of Economic Affairs</p> | <p>Department of Planning Chemicals Administration Department of Water Quality Protection, Department of Monitoring and Information Management Department of Water Quality Protection Department of Atmospheric Environment Environmental Management Administration Environmental Management Administration (Soil Pollution and Groundwater Pollution Remediation Fund Council) Department of Water Quality Protection</p> <p>Food and Drug Administration</p> <p>Food and Drug Administration</p> <p>National Health Research Institutes</p> |

| Work Items | Division of Responsibilities among Ministries | Executing Agencies (Units) |
|---|---|---|
| | <p>Evaluate the feasibility of managing products containing PFAS, and assess testing of products containing PFAS after national standards are revised.</p> <p>Ministry of Agriculture</p> <ol style="list-style-type: none"> In accordance with international trends, conduct sampling and analysis of agricultural, fishery, livestock products and feed when appropriate. Conduct monitoring and management of PFAS in aquatic products and aquatic feed according to relevant validation methods and standards established by the Food and Drug Administration. <p>Ocean Affairs Council Conduct marine water quality surveys or monitoring.</p> <p>Ministry of National Defense Conduct soil and groundwater pollution prevention and remediation at military sites in accordance with the "Soil and Groundwater Pollution Remediation Act".</p> | <p>Bureau of Standards, Metrology and Inspection</p> <p>Department of Animal Husbandry, Agriculture and Food Agency, Fisheries Agency, Agricultural Chemicals Research Institute Animal and Plant Health Inspection Agency</p> <p>Ocean Conservation Administration</p> <p>Ministry of National Defense</p> |
| <p>3. Follow international trends, promote related research or development; promote industry voluntary actions to reduce PFAS use</p> | <p>Ministry of Environment</p> <ol style="list-style-type: none"> Integrate and establish a national-level PFAS database as a foundation for PFAS comprehensive assessment, control, and health risk assessment. Conduct research on PFAS wastewater discharge, waste treatment control technologies, and soil and groundwater pollution remediation. Develop PFAS detection technologies. <p>Ministry of Health and Welfare</p> <ol style="list-style-type: none"> Conduct health risk assessments of domestic PFAS exposure to increase public health risk awareness. Encourage alternative research and development in food packaging materials-related industries. <p>Ministry of Economic Affairs Research administrative measures related to PFAS pollution prevention guidance, alternative product development and application.</p> <p>National Science and Technology Council Review science and technology projects to develop relevant technologies or fill knowledge gaps.</p> | <p>Chemicals Administration</p> <p>Environmental Management Administration (Soil Pollution and Groundwater Pollution Remediation Fund Council), Department of Water Quality Protection, Resource Circulation Administration National Environmental Research Academy</p> <p>National Health Research Institutes Food and Drug Administration</p> <p>Industrial Development Administration</p> <p>National Science and Technology Council</p> |
| <p>4. Strengthen inter-ministerial cooperation, enhance communication with stakeholders</p> | <p>Ministry of Environment</p> <ol style="list-style-type: none"> Conduct promotional activities according to responsibilities to strengthen public awareness of PFAS, communicate with media and the public in a timely manner to reduce public concerns. Promptly publish the latest information on eco-label product specifications on the Ministry of Environment's Net Zero Green Life website for public browsing and downloading. | <p>Department of Planning, Chemicals Administration</p> <p>Department of Planning</p> |

| Work Items | Division of Responsibilities among Ministries | Executing Agencies (Units) |
|------------|---|---|
| | <p>Ministry of Health and Welfare Strengthen public awareness of PFAS substances according to responsibilities, communicate with media and the public in a timely manner to reduce public exposure.</p> <p>Ministry of Economic Affairs Communicate with and educate the public about PFAS test results for relevant products when appropriate.</p> <p>Ministry of Agriculture Communicate with and educate farmers and the public when appropriate.</p> <p>Ministry of the Interior Strengthen education for firefighters on the use of firefighting foam according to responsibilities.</p> <p>Ministry of Labor Educate workers about safety and health protection and chemical hazard awareness.</p> <p>Ocean Affairs Council Strengthen promotion according to responsibilities, communicate with the public when appropriate.</p> <p>Ministry of Education Assist relevant departments in conducting PFAS knowledge-related educational promotion in schools.</p> | <p>Ministry of Health and Welfare</p> <p>Bureau of Standards, Metrology and Inspection</p> <p>Animal and Plant Health Inspection Agency, Department of Animal Husbandry, Agriculture and Food Agency</p> <p>National Fire Agency</p> <p>Occupational Safety and Health Administration</p> <p>Ocean Conservation Administration</p> <p>Department of Information and Technology Education, K-12 Education Administration</p> |

V. Expected Benefits

1. Extend Taiwan's cross-ministerial cooperation to promote domestic PFAS control mechanisms, strengthen communication and coordination, coordinate ministries to plan and promote relevant control strategies and regulations according to their responsibilities and this plan, work together to improve implementation effectiveness, and protect the environment and public health.
2. Conduct background sampling and monitoring of food, products, etc., monitor the environment and human health, understand the concentration and distribution of PFAS in various media in Taiwan's environment, and plan relevant management practices to reduce the risk of contact hazards.
3. Keep pace with international developments by promoting emission reduction, control and alternative technology development and application, encouraging industry participation, promoting industry self-regulation and voluntary measures that exceed regulatory requirements while reducing use, working together to accelerate achievement of plan objectives.
4. Reinforce education, promotion, and risk communication to help all sectors acquire correct knowledge, reduce concerns, build management consensus, and combine the strength of all sectors to improve public health.

VI. Funding Sources

The funds required to implement this plan shall be supported by the annual budgets of the relevant ministries and task force members. Research, monitoring, and other related expenses for each unit shall be separately applied for by each unit.

VII. Control and Evaluation

1. This task force shall meet at least once a year and from time to time, as appropriate, to discuss and coordinate the overall promotion strategy of this plan.
2. This task force shall add new management items that meet international standards in a rolling manner according to international developments.
3. Each year, the convening agency shall track and compile the implementation results of each member of the task force from relevant ministries, convene a task force meeting, and report to the Executive Yuan for approval.