Content

Title：	Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste Ch
Date：	2022.02.16
Legislative：	Original 39 articles promulgated by Environmental Protection Administration order on May 8, 1989 Revised and 54 articles promulgated by Environmental Protection Administration order on July 19, 1995 Revisions promulgated by Environmental Protection Administration order on August 6, 1997 Article 51 revised and promulgated by Environmental Protection Administration order on October 15, 1997 Articles 3, 19 and 20 revised and promulgated by Environmental Protection Administration order on January 20, 1999 Article 49-1 revised and promulgated by Environmental Protection Administration order on May 12, 1999 Revised and promulgated by Environmental Protection Administration order on June 29, 1999 Revised and 40 articles promulgated by Environmental Protection Administration order on September 25, 2002 Article 23-1 revised and promulgated by Environmental Protection Administration order on June 18, 2003 Article 37 revised and promulgated by Environmental Protection Administration order on December 31, 2003 Article 17 revised and promulgated by Environmental Protection Administration order on October 20, 2005 Article 17 revised and promulgated by Environmental Protection Administration order on January 3, 2006 Entire 46 Articles revised and promulgated by Environmental Protection Administration order on December 14, 2006 Article 11 revised and promulgated by Environmental Protection Administration order on February 21, 2020 Article 34, 35 and 39 revised; Article 41-1 to 41-5 added; Article 44 deleted; and promulgated by Environmental Protection Administration order on February 22, 2021 Article 17 revised and promulgated by Environmental Protection Administration order on February 16, 2022
Content：	Chapter 1 General Principles
Article 1	These Standards are determined pursuant to Article 36, Paragraph 2 of the Waste Disposal Act (herein referred to as this Act).

Article 2 Terms used in these Standards are defined as follows:

I. "Storage" refers to the act of placing industrial waste in a specific location, storage container or facility prior to clearance and disposal.

II. "Clearance" refers to the act of collecting and transporting waste.

III. "Disposal" refers to the following acts:

A. "Immediate treatment" refers to the use of physical, chemical, biological, thermal treatment or other treatment methods to alter the physical, chemical or biological characteristics or composition of industrial waste prior to final disposal or reuse, and achieve separation, compaction, detoxification, solidification or stabilization.

B. "Final disposal" refers to disposal of industrial waste in a sanitary landfill, sealed landfill or stabilized landfill, or by means of marine dumping.

C. "Reuse" refers to the use of industrial waste produced by an enterprise as raw material, materials, fuel, land reclamation fill, or other acts of use recognized by the central industry competent authority via self-use, sale, transfer, or commissioning, and in compliance with reuse regulations.

IV. "Clean-up" refers to the act of storage, clearance or disposal of industrial waste.

V. "Compatibility" refers to contact between industrial waste and a container or material, or the mixture of two or more types of industrial waste, will not produce the following effects:

A. Generation of heat.

B. An intense reaction, fire or explosion.

C. Generation of flammable or harmful fluids.

D. Degradation of container material, so as to lessen the pollution control effect.

VI. "Solidification" refers to treatment methods involving the use of solidifying agents mixed with industrial waste to effect solidification.

VII. "Stabilization" refers to treatment methods involving the use of chemicals mixed or reacting with industrial waste to cause the industrial waste to stabilize.

VIII. Thermal treatment methods:

A. "Incineration" refers to treatment methods using high-temperature combustion in order to transform industrial waste into stable gasses or substances.

B. "Thermal decomposition" refers to treatment methods involving the use of heat to break down industrial waste under anoxic conditions or in the presence of small quantities of oxygen into a gas, liquid, or residue.

C. "Melting" refers to treatment methods involving the heating of industrial waste until it reaches the melting point to cause harmful organic matter to oxidize or heavy metals to volatilize, while causing the remaining hazardous substances to stay in the slag and thereby effect stabilization and solidification.

D. "Smelting" refers to treatment methods that incorporate industrial waste in the high temperature metal smelting process in combination with high temperature reduction or metal recycling.

E. Other thermal treatment methods.

IX. "Oxidative decomposition" refers to treatment methods involving the use of chemical oxidation, electrolytic oxidation or wet oxidation to decompose specially designated pollutants in industrial waste.

X. "Chemical treatment methods" refer to the chemical treatment of industrial waste including neutralization, oxidation-reduction, extraction, chemical conditioning, ion exchange, chemical smelting, electrolysis, and air stripping.

	XI. "Cleaning/washing treatment" means treatment methods that make disappear the characteristics of hazardous components in an industrial waste storage container after said storage container has been cleaned/washed with water or a solvent. XII. "Physical treatment methods" refer to the use of physical treatment of industrial waste including evaporation, distillation, membrane separation, oil water separation, solid liquid separation, crushing, pulverizing, disassembling, stripping, sorting or compressing. XIII. "Sterilization" refers to treatment methods involving the use of physical (such as microwave treatment) or chemical principles to sterilize microbes in industrial waste within a certain amount of time; their indicator microbe reduction rate shall attain at least 99.999%. Those using high temperature high pressure steam sterilization shall test for Bacillus stearothermophilus spores. Those using other sterilization methods shall test for Bacillus subtilis spores. XIV. Landfilling methods: A. "Stabilized landfilling methods" refer to the placement of general industrial waste in a landfill equipped with facilities or measures to prevent land slippage and subsidence and conserve soil and water. B. "Sanitary landfill methods" refer to the burial of general industrial waste in a landfill constructed of water-impermeable materials or low water permeability soil and equipped with waste gas and water seepage collection and treatment facilities and groundwater monitoring devices. C. "Sealed landfilling methods" refer to the burial of hazardous industrial waste in a landfill constructed of pressure-resistant, double-layer water-impermeable materials and equipped with groundwater monitoring devices and measures to block the outward leakage of pollutants. XV. "Automatic identification and data capture (AIDC) system" refers to a computer system that automatically identifies objects via reading devices with different input interfaces and stores the captured data to achieve a waste identification system. XVI. "Destruction and removal efficiency" (DRE) refers to when principal organic hazardous constituents (POHC are treated with thermal methods the percentage of their gross weight before thermal treatment minus gross weight in stack emissions divided by gross weight before treatment. XVII. "Combustion efficiency" (CE) refers to the percentage of carbon dioxide concentration in emissions at the stack outlet to the sum of carbon dioxide and carbon monoxide concentrations. XVIII. "Toxic heavy metals" refers to industrial waste containing heavy metals that are listed in Table 1 of the Standards for Defining Hazardous Waste or industrial waste that exceeds standards for toxic heavy metals listed in Table 4 of the Standards for Defining Hazardous Waste following toxic characteristic leaching procedure (TCLP).
Article 3	Waste produced by, or for which clearance and disposal is commission by, an enterprise that constitutes recyclable waste pursuant to Article 18, Paragraph 1 of this Act shall be cleared and disposed of pursuant to recycling clearance and disposal regulations.
Article 4	The central competent authority shall officially announce their classification codes in accordance with the characteristics of major industrial waste components or hazardous industrial waste identification methods.
	Chapter 2 Storage of Industrial Waste
Article 5	Hazardous industrial waste shall be stored separately from general industrial waste.

Article 6	Methods for the storage of general industrial waste shall comply with the following regulations: I. General industrial waste shall be stored separately in accordance with the characteristics of its major components. II. Storage locations, containers, and facilities shall be kept clean and intact, may not emit airborne, fugitive, or seeping waste, may not pollute the ground, and may not emit a noxious odor. III. Storage containers and facilities shall be compatible with the waste they contain; any incompatible waste shall be stored separately. IV. Storage locations, containers, and facilities shall be marked in Chinese in a prominent place with the name of the waste they contain. The central competent authority shall, according to enterprise types, specific general industrial waste types, quantities and characteristics as well as storage deadlines, officially announce the packaging and labeling of industrial waste and the application method for storage deadline extension.
Article 7	Apart from biomedical waste sharp implements and infectious waste the storage of hazardous waste shall comply with the following regulations: I. Hazardous industrial waste shall be stored separately in accordance with hazardous industrial waste identification methods or hazardous characteristics. II. Waste shall be sealed in fixed packaging materials or containers, placed within storage facilities, assigned classification numbers, and marked with labels indicating the name of the waste-producing enterprise, the storage date, quantity, composition, and the characteristics of the hazardous industrial waste type. III. Storage containers and facilities shall be compatible with the hazardous industrial waste they contain to lessen corrosion or attrition. IV. Storage containers and packing materials shall be kept in good condition, and shall be replaced promptly if there is concern of serious rusting, damage or leakage. Storage shall be limited to one year. Those who require an extension shall apply for extension to the local competent authority where the storage facilities are located two months prior to the deadline. Extensions shall be limited to one time and may not exceed one year. Enterprises that are unable to dispose of hazardous industrial waste within the deadline, because the enterprise is unable to carry out disposal, there are no domestic disposal organizations that could be commissioned with disposal or due to particular circumstances, may submit a storage plan to the central industry competent authority for preliminary review and approval. The storage deadline may be extended after a second review and approval by the central competent authority. Paragraph 2 and the foregoing paragraph do not apply to those that store waste during a clearance, import or export process.

Article 8	Methods for the storage of biomedical waste sharp implements and infectious waste shall comply with the following regulations, unless other central competent authority regulations apply: I. "Waste sharp implements" shall be stored separately from other waste, sealed in not readily perforated sturdy containers for storage of a maximum of one year. II. "Infectious waste" shall be stored separately from other waste. Those that use thermal treatment methods shall seal the infectious waste in leak-proof, non-destructible red plastic bags or red combustible containers. Those that use sterilization treatment shall seal and store the waste in leakproof, non-destructible yellow plastic bags or yellow containers. Storage conditions shall comply with the following regulations: A. Waste producing organizations may store infectious waste for a maximum of one day at a temperature above 5°C; the said organizations may refrigerate infectious waste for a maximum of seven days at a temperature below 5 and above 0, and freeze infectious waste for a maximum of 30 days at a temperature below 0°C. B. Clearance organizations may not store infectious waste; but those that require transfer shipments due to particular circumstances may refrigerate or freeze infectious waste at a temperature below 5°C for a maximum of seven days upon approval by the local competent authority. C. Disposal organizations may not store infectious waste at a temperature above 5°C; the said organizations may refrigerate infectious waste for a maximum of seven days at a temperature below 5°C and above 0°C, and freeze infectious waste for a maximum of 30 days at a temperature below 0°C. The storage containers and plastic bags of the foregoing paragraph shall be marked in a prominent place on the outermost layer with the name of the waste, the name of the waste producing enterprise, the storage deadline, the weight, the name of the clearance and disposal organization, and the characteristics of the hazardous industrial waste. On top of that infectious waste shall also be marked with the storage temperature. The storage deadline of the foregoing paragraph does not include the clearance and transportation process, cargo loading and discharging, waiting and batch feeding time. When biomedical waste sharp implements and infectious waste cause noxious odors during the storage period, they shall immediately be cleared. Enterprises that are unable to comply with Paragraph 1 Subparagraph 2 due to particular circumstances may extend the storage deadline after relevant documents submitted to the local competent authority have been approved.The approval documents must clearly state the waste type for which storage has been extended, the reason for the extension and the approved storage extension deadline. A copy must be sent to the central competent authority.
Article 9	Enterprises using electronic or optic labels from automatic identification and data capture (AIDC) systems to control industrial waste flows may simplify the marked content regulated in Article 7 and the foregoing articles. The items, content and operating methods for the simplified labels of the foregoing paragraph shall be regulated by the central competent authority.

Article 10	Storage facilities shall be established for general industrial waste according to the characteristics of its major components. Apart from those items officially announced by the central competent authority, general industrial waste storage facilities shall also comply with the following regulations: I. There shall be equipment or measures to prevent the inflow or infiltration of surface water, rainwater, or groundwater. II. There shall be equipment or measures to collect waste liquids, waste gases or noxious odors, etc., produced by the facilities or to prevent them from polluting surface water bodies, groundwater bodies, air or soil. If industrial waste reuse types produced by an enterprise are identical with those officially announced by the central industrial competent authority and there are particular regulations for its industrial waste reuse management method, reuse shall follow the said management method and shall not be restricted by the foregoing paragraph.
Article 11	Apart from biomedical waste sharp implements and infectious waste the storage of hazardous waste shall comply with the following regulations: I. The facilities shall contain dedicated storage locations with firm floors and surrounding corrosionresistant, water-impermeable liners or structures. II. There shall be equipment or measures to prevent the inflow or infiltration of surface water, rainwater, or groundwater. III. There shall be equipment or measures to collect waste liquids, waste gases or noxious odors, etc., produced by the facilities or prevent them from polluting surface water bodies, groundwater bodies, air or soil. IV. There shall be accident prevention equipment and warning signs with white backgrounds, red characters, and black frames posted in prominent locations. V. Underground storage containers shall be equipped with fluid level inspection and anti-leak measures and leak detection systems. VI. The facilities shall contain necessary warning equipment, fire extinguishers, emergency lighting, or an emergency sprinkler system and safety equipment. VII. Facilities that hold flammable industrial waste, reactive industrial waste, or toxic chemical substances which are designated by the Standards for Defining Hazardous Waste shall contain necessary monitoring equipment to detect such waste types. This monitoring equipment shall use the standards for monitoring equipment stipulated in the Toxic and Concerned Chemical Substances Control Act and the Occupational Safety and Health Act.

Article 12	Storage facilities for biomedical waste, apart from genotoxic waste regulated pursuant to the previous Article, shall comply with the following regulations: I. The storage facilities shall be marked at the entrance or in prominent places with labels indicating the characteristics of the infectious industrial waste and shall possess emergency response facilities or measures. Such facilities shall be sturdy and segregated from treatment areas, kitchens, and restaurants. However, clinics may establish sealed storage facilities in treatment areas. II. Differently colored containers for the storage of industrial waste shall be placed in separate locations. III. The storage facilities shall be equipped with excellent water drainage and rinsing equipment. IV. The storage facilities shall be equipped with safety equipment or measures to prevent unauthorized access by personnel or animals. V. The storage facilities shall be equipped with equipment or measures to prevent the multiplication of flies, mosquitoes or other disease vectors. VI. There shall be equipment or measures to prevent the inflow or infiltration of surface water, rainwater, or groundwater. VII. There shall be equipment or measures to collect waste liquids, waste gases or noxious odors, etc., produced by the facilities or to prevent them from polluting surface water bodies, groundwater bodies, air or soil.
	Chapter 3 Clearance of Industrial Waste
Article 13	Vehicles, ships, or other means of transportation used for the clearance of industrial waste shall prevent the occurrence of situations that may pollute the environment or endanger human health, such as the airborne dispersal, spattering, overflow, or explosion of industrial waste or emission of noxious odors. Before clearance sludge shall be dewatered or dried until moisture content is below 85%. Sludge that has not been dewatered or dried until moisture content is below 85% shall be transported in tank cars.
Article 14	Incompatible industrial wastes may not be cleared in a mixed state.
Article 15	An enterprise that clears, or commissions the clearance of, industrial waste that it has produced to external locations shall record the date of waste clearance, quantity and type of waste, vehicle number, clearance organization, clearance personnel, and disposal organization, and shall preserve proof of disposal of the cleared industrial waste. The information in the foregoing paragraph shall be preserved for three years for checking purposes.
Article 16	Vehicles used for the clearance of hazardous industrial waste shall comply with the following regulations: I. Such vehicles shall display labels indicating the organization's name and phone number, and the characteristics of the hazardous industrial waste. II. An emergency response method manual and emergency response equipment for the hazardous industrial waste shall be carried on board the vehicle. Clearance personnel shall promptly adopt emergency response measures and notify the relevant competent authority if any hazardous industrial waste leaks while being transported. The enterprise producing the hazardous industrial waste and the clearance organization shall bear all responsibility for cleanup and resolution of any resulting problems.
Article 17	An enterprise that clears, or commissions the clearance of, industrial waste that it has produced to external storage or treatment locations shall fill out a delivery manifest in sextuplicate (hereinafter referred to as “hard copy

manifest”), or fill out the delivery manifest in electronic format transmitted online (hereinafter referred to as “soft copy manifest”). However, those enterprises that shall report the production, storage, clearance and disposal, reuse, export, import, or cross-boundary transport or transshipment of waste via online transmission pursuant to Article 31, paragraph 1 of this act, shall not be subject to this restriction.

After the hard copy manifest in the foregoing paragraph has been signed and accepted by the clearance organization, the first leaf shall be submitted within seven days to the competent authority of the place of waste production for checking purposes. The sixth leaf shall be kept by the enterprise for its own records, and the second through fifth leaves shall be submitted by the clearance organization to the disposal organization within two days for signing and acceptance by the latter, and the clearance organization shall retain the fifth leaf. Within seven days after completing disposal the disposal organization shall send the third leaf back to the producing enterprise, send the fourth leaf to the competent authority of the enterprise’s place of business for checking purposes, and retain the second leaf itself. Disposal organizations employing solidification, stabilization, or other disposal methods officially announced by the central competent authority shall also attach proof of entry into the final disposal site at the same time.

The soft copy manifest as referred to in paragraph 1 shall be delivered to the Disposal organizations by the clearance organization within 2 days to sign for receipt. The Disposal organization shall declare with the competent authority through the designated network within 1 day after the completion of the disposal.

For the temporary storage of hazardous industrial waste that is to be treated offshore, treatment regulated under the hard copy manifest on the second and the third leaf of the manifest could be skipped. The clearance organization shall fill in the fourth leaf of the manifest after delivering the wastes to the storage site and sign to confirm. If the soft copy manifest is adopted, the clearance organization shall deliver the manifest to the hazardous industrial waste storage site before export within 2 days for signed confirmation.

When hazardous industrial waste is sent to a disposal organization, the disposal organization shall immediately check whether the composition, characteristics or quantity of the hazardous industrial waste is consistent with the manifest in hard copy or soft copy and the contract. If the statements are not consistent with the delivery manifest and the contract, the disposal organization shall, within two days after the day of discovering the discrepancy, request the clearance organization or enterprise to make corrections, and shall inform the local competent authority of its intended actions.

The enterprise shall voluntarily keep track of the status of the commissioned clearance and removal of the hazardous industrial wastes within 35 days after clearing, and shall report to the local competent authority on any hazardous industrial wastes not being fully cleared or disposed of.

If an enterprise has cleared and disposed of hazardous industrial waste on its own, the enterprise and the clearance and disposal organization shall sign the delivery manifest in hard copy and soft copy by the enterprise and shall then proceed pursuant to the procedures designated in paragraph 1 through to the foregoing paragraph.

The manifest in hard copy and soft copy mentioned in paragraph 1 and the foregoing paragraph shall be retained for three years to facilitate checking.

	Should the date of submission of the manifest in hard copy or soft copy, or for declaration, fall on a holiday, it may be extended to the first following workday.
Article 18	Unless other central competent authority regulations apply, clearance methods for biomedical waste sharp implements and infectious waste shall comply with Article 13 through Article 16, and the following regulations: I. Waste that has been stored in differently colored containers may not be cleared in a mixed state. II. Waste may not be compressed or arbitrarily opened during the transportation process. III. During the transportation process refrigeration measures shall be provided, and normal operation shall be maintained. However, waste producing enterprises in offshore areas with inconvenient transportation do not need to provide refrigeration measures during a part of the transport process upon approval by the local competent authority of the place of waste production. IV. If there is no personnel present during the load and unload process, the doors of the clearance vehicles shall remain shut and locked.
	Chapter 4 Intermediate Treatment of Industrial Waste
Article 19	Unless general industrial waste is reused or other central competent authority regulations apply, the following general industrial waste shall first undergo intermediate treatment. The treatment methods are as follows: I. Flammable general industrial waste shall be treated with thermal treatment methods. II. Waste transformers and their oil containing PCBs of more than 2ppm and less than 50ppm: A. Waste transformers shall be first separated into solids and liquids, and their metal casing shall be recycled or treated with physical treatment methods. B. The transformer oil or liquid shall be treated with thermal treatment methods. C. As for nonmetal solid waste, nonflammable waste shall be finally disposed with the sanitary landfilling method, while flammable waste shall be treated with thermal treatment methods. III. Waste pharmaceuticals for use in humans or animals shall be treated with thermal treatment methods. IV. Wastewater treatment sludge from the manufacture of ethylene dichloride (EDC) or ethylene chloride shall be treated with thermal methods V. Other treatment methods officially announced by the central competent authority.

Article 20	Unless hazardous industrial waste is reused or other central competent authority regulations apply, the following hazardous industrial waste shall first undergo intermediate treatment. The treatment methods are as follows: I. Waste containing cyanides: treat using oxidative decomposition or thermal treatment methods. II. Hazardous waste oils, hazardous organic sludge, or hazardous organic residues: treat using water-oil separation or thermal treatment methods. III. Waste solvent: treat using extraction, distillation or thermal treatment methods. IV. Waste containing pesticides or polychlorinated biphenyls (PCBs): treat using thermal treatment methods. V. Toxic chemical substances that contain halogenated organic substances: treat using thermal treatment or chemical treatment methods. VI. Reactive industrial waste: treat using oxidative decomposition or thermal treatment methods. VII. Waste acids or alkalis: treat using evaporation, distillation, film separation, or neutralization. VIII. Waste containing mercury or its compounds: for such waste containing dry weight concentration greater than or equal to 260 milligrams, ultra-trace mercury shall be recycled, and its residue shall show a dissolved mercury content of less than 0.2 milligrams/liter in toxic characteristic leaching procedure (TCLP) test results; for waste containing dry weight concentration less than to 260 milligrams, other means of intermediate treatment shall be used, and its residue shall show a dissolved mercury content of less then 0.025 milligrams/liter. IX. Waste containing toxic heavy metals: treat using solidification, stabilization, electrolysis, film separation, evaporation, melting, chemical treatment methods, or smelting. Waste composed of 30% or more of combustible or volatile solids may be treated with thermal treatment methods. X. Steel industry ash and dust: treat using resource recycling, solidification, or stablization. XI. Dioxinous waste: treat using thermal treatment. XII. Toxic chemical substances containing toxic heavy metals: treat using chemical treatment methods, solidification, or stabilization. XIII. Other toxic chemical substances that do not contain halogenated organic substances or toxic heavy metals: treat using thermal treatment methods, chemical treatment methods, solidification, or stabilization. XIV. Containers for storage of toxic chemical substances or other hazardous industrial waste: treat using chemical treatment methods, thermal treatment methods, or cleaning/washing treatment; when using cleaning/washing treatment, proper wastewater treatment facilities must be used. XV. Absestos and absestos product waste that contain hazardous industrial waste: use moistening treatment followed by packaging in double-layer plastic bags with a thickness of 60/10,000 cm. Bags shall be tied twice, with the first tie leaving overhang at the knot-ends to be tied again; the bags shall then be stored in sturdy containers or employ solidification with measures to prevent airborne dispersal. XVI. Other treatment methods officially announced by the central competent authority.

Article 21	Unless other central competent authority regulations apply, biomedical waste shall be subjected to intermediate treatment. Intermediate treatment methods include the following: I. Genotoxic waste: use thermal treatment or chemical treatment. II. Waste sharp implements: use thermal treatment or pulverize after sterilization. III. Infectious waste: use thermal treatment. However, waste microbial cultures, microbial colonies, and related biological products, surgical or autopsy waste, pathology waste, waste contaminated with blood or body fluids, may be treated by destroying its original form after sterilization. Waste whose original form has not been destroyed shall display in a prominent place on the waste containers the name of the waste producing enterprise, the sterilization method, the name of the sterilization personnel or enterprise, the date of sterilization and the results of sterilization efficacy tests. Sterilization treatment standards, standards and procedures for operating rules and sterilization efficacy tests shall be determined on the basis of relevant central competent authority regulations. Sterilization treatment standards, standards and procedures for operating rules and sterilization efficacy tests shall be determined on the basis of relevant central competent authority regulations.
Article 22	A trial operation plan shall be submitted whenever hazardous industrial waste is to be subjected to thermal treatment. Trial operation shall be performed in accordance with the trial operation plan after approval by the special municipality, county or city competent authority.One month before trial operation testing the special municipality, county or city competent authority shall be notified. Trial operation shall be performed in accordance with the trial operation plan under the supervision of the special municipality, county or city competent authority. For the testing required during trial operation, the enterprise shall commission on its own initiative an analysis and testing organization approved by the central competent authority or an academic or consulting organization approved by the central competent authority to perform testing on the basis of the trial operation plan, The enterprise shall submit a trial operation report after the completion of testing, and may proceed with treatment only after approval by the special municipality, county or city competent authority. However, the enterprise shall comply with any requirements governing trial operation among the management regulations designated in Article 28, Paragraphs 2 through 5 and Article 42 of this Act. The trial operation period shall be limited to three months, however, an enterprise may apply for an extension when necessary; the extension period may not exceed three months. The central industry competent authority shall be in charge of acceptance, authorization, and approval of the trial operation plans and trial operation reports of the joint waste clearance and disposal organizations and waste clearance and disposal facilities in Article 28, Paragraphs 3 and 4 of this Act. The central competent authority shall officially announce the format of the trial operation plan and trial operation report in Paragraph 1.

Article 23	Except where other regulations of the central competent authority apply, industrial waste intermediate treatment facilities shall comply with the following regulations: I. Facilities shall have a sturdy basic structure. II. Any surfaces of the facility in contact with waste shall be constructed from corrosion-resistant and water-impermeable materials. III. Facilities shall have surrounding facilities or measures to prevent the inflow or infiltration of surface water, rainwater, and groundwater. IV. Facilities shall have necessary measures to prevent the airborne dispersal or outflow of waste, dispersal of noxious odors or any influence on the quality of the surrounding environment. V. Facilities shall have pollution control equipment and anti-corrosion measures.
Article 24	Apart from complying with the regulations in the foregoing article, facilities used for the incineration of hazardous industrial waste shall also comply with the following regulations: I. The output central temperature of the combustion chamber shall be maintained above 1,000 °C. Combustion gas residence time shall be over one second for biomedical waste sharp implements and infectious waste and over two seconds for other hazardous industrial waste. II. Combustion efficiency shall be over 99.9% when incinerating infectious industrial waste. III. Apart from the incineration of infectious waste, in the incineration of other hazardous industrial waste the destruction and removal efficiency shall be over 99.99% for chlorinated organic compounds, over 99.999% for polychloriated biphenyls (PCBs) and dioxins and over 99.9% for other toxic chemical substances. IV. Facilities shall possess devices for automatic monitoring, automatic monitoring and control of combustion conditions, the recording of the output central temperature of the combustion chamber and emergency response. V. Other items officially announced by the central competent authority. Fluidized bed waste incinerators are not subject to the restrictions of Subparagraphs 1 and 2 of the foregoing paragraph.
Article 25	Facilities used to dispose of hazardous industrial waste by thermal treatment methods other than incineration shall comply with the requirements of Article 23 and the previous Article, Paragraph 1, Subparagraphs 3 to 5.
Article 26	Thermal treatment facilities for the disposal of general waste shall comply with the requirements of Article 23 and Article 24, Paragraph 1, Subparagraphs 4 and 5. Disposal facilities employing incineration disposal shall be subject to general waste incineration disposal facility regulations.
Article 27	Fly ash, bottom ash and ash resulting from disposal by thermal treatment shall be tested once each half-year, and shall be assessed and disposed of pursuant to the Standards for Defining Hazardous Industrial Waste.
Article 28	Apart from complying with the regulations of article 23, facilities used for disposal by solidification and stabilization shall possess equipment for the even mixing of waste with solidifying agents or chemical agents.

Article 29	Industrial waste disposal, clearance or reuse organizations shall complete waste disposal or waste reuse operations within 30 days after receiving the waste. When due to particular circumstances an industrial waste disposal, clearance, or reuse organization is not able to complete disposal or reuse within 30 days after accepting the waste, the said disposal, clearance, or reuse organization shall apply for approval by the competent authority that issued the original permit documents or the reuse industry competent authority. At the same time the competent authority that issued the said original permit documents or the reuse industry competent authority shall send copies of the approval documents to the central competent authority. The restrictions of the foregoing paragraph shall not apply. Industrial waste disposal, clearance, or reuse organizations that have already clearly stated their disposal or reuse schedule when the permit documents are issued are not subject to the restrictions of the foregoing paragraph.
	Chapter 5 Final Disposal of Industrial Waste
Article 30	The final disposal of industrial waste shall be performed employing one of following methods: I. Stabilized landfilling method II. Sanitary landfilling method III. Sealed landfilling method IV. Marine dumping Liquid wastes not regulated by the Water Pollution Control Act may not be directly disposed of by landfilling without the approval of the central competent authority. Incompatible industrial wastes may not be landfilled together.
Article 31	Those types of industrial waste determined by the central competent authority and central industry competent authority as suitable for reuse in conformity to the sustainable use of resources may not be subjected to final disposal by any method other than reuse.
Article 32	Glass fragments, ceramic fragments, natural stone waste chips (pieces), waste casting sand, stone dewatered sludge, cement pieces, waste bricks and tiles, and general industrial waste officially announced by the central competent authority shall be disposed of using the stabilized landfill method. Relevant facilities shall comply with the following regulations: I. A sign shall be erected at the entrance, and shall indicate the waste type, the use deadline, and the manager. II. Landfills shall have a surrounding wall or other barrier. III. Preventive measures shall be taken when there is concern of landslip or ground subsidence. IV. Water and soil conservation measures shall be adopted in accordance with waste characteristics and the landfill topography and geology. V. Measures shall be taken to prevent airborne dispersal of waste. VI. Other items officially announced by the central competent authority.
Article 33	Stabilized landfills whose use has ended shall be covered with a layer of sandy or argillaceous clay at least 50 centimeters in thickness.

Article 34	When general industrial waste requiring no intermediate treatment is disposed of by sanitary landfilling, relevant facilities shall comply with the following regulations in addition to the requirements of Article 32, Subparagraphs 2 through 6: I. A sign shall be erected at the entrance, and shall indicate the manager’s name, type of landfilled waste, the geographical location, scope, and depth of the landfill area, and the ultimate landfill height. II. Waste gas treatment facilities shall be established when organic waste is landfilled at a facility. III. The bottom layer and periphery of a landfill shall have a water permeability coefficient of less than 10^{-7} centimeters/second, and shall be compatible with the waste and its leachate. This layer shall have a foundation of sandy or argillaceous clay or an equivalent material at least 60 centimeters in thickness, and shall have a lining of artificial water-impermeable materials that have a water permeability coefficient of less than 10^{-10} centimeters/second. The bottom layer and periphery of a landfill shall be compatible with the waste and its leachate, and are of a thickness of at least 0.2 centimeters. IV. There shall be facilities to collect and treat leachate. V. At least one monitoring well shall be established respectively upstream and downstream of a landfill relative to the direction of groundwater flow. VI. Except when the items landfilled are noncombustible, fire extinguishers or other effective fire fighting equipment shall be established. VII. Other items officially announced by the central competent authority. General industrial waste subjected to intermediate treatment and hazardous industrial waste subjected to intermediate treatment and designated general industrial waste by the special municipality, county or city competent authority are subject to the regulations of the foregoing paragraph. Subparagraph 3 of Paragraph 1 shall not apply to sanitary landfills established after the implementation of the amendment to these Standards on February 22, 2021. The bottom layer and periphery of a landfill shall have a water permeability coefficient of less than 10^{-7} centimeters/second, and shall be compatible with the waste and its leachate. This layer shall have a foundation of sandy or argillaceous clay or an equivalent material at least 60 centimeters in thickness, and shall have a lining of artificial water-impermeable materials that have a water permeability coefficient of less than 10^{-10} centimeters/second. The bottom layer and periphery of a landfill shall be compatible with the waste and its leachate, and are of a thickness of at least 0.2 centimeters.

Article 35	The earth cover and monitoring of sanitary landfills shall comply with the following requirements: I. Sanitary landfills shall be covered with at least 15 centimeters in thickness, and shall also be compressed; when the use of a sanitary landfill has ended, it shall be covered with a layer of sandy or argillaceous clay at least 50 centimeters in thickness. II. The water quality in the groundwater monitoring wells at the upper and lower courses shall be examined quarterly, with examination items covering arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc. When the monitoring results of Subparagraph 2 in the foregoing paragraph are below the groundwater pollution control standards but reach the groundwater pollution monitoring standards, the entity shall propose the countermeasures within one month after receiving the monitoring results and implement such countermeasures after acquiring the approval of the competent authorities of permit issuance or the competent authorities of targeted business.
Article 36	A stabilized landfill or sanitary landfill may be covered using other effective methods or may not be required to be covered every day after an application is made to the special municipality, county or city competent authority and approval received.
Article 37	Those disposing of industrial waste in sanitary landfills must comply with the Control Standards Governing the Entry of Waste Into Sanitary Landfills before proceeding with sanitary landfilling. The central competent authority shall respectively determine the Control Standards Governing the Entry of Waste Into Sanitary Landfills of the foregoing paragraph based on industry, manufacturing process, waste type, disposal method, and hazardous substance control item.

Article 38	When hazardous industrial waste shall be disposed of by sealed landfilling, relevant facilities shall comply with the following regulations in addition to the requirements of Article 32, Subparagraphs 2 to 6 and Article 34, Paragraph 1, Subparagraphs 1, 4, and 5: I. Landfills shall have anti-compression and anti-vibration facilities. II. Landfills shall establish entrance roads with a width of at least 5 meters. III. Landfills shall have facilities to prevent the inflow or infiltration of surface water, rainwater, and groundwater. IV. Landfills' peripheral and base facilities shall be constructed of concrete with a uniaxial compressive strength of 245 kilograms per square centimeter or other materials possessing the same grade of sealing ability. V. A landfill area exceeding 50 square meters or other materials possessing the same grade of sealing ability. VI. Anti-corrosion and anti-leak measures shall be taken on the basis of the hazardous industrial waste type and characteristics and landfill soil characteristics. VII. A landfill's bottom layer shall have a water permeability coefficient of less than 10^{-7} centimeters/second and be compatible with the waste material and leachate thereof, have a foundation comprised of sandy or argillaceous clay or other equivalent material 60 centimeters thick, and impermeable material with a water permeability coefficient of less than 10^{-10} centimeters/second that is compatible with the waste material and leachate thereof and 0.2 centimenters or more in thickness as a landfill liner. VIII. There shall be facilities to collect and treat leachate. IX. Other items officially announced by the central competent authority. Sealed landfills that establish the following three contiguous layered facilities shall not be subject to the restrictions of Subparagraphs 4, 5, and 7 of the foregoing paragraph: I. A landfill's bottom layer and peripheral facilities shall be comprised of a layer of clay 90 centimeters thick and with a water permeability coefficient of less than 10^{-7} centimeters/second, which is then covered with a double layer of artificial impermeable material 0.076 centimeters or more in thickness. II. The middle layer shall be covered with fine sand, crushed stone or other materials of equivalent grade with a water permeability coefficient of 10^{-2} centimeters/second and thickness of 30 centimeters or more and have installed leachate detection and collection equipment and then covered with a layer of clay with a water permeability coefficient of less than 10^{-7} centimeters/second and 30 centimeters in thickness. III. The upper layer shall be covered with fine sand, gravel, or other materials of equivalent grade with a water permeability coefficient of less than 10^{-2} centimeters/second and thickness of 30 centimeters or more and have installed leachate detection and collection equipment and then covered with a 30- centimeter layer of sandy or argillaceous clay.

Article 39	The earth cover and monitoring of sealed landfills shall comply with the following requirements: I. Landfills whose use has ended shall be first covered with a 15-centimer layer of sandy or argillaceous clay. They shall then be covered with an artificial impermeable material with a water impermeability coefficient of less than 10^{-10} centimeters/second and 0.2 centimeters or more in thickness and again covered with a layer of sandy or argillaceous clay 60 centimeters or more in thickness, which is then compressed. The water quality in the groundwater monitoring wells at the upper and lower courses shall be examined quarterly, with examination items covering arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc. When the monitoring results of Subparagraph 2 in the foregoing paragraph are below the groundwater pollution control standards but reach the groundwater pollution monitoring standards, the entity shall propose the countermeasures within one month after receiving the monitoring results and implement such countermeasures after acquiring the approval of the competent authorities of permit issuance or the competent authorities of targeted business. Closed landfills shall not be used as construction sites or other working areas.
Article 40	The disposal of industrial waste by marine dumping shall comply with the regulations of the Marine Pollution Control Act.
Article 41	When solidified matter resulting from solidification is disposed of by sanitary landfilling, such matter shall have a uniaxial compressive strength of at least 10 kilograms per square centimeter. When hazardous industrial waste is treated by solidification, stabilization or other treatment methods officially announced by the central competent authority, it shall be disposed of by sealed landfilling or sanitary landfilling. Sanitary landfilling shall shall comply with the Toxicity Characteristic Leaching Procedure (TCLP) Leaching Standards in Table 4 of the Standards for Defining Hazardous Industrial Waste in addition to the requirements of Article 37 and shall also be subject to independent landfill management by area. An application shall be made pursuant to relevant reuse regulations if the waste in the two foregoing paragraphs is to be reused.

Article 41-1 After closing (shutting down) a landfill, proceed with restoration with respect to the post-closure restoration plan in the approval document.

The contents of the said post-closure restoration plan shall include:

Basic information:

A. The name; type; opening and closing dates; the filling area and depth; types and quantity list of filled waste of the landfill.

B. The ownership deed, cadastral data, and land catalog of the landfill.

C. The fundamental structure of the landfill, including at least the layout, elevation, sectional drawings, and structural drawings.

Restoration items after landfill closure:

A. Final cover.

B. Drainage works.

C. Vegetation restoration.

Periodic tour inspection and facility maintenance planning.

Categories, items, methods, and frequencies of environmental monitoring.

Emergency response plan.

After measuring the landfill's management needs, the competent authorities of permit issuance or the competent authorities of targeted business may adjust the contents of the post-closure restoration plan regardless of the said limitations.

With respect to Paragraph 1, the competent authorities of permit issuance or the competent authorities of targeted business may request the landfill constructor to review the post-closure restoration plan where necessary. After the transfer of landfill operations, the transferee shall review the plan.

Within one year after the next day of the completion of the final disposal of the last batch of waste, the landfill shall complete the post-closure restoration according to the approved plan. Where an extension is required, the landfill shall apply for an extension, for one time only, within two months before plan expiration. The maximum length of extension shall be one year.

Article 41-2	The categories of environmental monitoring of a landfill's closure restoration plan shall cover water quality in the groundwater monitoring wells at the upper and lower courses, with examination items covering arsenic, cadmium, chromium copper, lead, mercury, nickel, and zinc. The examination shall be conducted once every half a year. When the monitoring results of the foregoing paragraph are below the groundwater pollution control standards but reach the groundwater pollution monitoring standards, the entity shall propose the countermeasures within one month after receiving the monitoring results and implement such countermeasures after acquiring the approval of the competent authorities of permit issuance or the competent authorities of the targeted business. The post-closure environmental monitoring stated in Paragraph 1 shall be implemented for at least 7 years. If the results of the continuous monitoring in the last two years comply with the following requirements, the landfill may terminate environmental monitoring with the approval of the competent authorities of permit issuance or the competent authorities of the targeted business: I. The intensity of pollutants diffused from the untreated leachate of the landfill is below the effluent standard, except when no leachate is detected as confirmed by the competent authorities of permit issuance or the competent authorities of the targeted business. II. The intensity of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc in the groundwater is below the groundwater pollution monitoring standard. III. Other matters specified by the competent authorities of permit issuance or the competent authorities of targeted business.
Article 41-3	When applying for building a landfill for disposing or treatment of industrial waste after the implementation of the amendment to these Standards on February 22, 2021, entities shall also submit a post-closure restoration plan to apply for approval to the competent authorities of permit issuance or the competent authorities of the targeted business. Landfills not closed before the implementation of the amendment to these Standards on February 22, 2021 shall submit a post-closure restoration plan within one year after the implementation of the amendment to these Standards on February 22, 2021 to apply for approval to the competent authorities of permit issuance or the competent authorities of the targeted business.
Article 41-4	For landfills already closed before the implementation of the amendment to these Standards on February 22, 2021, when the results of environmental monitoring are below the groundwater pollution control standards but reach the groundwater pollution monitoring standards as confirmed by the competent authorities, the entity shall propose the countermeasures within one month after receiving the monitoring results and implement such countermeasures after acquiring the approval of the competent authorities of permit issuance or the competent authorities of the targeted business. After completing improvements as per the countermeasures stated in the preceding paragraph, the entity shall submit related documents of proof to apply for approval to the original competent authorities of permit issuance or the competent authorities of the targeted business.

Article 41-5	Records shall be maintained for the status of monitoring stated in Article 35, Paragraph 1, Subparagraph 2; Article 39, Paragraph 1, Subparagraph 2; and Article 41-2, Paragraph 1, and retained for a term of five years. In addition, entities shall register the environmental monitoring results on the government website by the end of the following month. The competent authorities of permit issuance or the competent authorities of the targeted business may disclose the environmental monitoring results in the preceding paragraph.
	Chapter 6 Supplementary Provisions
Article 42	An enterprise that can use disposal methods other than those designated in these Standards to dispose of industrial waste produced by the enterprise or accepted under commission and achieve better detoxification, compaction or volume reduction results shall submit the following documents to the local competent authority of the disposal facility place of business in application to do so; the local competent authority may approve the application and forward it to the central competent authority for approval; when approved, such enterprises shall not be subject to the disposal method restrictions of Article 19 to 21: I. Waste characteristics, composition, and constituent analysis. II. Disposal methods, principles, and processes. III. Explanation of major equipment and its functions. IV. Pollution control plan. V. Proof of actual commercial operation: documents in foreign languages shall be notarized by a notary public or a notary organization in the local country and be authorized by an overseas mission of the Republic of China. The documents shall also be translated into Chinese and the Ministry of Foreign Affairs shall verify that the documents are consistent in meaning in both Chinese and the foreign language or a domestic translator shall submit an affidavit for notarization by a domestic court. Enterprises in the China area shall obtain attestation by the Straits Exchange Foundation.Enterprises with no actual commercial operation overseas or domestically shall submit relevant documentary proof. VI. Other items designated by the central competent authority. Other enterprises with identical conditions and equipment need not submit an application pursuant to the foregoing paragraph after the central competent authority has approved of disposal methods pursuant to the foregoing paragraph, and has made an official announcement to that effect.

	Article 43	An enterprise that implements the clearance and disposal of industrial waste using the methods designated in Article 28, Paragraph 1, Subparagraphs 2 to 4 of this Act shall first sign a written contract with the commissioned disposal organization before clearance or obtain verifying documentation approving the disposal issued by the enforcement authority. The written contract or the verifying documents approving the disposal of the foregoing paragraph must explicitly state the type and quantity of industrial waste and the disposal deadline before implementing clearance itself or entrusting the clearance of the waste to a commissioned disposal organization for disposal. When industrial waste commissioned for clearance and disposal is waste for which the central competent authority has officially announced that a waste test report shall be submitted, the enterprise shall attach within six months of signing the written contract a waste test report based on legal sampling and testing submitted by an analysis laboratory that has been accredited by the central competent authority. If the commissioned clearance and disposal organizations in the first paragraph are not the same organization, the enterprise shall sign separate written clearance and disposal contracts. However, an enterprise that is smaller than the specific size officially announced by the central competent authority may sign a joint written clearance and disposal contract.
	Article 44	(Deleted)
	Article 45	The central competent authority shall officially announce the labels referred to in these Standards.
	Article 46	These Standards shall take effect from the date of promulgation.
Files：	事業廢棄物貯存清除處理方法及設施標準(英譯全文)111.02.16.pdf	

Data Source：Ministry of Environment Laws and Regulations Retrieving System