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Technical Specification for Pollution Control of Plastic Waste

废塑料污染控制技术规范

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Technical Specification for Pollution Control of Plastic Waste

1 Scope

This Standard specifies the technical requirements for pollution control in the process of plastic waste generation, collection, transportation, storage, pretreatment, recycling and disposal.

This Standard is applicable to pollution control and environmental management in the process of plastic waste generation, collection, transportation, storage, pretreatment, recycling and disposal; and can be used as the technical basis for environmental impact assessment, design of environmental protection facility, environmental protection acceptance of completion, pollution discharge permit management, and clean production audit for the plastic waste recycling and disposal.

This Standard does not apply to degradable plastic wastes.

2 Normative References

The following documents or clauses thereof are quoted in this Standard. For the dated documents, only the versions with the dates indicated are applicable to this Standard. For the undated documents, only the latest version (including all the amendments) is applicable to this Standard.

GB 5085.7 Identification standards for hazardous wastes - General specifications

GB 12348 Emission Standard for Industrial Enterprises Noise at Boundary

GB 14554 Emission Standards for Odor Pollutants

GB 15562.2 Graphical signs for environmental protector solid waste storage (disposal) site

GB 16297 Comprehensive emission standard of air pollutants

GB 16889 Standard for pollution control on the landfill site for domestic waste

GB/T 19001 Quality management systems - Requirements

GB/T 24001 Environmental management systems – Requirements with guidance for use

GB 31572 Emission standard of pollutants for synthetic resin industry

GB 34330 Identification standards for solid wastes - General rules

The process of using chemical methods to convert plastics waste into resin monomers, oligomers, pyrolysis products or synthesis gas.

4 General Requirements

- 4.1** The green design of plastic products shall be strengthened to facilitate reuse and disposal.
- 4.2** It should select a reasonable and feasible technical route for the utilization and disposal of plastic waste in accordance with the sequence of reuse, recycling and disposal based on the principle of improving resource utilization and reducing environmental impact.
- 4.3** The organizations, other producers and operators involved in the generation, collection, transportation, storage, utilization, and disposal of plastic waste shall take measures to prevent scattering, loss, leakage, or other environmental pollution according to the generated pollutants; and implement relevant national and local emission standards.
- 4.4** The enterprises involved generation, collection, storage, pretreatment and recycling of plastic waste should be divided into separate storage sites. Different types of plastic waste should be stored separately; and set identification according to the requirements of GB 15562.2.
- 4.5** The pretreatment and recycling of halogen-containing plastic wastes should be separated from other plastic wastes.
- 4.6** Enterprises that collect, recycle, and dispose of plastic waste shall establish plastic waste management accounts, including the source, type, quantity, and whereabouts of plastic waste; and the relevant accounts shall be kept for at least 3 years.
- 4.7** The plastic waste that are hazardous wastes shall be managed, utilized and disposed of as hazardous wastes.
- 4.8** The generation, collection, recycling and disposal of plastic waste shall not only meet the relevant requirements of ecological environment protection, but also meet the relevant requirements of national regulations and standards on production safety, occupational health, transportation, fire protection, etc.

5 Requirements for Pollution Control in Production link

5.1 Requirements for pollution control of plastic waste from industrial sources

Enterprises generating plastic waste should classify, collect and store leftovers, scraps, defective products, plastic waste products, plastic waste packaging, etc. according to material characteristics and recycling and disposal methods; and establish plastic waste management ledgers, including type, quantity, whereabouts, etc. of plastic waste; and relevant ledgers shall be kept for at least 3 years.

5.2 Requirements for pollution control of plastic waste from domestic sources

5.2.1 The recyclables of the plastic waste shall be placed in recyclable waste bins or special recycling facilities in accordance with local household waste classification management requirements; or handed over to renewable resource recycling companies.

5.2.2 Hazardous waste such as plastic waste that is put into hazardous waste collection facilities for centralized collection shall be handed over to qualified organizations for utilization and disposal.

5.3 Requirements for pollution control of plastic waste from agricultural sources

5.3.1 The discarded non-biodegradable plastic agricultural film shall be recycled and not be discarded, buried or burned in the open.

5.3.2 The discarded non-biodegradable fishing nets, fishing gear, net cages and other plastic waste shall be recycled and not be discarded, buried or burned in the open.

5.3.3 The discarded fertilizer packaging bags (barrels or bottles), and other plastic wastes shall be recycled and not be discarded, buried or burned in the open.

5.4 Requirements for pollution control of plastic waste from recyclables of medical institutions

5.4.1 Recyclables such as waste plastics of medical institutions shall be placed in special containers; and mixing with medical waste is strictly prohibited.

5.4.2 The collection containers and packages of waste plastics in the recyclables of medical institutions shall be marked clearly.

5.4.3 The collection, handling, temporary storage, and transfer of plastic waste in recyclables of medical institutions shall be carried out separately from medical waste.

6 Requirements for Pollution Control in Collection and Transportation

6.1 Collection Requirements

6.1.1 Plastic waste collection enterprises shall refer to GB/T 37547 to classify and collect plastic waste according to the source, characteristics and use process of plastic waste.

6.1.2 Scattering shall be avoided during the collection of plastic waste; and the residual liquid shall not be dumped and cleaned at will.

6.2 Transportation requirements

corresponding wastewater collection and treatment facilities shall be equipped; and the cleaning wastewater shall be recycled after treatment.

7.5 Drying requirements

Closed circulation drying equipment should be selected. The drying link shall be equipped with waste gas collection and treatment facilities to prevent secondary pollution.

8 Requirements for Pollution Control in Recycling and Disposal

8.1 General requirements

8.1.1 The appropriate utilization and disposal process shall be selected according to the material characteristics, degree of mixing, cleanliness, local environment and industry conditions of plastic waste.

8.1.2 Under the premise of complying with the *Catalogue for Guiding Industry Restructuring*, it shall comprehensively consider the following factors such as the generation of waste plastics in the region, the level of social and economic development, industrial layout and planning, market demand for recycled products, and the level of pollution prevention and control of recycling technologies; then reasonably determine the production scale and technical route of recycling facilities.

8.1.3 According to the types and concentrations of pollutants in the wastewater generated during the plastic waste recycling process, corresponding wastewater collection and treatment facilities shall be equipped. The treated wastewater should be recycled; and the discharged wastewater shall implement relevant national and local discharge standards according to the functional requirements or pipe requirements of the effluent receiving water body. And the key pollutant indicators for control include chemical oxygen demand, suspended solids, pH value, chromaticity, petroleum, adsorbable organic halides, etc.

8.1.4 The monitoring, evaluation and treatment of new pollutants and priority chemicals shall be strengthened.

8.1.5 The waste gas generated during the recycling process of plastic waste shall be collected and treated. The emission of air pollutants shall comply with the provisions of GB 31572 or GB16297, GB 37822 and other standards. The emission of odor pollutants shall comply with the provisions of GB 14554.

8.1.6 Noise pollution shall be controlled during the recycling process of plastic waste; and the emission of noise shall comply with the provisions of GB 12348.

8.1.7 Metal, rubber, fiber, slag, grease and other inclusions in plastic waste, as well as unusable

waste generated in the recycling process of plastic waste shall be established ledgers; and shall not be discarded, dumped, incinerated or landfilled without authorization. Hazardous waste shall be handed over to relevant qualified organizations for utilization and disposal.

8.1.8 Per chlorofluorocarbons shall not be used as foaming agents in the production process of recycled plastic products or materials; toxic and harmful chemical additives shall not be added when manufacturing recycled plastic products or materials that are in contact with the human body.

8.2 Requirements for mechanical recycling

8.2.1 In the mechanical recycling process of plastic waste, waste gas collection and treatment devices shall be installed in the melt granulation workshop; and the cooling waste water from the extrusion process should be recycled.

8.2.2 Energy-saving melting granulation technology should be used; and low-temperature melting granulation technology should be used for halogen-containing plastic waste.

8.2.3 It is advisable to use a non-screen filter granulator to reduce the generation of waste filters. When the plastic extruder filter mesh is disposed of by incineration, a flue gas purification device should be equipped.

8.3 Requirements for chemical recycling

8.3.1 When the mixed plastic waste containing polyvinyl chloride and other halogen-containing plastics are chemically recycled, appropriate de-chlorination, desiliconization and metal removal treatments shall be carried out to meet the production and product quality and pollution prevention requirements.

8.3.2 The chemical recycling process shall not use additives containing heavy metals.

8.3.3 The heavy metal-containing catalyst used in the chemical recycling process shall be recycled first; and the waste catalyst shall be entrusted to a qualified organization for utilization or disposal.

8.3.4 Chemical recycling and cracking facilities of plastic waste shall use continuous production equipment (including continuous feeding system, continuous cracking system and continuous discharging system).

8.3.5 Chemical recycled products of plastic waste shall be identified in accordance with GB 34330. If identified as solid waste, they shall be managed as solid waste and identified in accordance with GB 5085.7. After identified as hazardous waste, they shall be managed as hazardous waste.

8.4 Disposal requirements

8.4.1 When using domestic garbage and other incineration facilities to dispose of plastic waste,

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