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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30102-2024

Guidelines for the recovery and recycling of plastics waste

塑料废弃物的回收和再利用指南

(English Translation)

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1 Scope

This document provides guidance on sources, recovery and recycling, recovery quality, material standards and product specifications in the process of plastic waste recovery and recycling, and provides various ways to recover and recycle plastic waste generated from pre-consumer and post-consumer sources.

This document applies to the management and application of plastic waste recovery and recycling.

NOTE: This document establishes general quality requirements to be considered at all steps of the recovery process and provides general recommendations for material standards, test standards and product specifications. The processing stages, requirements, recommendations and terminology presented in this document are of general applicability.

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

GB/T 2035 Terms and definitions for plastics (GB/T 2035-2008, ISO 472:1999,

IDT)

GB/T 16288 Marking of plastics products (GB/T 16288-2008, ISO 11469:2000,

MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 2035 and the following apply to this document.

3.1

waste

Any material or item that the owner discards or intends to discard or is required to discard.

3.9

mechanical recycling

The process of converting plastic waste into secondary raw materials or products without significantly changing the chemical structure of the material.

NOTE: Plastic secondary raw materials are synonymous with recyclate.

3.10

physical recycling

The process of separating one or more target polymers from other polymers, additives and other added materials (such as fibers, fillers, colorants and contaminants) through a series of purification steps to obtain a recovered polymer that is largely unaffected by the process and can be reused in plastic formulations.

NOTE 1: This process may also enable other valuable components of the plastic to be recovered.

NOTE 2: Currently, most physical recycling methods are solvent-based methods.

3.11

chemical recycling

Through cracking, gasification or depolymerization reaction, coke oven treatment (excluding energy recovery and incineration) and other technologies, the chemical structure of plastic waste is changed to generate new monomers or raw materials.

NOTE: It is formerly known as "feedstock recycling".

3.12

biological recycling organic recycling

The biodegradable plastic waste is treated aerobically (composting) or anaerobically (digestion) using microorganisms under controlled conditions to produce stable residual

organic matter, carbon dioxide and water under aerobic conditions, or stable residual organic matter, methane, carbon dioxide and water under anaerobic conditions.

NOTE: It includes industrial processes involving living microorganisms and can convert biowaste into valuable products.

3.13

recovered material

Plastic materials that are separated, transferred or removed from solid waste for recycling or to replace raw materials.

NOTE: See ISO 14021.

3.14

recyclate

Plastic materials that are generated from the recycling of plastic waste.

3.22

agglomerate

The phenomenon of particles sticking together after being shredded and/or granulated.

3.23

baling

The process in which plastic waste is compacted and secured as a bundle to facilitate handling, storage and transportation.

3.24

lot

A determined quantity of some commodity produced or manufactured under assumed uniform conditions.

3.25

homogenizing

The process of improving the uniformity of a certain component and/or property of a plastic material throughout the material.

3.26

micronizing

The process of shredding plastic material into a fine powder.

3.27

purge material

Material resulting from the passing of polymer through plastics processing equipment for the purpose of cleaning the equipment.

NOTE: If one polymer is changed to another, or the color or grade of the polymer is changed, purge material is required.

3.28

depolymerization

The chemical reverse reaction of a polymer into its monomers or a polymer of lower relative molecular mass.

NOTE: It includes hydrolysis, glycolysis, formic acid hydrolysis, etc.

3.29

biodegradation

A process in which material degradation is caused by biological activities, especially the action of enzymes, so that the materials are gradually digested by microorganisms or certain organisms as a nutrient source, resulting in a decrease in their relative molecular mass, weight loss, a decrease in physical properties, etc., and ultimately being decomposed into simpler compounds, mineralized inorganic salts of the contained elements, and inanimate objects.

[Source: GB/T 41010-2021, 3.1]

3.30

environmental aspect

Elements of an organization's activities, products or services that interact or can interact with their environment.

NOTE 1: An environmental aspect may produce one or more environmental impacts. Significant environmental impact aspects are environmental aspects that have or can produce one or more significant environmental impacts.

NOTE 2: Significant environmental aspects are determined by the organization using one or more criteria.

[Source: GB/T 24001-2016, 3.2.2]

3.31

environmental impact

Adverse or beneficial changes in the environment that are caused wholly or in part by the