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

GB/T 46043-2025

**Plastics - Recycled plastics - Guidance for traceability and
assessment of environmental aspect**

塑料 再生塑料 可追溯性和环境因素评估指南

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1 Scope

This document provides guidance on traceability methods for recycled plastics, outlining the classification and identification of recyclable plastic materials, the characterization of recyclable plastic materials, the traceability information consisting of steps such as input material control, recycling process control, recycled plastic characterization, green factory evaluation, recycled plastic labeling and marking, traceability assurance.

This document also provides guidance on environmental impact assessment methods for the lifecycle of recycled plastics, outlining the information covered in environmental impact assessment checks.

This document applies to the traceability and environmental impact assessment of the entire recycled plastics process.

2 Normative references

GB/T 1033.1

GB/T 1040.2

GB/T 1043.1

GB/T 1632.5

GB/T 1634.2

2 Plastics and ebonite

GB/T 1844.1 Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics GB/T 2914 Plastics - Homopolymer and copolymer resins of vinyl chloride - Determination of volatile matter (including water) GB/T 3682.1 Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 1: Standard method GB/T 9345.1 Plastics - Determination of ash - Part 1: General methods GB/T 19001 Quality management systems - Requirements GB/T 40006 (All parts) Plastics - Recycled plastic GB/T 40318 Plastics - Environmental aspects - General guidelines for their inclusion in standards GB/T 45090 Plastics - Recycled plastics logos and signs GB/T 45091 Requirements for the limits of restricted substances in recycled plastics GB/T 45128 Determination of moisture content in plastics HG/T 6182 Green factory evaluation requirements for physical recycling and recycled plastics industry SN/T 0570 Rules of the inspection for radioactive contamination of scrap imported as raw material

3 Terms and definitions

The terms and definitions defined in GB/T 40006.1, as well as the following terms and definitions, apply to this document.

3.1 Waste

Any material or article discarded, intentionally discarded, or required to be discarded by the holder.

[Source. GB/T 2035-2024, 3 1436, modified]

3.2 Environmental impact

The adverse or beneficial changes to the environment caused wholly or partially by an organization's environmental aspects (3.10). [Source. GB/T40318-2021, 3.4]

4.1 Traceability

The entire process of recycled plastic production should follow prescribed procedures and ensure traceability. Through the classification, labeling, characterization of recyclable plastic materials, and the provision of traceability methods and procedures, recycled plastic production enterprises can use traceable recyclable plastic materials to produce recycled plastics, providing end-users with quality-assured products. To ensure the safe use of recyclable plastic materials during this process, suppliers of recyclable plastic materials should provide recycled plastic production enterprises with necessary information on the source and composition of the recyclable plastic materials.

4.2 Environmental aspect assessment

By using methods to assess the environmental impact of the entire lifecycle of recycled plastics - from recycling and production to sales, use, end-of-life (scrapping) - it is possible to ensure that all participants in the recycled plastics production process understand their respective responsibilities and to clearly define and disclose information on the environmental impact of each step.

5.1.1 General rules

Recyclable plastic materials should be classified by polymer type and source. The polymer type symbol should be selected from the polymer code specified in GB/T 1844.1; the source should be selected from position 5 of group 1 of the classification and naming character set in GB/T 40006 (all parts), as shown in Table 1.

Polymer type and source are separated by "-"; different polymers are connected by "+"; different sources are connected by "+".

- Recording process variables;
- Group-batching of produced recycled plastic products;
- Conducting quality control testing on delivered products.

For specific applications, such as automotive applications, challenge test should be conducted according to relevant standards and regulations, to demonstrate that the process can provide products that meet application requirements.

5.3.3 Characterization of recycled plastics

To ensure that the quality of recycled plastic products meets the buyer's requirements, the supplier should provide characteristics of the recycled plastics according to relevant standards, such as the product performance characterized by GB/T 40006 (all parts); report test values.

5.3.4 Green factory evaluation

Recycled plastic production enterprises should undergo green factory evaluation according to industry standards (e.g., HG/T 6182).

5.3.5 Labeling and marking of recycled plastic

Recycled plastics should be labeled and marked according to GB/T 45090.

5.3.6 Traceability assurance

To ensure traceability, recycled plastic suppliers should provide information and data for each stage (5.3.1 ~ 5.3.5) to meet the traceability requirements of the buyer's intended application, as shown in Table 4.

Note 1. Traceability of recycled plastics to every single product is neither realistic nor necessary.

Traceability generally begins with end-of-life products and municipal waste sorting centers. For industrial recyclable plastic materials, traceability begins with the plastic production enterprise or processing plant from which the recyclable plastic material is generated. Sorting centers and recycling companies can achieve traceability, by assigning an identifier (e.g., category, production batch number, date, etc.) to each batch of recyclable plastic material. Appropriate labeling shall be maintained, at all stages of production and delivery throughout the recycling process.

Note 2. This document does not specify an identification and management scheme, as it depends on the scale of the recycling operation and the source of the materials. However, once the recyclable plastic material is delivered to a recycled plastics production company, the production company is responsible for continuing to identify the process.