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PEOPLE'S REPUBLIC OF CHINA**

**GB/T 46020.2-2025**

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**Plastics - Guide of design for recycling - Part 2: High density  
polyethylene (PE-HD) materials**

塑料 可回收再生设计指南 第2部分：高密度聚乙烯（PE-HD）材料

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## Table of Contents

|                                                                                                             |     |
|-------------------------------------------------------------------------------------------------------------|-----|
| Preface .....                                                                                               | III |
| Introduction .....                                                                                          | IV  |
| 1 Scope .....                                                                                               | 1   |
| 2 Normative references .....                                                                                | 1   |
| 3 Terms and Definitions .....                                                                               | 1   |
| 4 Symbols and abbreviations .....                                                                           | 2   |
| 5 categories .....                                                                                          | 2   |
| 6 Basic Principles .....                                                                                    | 2   |
| 7 Design Elements .....                                                                                     | 2   |
| 8 Test Method .....                                                                                         | 6   |
| 9 Determination of Recyclability .....                                                                      | 9   |
| Appendix A (Normative) Polyolefin Product Float and Sink Sorting Test Method .....                          | 10  |
| Appendix B (Normative) Recommended values for design classification test of recyclable PE-HD products ..... | 11  |

## Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 46020 "Guidelines for design of plastics for recycling and regeneration". GB/T 46020 has been published in the following parts.

- Part 1: Polyethylene terephthalate (PET) material;
- Part 2: High-density polyethylene (PE-HD) material.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15).

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## Introduction

Plastics are widely used in various fields of production and life. Recycling and reusing post-consumer plastics is an important way to improve the efficiency of plastic resource utilization and solve the problem of plastic waste.

It is an important way to solve plastic pollution and reduce carbon emissions. In order to obtain high-quality recycled plastic materials, promote the recycling of plastics, and improve the recycling rate of plastics The large-scale and standardized development of the recycling industry and the reduction of pollution in the plastic recycling process require the participation of the entire plastic industry chain.

The design and production stages of plastic products fully consider the material selection of various design elements such as basic resins, auxiliary materials, additives, etc., so that the

plastic can be Better recycling and reuse. This urgently requires a set of standardized plastic product recyclable design guidelines to help designers in designing plastics.

When producing a product, correctly select suitable materials for the product and its components, and design plastic products that are conducive to recycling.

The lack of relevant standards for the recyclable design guidelines for plastic products may lead to more pollutants being introduced into the plastic recycling system.

The economic efficiency of plastic recycling is weakened, and plastic products are difficult to recycle.

The design of Fan plastic products has a positive driving effect on improving the quality and efficiency of plastic recycling.

According to the existing post-consumer plastic recycling flow, GB/T 46020 "Plastic Recyclable Design Guide" is planned to consist of four parts. constitute.

- Part 1: Polyethylene terephthalate (PET) material. The purpose is to guide the recyclable design of PET materials.
- Part 2: High-density polyethylene (PE-HD) materials. The purpose is to guide the recyclable design of HDPE materials.
- Part 3: Polypropylene (PP) materials. The purpose is to guide the recyclable design of PP materials.
- Part 4: Polyethylene (PE) materials for film and flexible packaging. The purpose is to guide the PE materials used for film and flexible packaging Recyclable design.

This document is part 2 of GB/T 46020 and provides information on the design of products using high-density polyethylene (PE-HD) as the base resin.

The main considerations when recycling PE-HD products are to make them regenerated into Recycled plastics that meet the performance requirements of downstream applications.

Plastic Recyclable Design Guide Part 2: High-density polyethylene (PE-HD) materials

## 1 Scope

This document provides the classification, basic principles, design elements, and test methods involved in the design of recyclable high-density polyethylene (PE-HD) materials.

Guidance on test methods and classification determination of recyclable and recyclable design.

This document applies to PE-HD or rigid packaging with PE-HD as the main component that has entered or is intended to enter the plastic recycling system Recyclable design for products such as containers (bottles, barrels, boxes, etc.), construction pipes, and daily

necessities.

## 2 Normative references

GB/T 1033.1

GB/T 1040.2

GB/T 1043.1

GB/T 1844

GB/T 1845.2-2021

GB/T 2035

GB/T 2918

GB/T 3682.1

GB/T 9341

GB/T 11115

GB/T 17037.1

GB/T 37426

GB/T 40006.2

GB/T 46020.1-2025

## 3 Terms and Definitions

The terms and definitions defined in GB/T 2035, GB/T 46020.1-2025 and BB/T 0053 apply to this document.