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

GB/T 43288-2023

**Plastics - Soil biodegradable materials for mulch films for use in
agriculture and horticulture - Requirements and test methods
regarding biodegradation, ecotoxicity and control of constituents**

塑料 农业和园艺地膜用土壤生物降解材料 生物降解性能、生态毒性和成分控制
的要求和试验方法

(English Translation)

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Reference

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is equivalent to ISO 23517:2021 "Biodegradation properties of soil biodegradable materials for plastic agricultural and horticultural mulch films, Requirements and test methods for ecotoxicity and ingredient control:

This document has made the following minimal editorial changes:

---Appendix A adds notes on the methods for determining the content of heavy metals and specific elements in my country:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

Biodegradable mulches have been used in agriculture and horticulture around the world for many years: They can improve crop production by Long-term conditions that help increase yields and improve crop quality, such as:

- Suppress the growth of weeds;
- Significantly reduce the consumption of water and other resources;
- Control soil temperature;
- Reduce the leaching of mineral elements and other fertilizers;
- Reduce soil compaction;
- Protect crops from soil:

Biodegradable mulch is designed so that it does not need to be recycled from the soil after its intended use period: Therefore, farmers no longer need to Biodegradable mulch film is recovered from the field after the crop is harvested for disposal or recycling: Farmers simply turn it over along with plant residues to blend into the soil:

This document sets out the standard specifications required for biodegradable mulches

used in agriculture and horticulture: It is suitable for describing the materials used in the manufacture of mulch the characteristics of plastic materials and mulch films themselves, such as biodegradation, adverse effects on terrestrial organisms and composition control:

Plastic agricultural and gardening mulch with soil bio Degradable materials biodegradability, ecotoxicity and Requirements and test methods for ingredient control

1 Scope

This document applies to biodegradable plastic materials used in the production of mulches or prepared for use as agricultural and horticultural mulches:

This document specifies test methods and evaluation criteria by discussing the following characteristics:

- a) Ingredient control;
- b) biodegradable;
- c) Negative effects on terrestrial organisms:

Note: This document is used to evaluate other soil-degradable plastic products that are not eligible for mulch film, such as drip irrigation tapes, hanging vine ropes, clips and nursery bowls:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

termination of pH)

ISO 11268-1 Effects of soil quality contaminants on earthworms - Part 1: Determination of the effects on earthworms A: chrysanthemum/A:

to Eisenia fetida/Eisenia andrei) ISO 11268-2 Effects of soil quality contaminants on earthworms Part 2: Effects on the reproduction of the earthworms Aiken/Ande ISO 11269-2 Determination of the effects of soil quality contaminants on soil flora Part 2: Effects of contaminated soil on higher plants ISO 15685 Soil quality Determination of nitrification potential and nitrification inhibition Rapid detection method for ammonia oxidation (Soil quality-Determination) ISO 17556 Determination of the final aerobic biodegradability of plastic materials in soil by measuring the oxygen demand in a closed respirometer or measuring the evolved gas (Note: GB/T 22047-2008 The final aerobic biological decomposition capacity of plastic materials in soil is measured by measuring the oxygen demand in a closed respirometer or measuring the release rate:

Method for releasing carbon dioxide (ISO 17556:2003, IDT)