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

GB/T 38737-2020

**Plastics - Determination of the ultimate anaerobic biodegradation of
plastic materials in controlled slurry digestion systems - Method by
measurement of biogas production**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Please note that some content of this document may involve patents. The issuer of this document does not assume responsibility for identifying these patents.

This standard uses the translation method equivalent to ISO 13975..2019 "The final anaerobic biological decomposition of materials in the plastic controlled sludge digestion system.

The rate is determined by the method of measuring the release of biogas. "

This standard is proposed and managed by the National Standardization Technical Committee on Bio-based Materials and Degradable Products (SAC/TC380).

This standard was drafted by. Beijing Technology and Business University, Zhejiang Junke New Materials Co., Ltd., Ningbo Jialian Technology Co., Ltd., Tongcheng Chemical (China) Co., Ltd., Nanjing Wurui Biodegradable New Materials Research Institute Co., Ltd., National Quality Supervision and Inspection Center for Plastic Products (Beijing), Beijing City Drainage Group Co., Ltd.

1 Scope

This standard specifies a method for evaluating the anaerobic biodegradability of plastics in a controlled sludge anaerobic digestion system.

The content is not more than 15%. This system is more common in sewage sludge, livestock manure or garbage disposal sites. This method aims to determine the

Conversion rate of organic carbon to carbon dioxide (CO₂) and methane (CH₄) and other biogas.

With a known carbon content, this method is suitable for the following materials.

--- natural and/or synthetic polymers, copolymers or mixtures thereof;

--- resins containing plasticizers, dyes or other compounds;

--- Water soluble polymer.

This standard does not apply to materials that have an inhibitory effect on experimental microorganisms at the test concentration.

Note. The inhibitory effect can be determined by inhibition test (eg. ISO 13641-1 or ISO 13641-2).

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For the cited documents without date, the latest version (including all amendments) applies to this document.

GB/T 32106-2015 Determination of the final anaerobic biodegradability of plastics in aqueous culture fluids by measuring biogas

Product method (ISO 14853..2005, IDT)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Ultimate anaerobic biodegradation ultimateanaerobicbiodegradation

Organic compounds are broken down by microorganisms into methane, carbon dioxide, water and mineralized inorganic salts and other elements and new biomass.

3.2

Digested sludge

A mixture of precipitated sewage and activated sludge. The activated sludge is taken from the purpose of reducing biomass content and improving sludge dewatering capacity

The temperature is suitable for anaerobic digesters.

Note. Digested sludge contains microorganisms suitable for anaerobic fermentation and methanogenesis to promote the production of carbon dioxide and methane.