

ICS 83.080.01

CCS G 31



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

GB/T 19276.2-2003

**Determination of the ultimate aerobic biodegradability of plastic
materials in an aqueous medium -- Method by analysis of
evolved carbon dioxide**

(English Translation)

Issued on: August 25, 2003

Implemented on: February 1, 2004

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of PRC**

Table of Contents

Foreword...	3
Introduction...	4
1 Scope...	5
2 Normative References...	6
3 Terms and Definitions...	6
4 Principle...	8
5 Test Environment...	8
6 Reagents...	9
7 Apparatus...	12
8 Procedure...	13
9 Calculation and Expression of Results...	17
10 Validity of Results...	19
11 Test Report...	19

Foreword

This Standard equivalently adopts ISO 14852:1999 Determination of Ultimate Aerobic Biodegradability of Plastic Materials in an Aqueous Medium - Method by Analysis of Evolved Carbon Dioxide (English Edition). The National Plastics Standardization Center Biodegradable Materials Working Group conducted a series of laboratory tests from 1999 to 2002, and developed this Standard on the basis of verification tests.

The Annexes A, B, C, D of this Standard are informative.

This Standard was proposed by China Light Industry Council.

This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Plastics.

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Determination of the Ultimate Aerobic Biodegradability
of Plastic Materials in an Aqueous Medium - Method by
Analysis of Evolved Carbon Dioxide

1 Scope

This Standard specifies a method, by measuring the amount of carbon dioxide evolved, for the determination of the degree of aerobic biodegradability of plastic materials, including those containing formulation additives. The test material is exposed in a synthetic medium under laboratory conditions to an inoculum from activated sludge, compost or soil.

If an un-adapted activated sludge is used as the inoculum, the test simulates the biodegradation processes which occur in a natural aqueous environment; if a mixed or pre-exposed inoculum is used, the method can be used to investigate the potential biodegradability of a test material.

The conditions used in this Standard do not necessarily correspond to the optimum conditions allowing maximum biodegradation to occur, but the standard is designed to determine the potential biodegradability of plastic materials or give an indication of their biodegradability in natural environments.

The method enables the assessment of the biodegradability to be improved by calculating a carbon balance (optional, see Annex C).

The method applies to the following materials:

- Natural and/or synthetic polymers, copolymers or mixtures thereof.
- Plastic materials which contain additives such as plasticizers, colorants or other compounds.
- Water-soluble polymers.

--- Materials which, under the test conditions, do not inhibit the microorganisms present in the inoculum. Inhibitory effects can be determined using an inhibition control or by another appropriate method. If the test material is inhibitory to the inoculum, a lower test concentration, another inoculum or a pre-exposed inoculum can be used.

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