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Third edition
2019-05

Plastics — Determination of the ultimate aerobic biodegradability of plastic materials in soil by measuring the oxygen demand in a respirometer or the amount of carbon dioxide evolved

Plastiques — Détermination de la biodégradabilité aérobie ultime des matériaux plastiques dans le sol par mesure de la demande en oxygène dans un respiromètre ou de la teneur en dioxyde de carbone libéré



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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	3
5 Test environment	4
6 Materials	4
7 Apparatus	4
8 Procedure	4
8.1 Preparation of the test material.....	4
8.2 Preparation of the reference material.....	5
8.3 Preparation of the test soil.....	5
8.3.1 Collection and sieving of soil.....	5
8.3.2 Preparation of standard soil.....	6
8.3.3 Measurement of soil characteristics.....	7
8.3.4 Adjustment of the water content and the pH of the soil.....	7
8.3.5 Handling and storage of the soil.....	7
8.4 Start-up and execution of the test.....	7
9 Calculation and expression of results	9
9.1 Calculation.....	9
9.1.1 Percentage biodegradation from oxygen consumption values.....	9
9.1.2 Percentage biodegradation from carbon dioxide evolved.....	9
9.2 Expression and interpretation of results.....	10
10 Validity of results	10
11 Test report	10
Annex A (informative) Principle of a manometric respirometer (example)	12
Annex B (informative) Example of a system for measuring the amount of carbon dioxide evolved	13
Annex C (informative) Examples of methods for the determination of evolved carbon dioxide	14
Annex D (informative) Theoretical oxygen demand (ThOD)	16
Annex E (informative) Example of a determination of the amount and the molecular mass of water-insoluble polymer remaining at the end of a biodegradation test	17
Annex F (informative) Examples of long-term tests	18
Annex G (informative) Interlaboratory test	22
Bibliography	26

Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 14, *Environmental aspects*.

This third edition cancels and replaces the second edition (ISO 17556:2012), which has been technically revised. The main changes compared to the previous edition are as follows:

- a) the unit for BOD, COD and DIC has been corrected (see [Clause 3](#));
- b) the formula for calculating the percent biodegradation has been modified (see [9.1.1](#));
- c) the test period has been revised to two years at the longest (see [Clause 4](#));
- d) the number of replicates has been corrected to three (see [9.2](#)).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

A number of plastic materials and products have been designed for applications ending up in or on soil. They have been developed for applications where biodegradation is beneficial from a technical, environmental, social or economic standpoint. Examples can be found in agriculture (e.g. mulching film), horticulture (e.g. twines and clips, flower pots, pins), funeral items (e.g. body bags), recreation (e.g. plastic "clay" pigeons for shooting, hunting cartridges), etc. In many cases, recovery and/or recycling of these plastic items is either difficult or not economically viable. Various types of biodegradable plastics have been developed which have been designed to biodegrade and disappear in situ at the end of their useful life. Several International Standards specify test methods for determining the ultimate aerobic or anaerobic biodegradation of plastic materials in aqueous or compost conditions. Considering the use and disposal of biodegradable plastics, it is important to establish a test method to determine the ultimate aerobic biodegradation of such plastic materials in soil.