
**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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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](#)).

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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.

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