



BSI Standards Publication

Plastics — Determination of ignition temperature using a hot-air furnace

National foreword

This British Standard is the UK implementation of ISO 871:2022. It supersedes BS ISO 871:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/26, Burning behaviour of plastics and rubbers.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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© The British Standards Institution 2022
Published by BSI Standards Limited 2022

ISBN 978 0 539 06921 1

ICS 13.220.40; 83.080.01

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2022.

Amendments/corrigenda issued since publication

Date	Text affected
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INTERNATIONAL
STANDARD

ISO
871

Fourth edition
2022-02-23

**Plastics — Determination of ignition
temperature using a hot-air furnace**

*Plastiques — Détermination de la température d'allumage au moyen
d'un four à air chaud*



Reference number
ISO 871:2022(E)

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Apparatus	2
5.1 Option 1 — Setchkin furnace.....	2
5.2 Option 2 – ISO 1182 refractory tube furnace.....	4
5.2.2 Test furnace.....	6
6 Location of thermocouples	9
7 Test specimens	9
8 Procedure	10
8.1 Flash-ignition temperature (FIT).....	10
8.2 Spontaneous-ignition temperature (SIT).....	11
9 Precision	12
10 Test report	12
Annex A (informative) Results obtained by interlaboratory trials using Option 1 (Setchkin furnace)	13
Annex B (informative) Typical designs of test apparatus	15
Bibliography	17

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 4, *Burning behaviour*.

This fourth edition cancels and replaces the third edition (ISO 871:2006), which has been technically revised.

The main changes compared to the previous edition are as follows.

- An option to use a modification of the equipment used for ISO 1182 to assess ignitability has been added.
- Mandatory information has been provided throughout the document.

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.

Plastics — Determination of ignition temperature using a hot-air furnace

1 Scope

1.1 This document specifies a laboratory method for determining the flash-ignition temperature and spontaneous-ignition temperature of plastics using a hot-air furnace. It is one of a number of methods in use for evaluating the reaction of plastics to the effects of ignition sources.

NOTE Information on additional ignition methods can be found in ISO 10093.

1.2 This method does not give a direct measure of the combustibility or rate of burning of a material or any definition of the safe upper limit of temperature for the plastics in use, and it is inappropriate to use it alone to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test are suitable for use as elements of a fire hazard or fire risk assessment which takes into account all of the factors pertinent to an assessment of the fire hazard of a particular end use.

1.3 Tests made under conditions of this method are potentially of considerable value in comparing the relative ignition characteristics of different materials. Values obtained represent the lowest ambient air temperature that has the potential to cause ignition of the material under the conditions of this test. Test values are expected to rank materials according to ignition susceptibility under actual use conditions.

1.4 The results of this test method are not intended for fire safety engineering calculations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 1182, *Reaction to fire tests for products — Non-combustibility test*

ISO 13943, *Fire safety — Vocabulary*

IEC 60584-1, *Thermocouples Part 1 EMF Specifications And Tolerances*

IEC 60584-2:1982, *Thermocouples — Part 2: Tolerances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13943 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>