BS EN 17706:2024

BSI Standards Publication

Plant biostimulants — Determination of inorganic arsenic

Documents
Document Sharing Hub

Full document details: BS EN 17706:2024

National foreword

This British Standard is the UK implementation of EN 17706:2024. It supersedes PD CEN/TS 17706:2022, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee W/-, Miscellaneous Standards.

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

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association. It is intended to support requirements of the EU legislation detailed in the European Foreword. A European Annex, usually Annex ZA or ZZ, describes how this publication relates to that EU legislation.

For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. Therefore Annex ZA/ZZ in the European text, and references to EU legislation, are still valid for this market.

UK Government is responsible for legislation. For information on legislation and policies relating to that legislation, consult the relevant pages of www.gov.uk.

© The British Standards Institution 2024
Published by BSI Standards Limited 2024

ISBN 978 0 539 24203 4

Documents
Document Sharing Hub

Full document details: BS EN 17706:2024

ICS 65.080

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2024.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Documents
Document Sharing Hub

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17706

November 2024

ICS 65.080

Supersedes CEN/TS 17706:2022

English Version

Plant biostimulants - Determination of inorganic arsenic

Biostimulants des végétaux - Dosage de l'arsenic inorganique

Pflanzen-Biostimulanzien - Bestimmung von anorganischem Arsen

This European Standard was approved by CEN on 26 August 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2024 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 17706:2024 E

Documents
Document Sharing Hub

Full document details: BS EN 17706:2024

Contents

Page

European foreword 3
Introduction 4
1 Scope 5
2 Normative references 5
3 Terms and definitions 5
4 Principle 6
5 Reagents 6
6 Apparatus 8
7 Sampling 9
8 Procedure 9
8.1 Sample preparation 9
8.2 Water bath extraction 9
8.3 Preparation of the calibration solutions 9
8.4 Measurement 9
8.4.1 General instrumental conditions 9
8.4.2 HPLC-ICP/MS measurement of inorganic arsenic 10
9 Calculation and expression of the results 12
9.1 Integration of peaks 12
9.2 Calculation of inorganic arsenic in the samples 12
10 Test report 13
Annex A (informative) Examples of typical chromatographic separation 14
Annex B (informative) Results of the inter-laboratory study 18
B.1 Inter-laboratory tests 18
B.2 Statistical results for determination of inorganic arsenic 18
Annex ZA (informative) Relationship of this European Standard and the essential requirements of Regulation (EU) 2019/1009 making available on the market of EU fertilising products aimed to be covered 20
Bibliography 21

Documents
Document Sharing Hub
Full document details: BS EN 17706:2024

European foreword

This document (EN 17706:2024) has been prepared by Technical Committee CEN/TC 455 "Plant Biostimulants", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2025, and conflicting national standards shall be withdrawn at the latest by May 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN TS 17706:2022.

In comparison with the previous edition no technical changes were applied in this document. The following main editorial changes have been made:

— Introduction;

— Scope – text regarding blends changed;

— Annex B – results of the interlaboratory study added;

— Annex ZA added;

— Bibliography reordered.

This document has been prepared under a Standardization Request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

AVA Documents
Document Sharing Hub

Full document details: BS EN 17706:2024

Introduction

The European Committee for Standardization (CEN) was requested by the European Commission (EC) to draft European Standards or European Standardization deliverables to support the implementation of Regulation (EU) 2019/1009 of 5 June 2019 [1] laying down rules on the making available on the market of EU fertilising products ("FPR" or "Fertilising Products Regulation").

This standardization request, presented as SR M/564 and relevant amendments, also contributes to the Communication on "Innovating for Sustainable Growth: A Bio economy for Europe". The interest in plant biostimulants has increased significantly in Europe as a valuable tool to use in agriculture. Standardization was identified as having an important role in order to promote the use of biostimulants. The work of CEN/TC 455 seeks to improve the reliability of the supply chain, thereby improving the confidence of farmers, industry, and consumers in biostimulants, and will promote and support commercialisation of the European biostimulant industry.

The standard is based on a mild acid oxidative extraction of the arsenic species followed by liquid chromatography (HPLC or IC) coupled to the element-specific detector ICP-MS for the determination of the mass fraction of inorganic arsenic.

The other standards developed for determination of inorganic arsenic content in animal feedingstuffs and foodstuffs were studied as a basis of the described method [2], [3], [4], [5].

The inter-laboratory study reflects the final statistical characteristics of the method for the determination of inorganic arsenic content in plant biostimulants. The results are given in Annex B (informative).

WARNING — Persons using this document should be familiar with usual laboratory practice. This document does not purport to address all of the safety issues, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this document are carried out by suitably trained staff.

Documents
Document Sharing Hub
Full document details: BS EN 17706:2024