

<b>STN P</b>	<b>Rastlinné biostimulátory Stanovenie špecifických prvkov Časť 3: Stanovenie ortuti</b>	<b>STN P CEN/TS 17701-3</b>  46 5602
------------------	--	--

Plant biostimulants - Determination of specific elements - Part 3: Determination of mercury

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/22

Táto predbežná slovenská technická norma je určená na overenie. Prípadné pripomienky pošlite do marca 2024 Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

Obsahuje: CEN/TS 17701-3:2022

**134945**

TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
TECHNISCHE SPEZIFIKATION

# CEN/TS 17701-3

March 2022

ICS 07.080

English Version

## Plant biostimulants - Determination of specific elements - Part 3: Determination of mercury

Biostimulants des plantes - Détermination des  
éléments spécifiques - Partie 3 : Détermination du  
mercure

Biostimulanzien für die pflanzliche Anwendung -  
Bestimmung spezifischer Elemente - Teil 3:  
Bestimmung von Quecksilber

This Technical Specification (CEN/TS) was approved by CEN on 3 January 2022 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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, Turkey 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**

**CEN/TS 17701-3:2022 (E)**

<b>Contents</b>		Page
<b>European foreword</b> .....		<b>3</b>
<b>Introduction</b> .....		<b>4</b>
<b>1</b>	<b>Scope</b> .....	<b>5</b>
<b>2</b>	<b>Normative references</b> .....	<b>5</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>5</b>
<b>4</b>	<b>Principle</b> .....	<b>5</b>
<b>5</b>	<b>Interferences</b> .....	<b>6</b>
<b>6</b>	<b>Reagents</b> .....	<b>6</b>
<b>7</b>	<b>Apparatus</b> .....	<b>7</b>
<b>8</b>	<b>Procedure</b> .....	<b>8</b>
<b>9</b>	<b>Calculation and expression of the results</b> .....	<b>9</b>
<b>10</b>	<b>Test report</b> .....	<b>10</b>
<b>Annex A (informative) Methods for mercury determination</b> .....		<b>11</b>
<b>Bibliography</b> .....		<b>13</b>

## European foreword

This document (CEN/TS 17701-3:2022) has been prepared by the Technical Committee CEN/TC 455 “Plant Biostimulants”, the secretariat of which is held by AFNOR.

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 has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

The CEN/TS 17701 series, *Plant biostimulants — Determination of specific elements*, consists of the following parts:

- *Part 1: Digestion by aqua regia for subsequent determination of elements;*
- *Part 2: Determination of total content of Cd, Pb, Ni, As, Cr, Cu and Zn;*
- *Part 3: Determination of mercury.*

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 announce this Technical Specification: 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, Turkey and the United Kingdom.

## CEN/TS 17701-3:2022 (E)

### Introduction

This document was prepared by the experts of CEN/TC 455 “Plant Biostimulants”. 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 laying down rules on the making available on the market of EU fertilizing products (“FPR” or “Fertilising Products Regulation”).

This standardization request, presented as M/564, also contributes to the Communication on “Innovating for Sustainable Growth: A Bio economy for Europe”. The Working Group 4 “Other safety parameters”, was created to develop a work program as part of this request. The Technical Committee CEN/TC 455 “Plant Biostimulants” was established to carry out the work program that will prepare a series of standards. The interest in 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 preparation of this document is based on a standardization request to CEN by the European Commission and the European Free Trade Association (Mandate M/564) concerning the modernization of methods of analysis of fertilizers in the framework of Regulation (EU) 2019/1009 of the European Parliament and of the Council.

This document concerns the analytical measurement step for the determination of mercury in plant biostimulants after digestion by aqua regia according to CEN/TS 17701-1. It covers cold vapour generation followed by mercury determination using atomic absorption spectrophotometry (AAS). Different cold vapour generation techniques can be used (flow injection, segmented flow, batch). This document also includes a method based on a direct amalgamation technique which is widely used in many analytical laboratories. It is also possible to use other suitable methods of mercury determination described in Annex A if users prove that the methods give the same results as the methods described in this document.

**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.**

## **1 Scope**

This document specifies a method for determination of the content of mercury (Hg) in plant biostimulants using (cold) vapour generation apparatus coupled to an atomic absorption spectrophotometer and a method using a direct amalgamation technique. It is applicable to aqua regia digests prepared according to CEN/TS 17701-1.

**NOTE** It is also possible to use other suitable methods for the determination of mercury described in Annex A if users prove that the method gives the same results as the methods described in this document.

This document is also applicable to the blends of fertilizing products where plant biostimulants are the main part of the blend. Otherwise, the Technical Specification for the main part of the blend applies.

## **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.

CEN/TS 17701-1, *Plant biostimulants — Determination of specific elements — Part 1: Digestion by aqua regia for subsequent determination of elements*

CEN/TS 17704, *Plant biostimulants — Determination of dry matter*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**