Nuclear fuel technology - Dissolution of plutonium dioxide-containing materials - Part 2: Dissolution of MOX pellets and powders (ISO 18256-2:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 18256-2:2021 sisaldab Euroopa standardi EN ISO 18256-2:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 18256-2:2021 consists of the English text of the European standard EN ISO 18256-2:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.02.2021.	Date of Availability of the European standard is 10.02.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Nuclear fuel technology - Dissolution of plutonium dioxide-containing materials - Part 2: Dissolution of MOX pellets and powders (ISO 18256-2:2019)

Technologie du combustible nucléaire - Dissolution des matériaux contenant du dioxyde de plutonium - Partie 2: Dissolution de pastilles et poudres de MOX (ou mélanges d'oxydes) (ISO 18256-2:2019)

This European Standard was approved by CEN on 18 January 2021.

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

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

Ref. No. EN ISO 18256-2:2021 E

European foreword

The text of ISO 18256-2:2019 has been prepared by Technical Committee ISO/TC 85 "Nuclear energy, nuclear technologies, and radiological protection" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18256-2:2021 by Technical Committee CEN/TC 430 "Nuclear energy, nuclear technologies, and radiological protection" 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 August 2021, and conflicting national standards shall be withdrawn at the latest by August 2021.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 18256-2:2019 has been approved by CEN as EN ISO 18256-2:2021 without any modification.

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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).

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This document was prepared by Technical Committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 5, *Nuclear installations, processes and technologies*.

A list of all the parts in the ISO 18256 series can be found on the ISO website.

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.

Introduction

This document describes a method to dissolve samples consisting of MOX pellets or powders to provide suitable aliquots for subsequent analysis of elemental concentration and isotopic composition.

Nuclear fuel technology — Dissolution of plutonium dioxide-containing materials —

Part 2: Dissolution of MOX pellets and powders

1 Scope

This document specifies the dissolution of samples consisting of MOX pellets or powders to provide suitable aliquots for subsequent analysis of elemental concentration and isotopic composition.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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 http://www.electropedia.org/

4 Summary of the method

Among the factors affecting the formation of solid solution and hence, the ease of dissolution are:

— the method of fuel fabrication (i.e. mechanically blended oxides, co-precipitated oxides, microwave denitrated oxides or sol-gel oxides);

— the degree of sintering.

Therefore, different dissolution methods are applied depending on the type of MOX sample to be dissolved.

The radiological hazard of plutonium and the need to minimize the waste shall be taken into account when choosing the mass of the sample to be dissolved. A MOX mass of 0,1 g to 10 g should be sufficient for most of the analyses. Some analysis may however require more material.

For the highest possible assay accuracy only gravimetric dissolution methods are recommended. However for a less critical assay, volumetric dissolution may be appropriate.