SLOVENSKI STANDARD
SIST EN ISO 21613:2018

01-februar-2018

Prah in sintrani peleti (U, Pu)O2 - Ugotavljanje klora in fluora (ISO 21613:2015)

(U, Pu)O2 Powders and sintered pellets - Determination of chlorine and fluorine (ISO 21613:2015)

(U, Pu)O2-Pulver und gesinterte Pellets - Bestimmung von Chlor und Fluor (ISO 21613:2015)

Poudres et pastilles frittées (U,Pu)O2 - Détermination du chlore et du fluor (ISO 21613:2015)

Ta slovenski standard je istoveten z: **EN ISO 21613:2017**

ICS:

27.120.30	Cepljivi materiali in jedrska gorivna tehnologija	Fissile materials and nuclear fuel technology

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English Version

(U, Pu)O2 Powders and sintered pellets - Determination of chlorine and fluorine (ISO 21613:2015)

Poudres et pastilles frittées (U,Pu)O2 - Détermination du chlore et du fluor (ISO 21613:2015)

(U, Pu)O2-Pulver und gesinterte Pellets - Bestimmung von Chlor und Fluor (ISO 21613:2015)

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European foreword

The text of ISO 21613:2015 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 21613:2017 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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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INTERNATIONAL STANDARD

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(U, Pu)O2 Powders and sintered pellets — Determination of chlorine and fluorine

Poudres et pastilles frittées (U,Pu)O2 — Détermination du chlore et du fluor

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Foreword

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The committee responsible for this document is ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 5, *Nuclear fuel cycle*.

(U, Pu)O2 Powders and sintered pellets — Determination of chlorine and fluorine

1 Scope

This International Standard describes a method for determining chlorine and fluorine in mixed (U,Pu)O_2 powders and sintered pellets. It is applicable for the analysis of samples containing 5 µg.g^{-1} to 50 µg.g^{-1} of chlorine and 2 µg.g^{-1} to 50 µg.$g^{-1}$of fluorine.

For UO_2 powder and sintered pellets, refer to ISO 22875.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 22875, *Nuclear energy — Determination of chlorine and fluorine in uranium dioxide powder and sintered pellets*

ISO 9892, *Uranium metal, uranium dioxide powder and pellets, and uranyl nitrate solutions — Determination of fluorine content — Fluoride ion selective electrode method*

3 Principle

The samples are pyrohydrolyzed at 850 °C – 1 000 °C in a tubular furnace with steam or moist oxygen. Chlorine and fluorine are trapped as halogenated acids and entrained in an aqueous solution. Chloride and fluoride ions are measured using selective electrodes or another appropriate method, for instance, ionic chromatography.

4 Reagents

Use only reagents of recognized analytical grade.

4.1 Demineralised water, complying with at least grade 1 in accordance with ISO 3696 is recommended.

4.2 Anhydrous sodium chloride (NaCl), analytical grade.

4.3 Anhydrous sodium fluoride (NaF), analytical grade.

4.4 Concentrated sodium hydroxide solution, w(NaOH) = 32 %, relative density approximately 1,35 g.ml^{-1}.

Concentrated sodium hydroxide solution (4.4) is used to prepare sodium hydroxide solutions (4.4.1, 4.4.2, and 4.4.3). Concentrations of solutions (4.4.1, 4.4.2, and 4.4.3) are examples of reference solutions that are acceptable for use.

4.4.1 Sodium hydroxide solution, c(NaOH) = 5 mol.l^{-1}.

This reagent can also be prepared by using solid sodium hydroxide in various ways.