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Nuclear fuel technology - Sintered (U,Pu)O₂ pellets - Guidance for ceramographic preparation for microstructure examination (ISO 22765:2016)

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

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Technologie du combustible nucléaire - Pastilles
(U,Pu)O₂ frittées - Préconisations relatives à la
préparation céramographique pour examen de la
microstructure (ISO 22765:2016)

Kernbrennstofftechnologie - Gesinterte (U,Pu)O₂-
Pellets - Leitfaden für die keramographische
Herstellung der Proben zur Untersuchung des
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European foreword

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**Nuclear fuel technology — Sintered
(U,Pu)O₂ pellets — Guidance for
ceramographic preparation for
microstructure examination**

*Technologie du combustible nucléaire — Pastilles (U,Pu)O₂ frittées
— Préconisations relatives à la préparation céramographique pour
examen de la microstructure*



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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
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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 installations, processes and technologies*.

Nuclear fuel technology — Sintered (U,Pu)O₂ pellets — Guidance for ceramographic preparation for microstructure examination

1 Scope

This document describes the ceramographic procedure used to prepare sintered (U,Pu)O₂ pellets for qualitative and quantitative examination of the pellet microstructure.

The examinations are performed before and after thermal treatment or chemical etching.

They allow

- observation of any cracks, intra- and intergranular pores or inclusions, and
- measurement of the grain size, porosity and plutonium homogeneity distribution.

The mean grain diameter is measured by one of the classic methods: counting (intercept method), comparison with standard grids or typical images, etc.[\[2\]](#) The measurement of individual grain sizes requires uniform development of the microstructure over the entire specimen.

The plutonium cluster and pore distribution and localization are generally analysed by automatic image analysis systems. The plutonium distribution is usually revealed by chemical etching but alpha-autoradiography can also be used. The first technique avoids the tendency for autoradiography to exaggerate the size of plutonium-rich clusters due to the distance the alpha particles travel away from the source.

2 Normative references

There are no normative references in this document.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN