

DIN EN ISO 9463:2020-09 (E)

Erscheinungsdatum: 2020-08-21

Nuclear energy - Nuclear fuel technology - Determination of plutonium in nitric acid solutions by spectrophotometry (ISO 9463:2019); English version prEN ISO 9463:2020

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Chemical conditions	1
5.1 Stability of Pu(VI)	1
5.2 Rate of oxidation of Pu(IV) to Pu(VI)	2
5.3 Destruction of the excess oxidant	2
5.4 Comparison of Ce(IV) and Ag(II)	2
5.5 Molar extinction coefficient of Pu(VI)	2
6 Reagents	3
6.1 General	3
6.2 Common reagents for methods using silver oxide or cerium as oxidant	3
6.3 Reagents for method using silver oxide as oxidant	3
6.4 Reagents for method using Ce(IV) as oxidant	3
7 Apparatus	4
8 Test procedure	4
8.1 Preparation of the different solutions	4
8.1.1 Plutonium calibration solution	4
8.1.2 Sample solutions	5
8.2 Spectrophotometer setup	6
8.3 Measurements	6
8.3.1 Background measurement	6
8.3.2 Measurements on the calibration solution	7
8.3.3 Measurements on the sample solution	7
9 Expression of the result	7
9.1 Calculation of the concentration of plutonium in the sample	7
9.2 Reproducibility	8
9.3 Detection limit	8
10 Interferences	8
10.1 Anions	8
10.2 Cations	9
Annex A (informative) Preparation of silver (II) oxide (AgO)	11
Bibliography	12