

DIN EN ISO 12183:2024-08 (E)

Nuclear fuel technology - Controlled-potential coulometric measurement of plutonium (ISO 12183:2024); English version EN ISO 12183:2024

Contents		Page
Foreword.....		iv
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	1
5	Reagents	2
6	Apparatus	2
7	Procedure	8
	7.1 Plutonium determination.....	8
	7.2 Analysis of subsequent test samples.....	14
8	Expression of quantity values	14
	8.1 Calculation of the electrical calibration factor.....	14
	8.2 Calculation of the blank.....	15
	8.3 Fraction of electrolysed plutonium.....	15
	8.4 Plutonium, amount of substance and mass.....	16
	8.5 Quality control.....	16
9	Characteristics of the method	17
	9.1 Repeatability.....	17
	9.2 Confidence interval.....	17
	9.3 Analysis time.....	17
10	Interferences	17
11	Procedure variations and optimization	21
	11.1 Accountability measurements and reference material preparation.....	21
	11.2 Process control measurements.....	21
	11.3 Measurement cell design.....	22
	11.4 Electrolyte and electrode options.....	22
	11.5 Test sample size.....	22
	11.6 Background current corrections.....	23
	11.7 Correction for iron.....	23
	11.8 Control-potential adjustment.....	24
	11.9 Calibration methodologies.....	25
12	Traceability to SI units	25
	Annex A (informative) Purification by anion-exchange separation	26
	Annex B (informative) Determination of formal potential, E_0	28
	Bibliography	29