ISO 13304-2:2020 (E)

Radiological protection — Minimum criteria for electron paramagnetic resonance (EPR) spectroscopy for retrospective dosimetry of ionizing radiation — Part 2: Ex vivo human tooth enamel dosimetry

Contents

	Foi	Foreword		
	Inti	Introduction		
1	Sco	Scope		
2	No	Normative references		
3	Ter	Terms and definitions		
4	Ар	Apparatus		
	4.4	Charifications for EDD spectromater		
	4.1	Specifications for EPR spectrometer		
	4.2 4.3	Spectrometer sensitivity		
		Microwave bridge		
	4.4	Magnetic field		
	4.5	Microwave resonator		
5	Pre	Preparation of tooth enamel samples		
	5.1	General		
	5.2	Applicable grain size		
6	Measurement of the EPR spectrum			
	6.1	Description of spectrum		
	6.2	Applicable measurement parameters and conditions		
	6.2.1	General		
	6.2.2	Microwave power		
	6.2.3	Magnetic centre field		
	6.2.4	Magnetic field sweep width		
	6.2.5	Magnetic field sweep time		
	6.2.6	Time constant of signal channel receiver		
	6.2.7	EPR spectrum resolution		
	6.2.8	Conversion time of spectrum acquisition		
	6.2.9	Magnetic field modulation amplitude		
	6.2.10	Number of spectrum accumulations		
	6.2.11	Sample positioning and loading		
	6.2.12	Dependence of EPR signal intensity on sample mass		
	6.2.13	Use of standard samples		
	6.2.14	Number of measurement repetitions		
7	Assessment of the RIS intensity			
	7.1	General		
	7.2	Intrinsic EPR signals from microwave resonator and sample tube		
8	Irra	adiation of tooth enamel calibration samples for low linear energy transfer (LET) exposure		
9	Co	Conversion of the RIS intensity into an estimate of absorbed dose		
10	Cal	Calculation of uncertainty on dose estimate		
11		Minimum detectable dose		
12	C 0	Confidentiality and othical considerations		

13	Lab	oratory safety requirements	
	13.1 13.2 13.3 13.4 13.5 13.6	General Magnetic field safety requirements Electromagnetic frequency requirements Chemical safety requirements Health risks from tooth samples Optical safety requirements	
14	Responsibility of the customer		
15	Responsibility of the service laboratory		
16	Quality assurance and quality control (QA and QC)		
	16.1 16.2 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5	General Performance checks General Performance checks by inter-laboratory comparisons Performance checks of sample preparation Performance checks of general measurement laboratory conditions Performance checks of EPR spectrometer	
17	Collection/selection and identification of samples		
18	Transportation and storage of samples		
19	Minimum documentation requirements		

Page count: 22