ISO 6980-1:2023-11 (E)

Nuclear energy - Reference beta-particle radiation - Part 1: Methods of production

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 2

4 Requirementsforreferencebeta-particleradiationfieldsatthecalibrationdistance 2
4.1 Standard test conditions 2
4.2 Energy of the reference radiation fields 2
4.3 Shape of the beta-particle spectrum 2
4.4 Uniformity of the dose rate 3
4.5 Photon contamination 3
4.6 Variation of the beta-particle emission with time 3

5 Radionuclidessuitableforreferencebeta-particleradiationfields 3

6 Source characteristics and their measurement 4
6.1 Fundamental characteristics of reference sources 4
6.1.1 Construction of reference sources 4
6.1.2 Measurement and/or simulation of characteristics of the reference radiation fields 4
6.1.3 Beta particle contamination 13
6.1.4 Photon contamination 13
6.2 Characteristics of the two series of reference beta-particle radiation fields 13
6.2.1 General 13
6.2.2 Series 1 reference beta-particle radiation fields 13
6.2.3 Series 2 reference beta-particle radiation fields 14

7 Source calibration 15

Annex A (normative) Tissue substitutes 17

Annex B (normative) Reference conditions and standard test conditions 18

Annex C (informative) Characteristics of the recommended sources --Examples of source construction 20

Bibliography 21