ISO 7503-3:2016-01 (E)

Measurement of radioactivity - Measurement and evaluation of surface contamination - Part 3: Apparatus calibration

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms,definitions,symbols,andabbreviatedterms 2
3.1 Terms and definitions 2
3.2 Symbols and abbreviated terms 2

4 Surface contamination evaluation methods 3

5 Principal direct calibration methodology including summation correction 4
5.1 General 4
5.2 Calibration for radionuclides with single emission decay schemes 4
5.3 P-factor for radionuclides with uncomplex decay schemes 6
5.4 P-factors for radionuclides with complex decay schemes 7
5.5 Generic estimation of instrument response 8
5.5.1 Determination of the energy response of the instrument 8
5.5.2 Modelling of the decay paths of the radionuclide of interest 9
5.5.3 Determination of the overall instrument response 12
5.5.4 Alternative determination of the overall instrument response 12
5.6 Conclusion 12

6 Test report 12

Annex A (normative) Alternative calibration methodology 14

Annex B (informative) Direct surface contamination evaluation: Numeric calibration examples 25

Annex C (informative) Surface contamination evaluation for radionuclide mixtures 37

Annex D (informative) Calibration for the indirect evaluation of surface contaminations 40

Annex E (informative) Application of ISO 11929 for the direct evaluation of surface contaminations 44

Annex F (informative) Application of ISO 11929 for the indirect evaluation of surface contaminations 56

Bibliography 64