ISO 11843-6:2019 (E)

Capability of detection — Part 6: Methodology for the determination of the critical value and the minimum detectable value in Poisson distributed measurements by normal approximations

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Measurement system and data handling

5 Computation by approximation

- 5.1 The critical value based on the normal distribution
- 5.2 Determination of the critical value of the response variable
- 5.3 Sufficient capability of the detection criterion
- 5.4 Confirmation of the sufficient capability of detection criterion

6 Reporting the results from an assessment of the capability of detection

7 Reporting the results from an application of the method

Annex A (informative) Symbols used in this document

Annex B (informative) Estimating the mean value and variance when the Poisson distribution is approximated by the normal distribution

Annex C (informative) An accuracy of approximations

Annex D (informative) Selecting the number of channels for the detector

Annex E (informative) Examples of calculations

- E.1 Example 1: Measurement of hazardous substances by X-ray diffractometry (XRD)
- E.1.1 Statistical analysis
- E.1.2 Estimating the minimum detectable concentration of asbestos
- E.2 Example 2: Measurement of contamination on the surface of silicon wafers by X-ray photoelectron spectroscopy (XPS)
- E.2.1 Statistical analysis
- E.2.2 Estimating the minimum detectable concentration of hydrocarbon by the approximation

Page count: 23