# ISO 5725-2:1994-12 (E)

## Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method

## Contents

Page


1 Scope ..... 1
2 Normative references ..... 2
3 Definitions ..... 2
4 Estimates of the parameters in the basic model ..... 2
5 Requirements for a precision experiment ..... 2
5.1 Layout of the experiment ..... 2
5.2 Recruitment of the laboratories ..... 3
5.3 Preparation of the materials ..... 3
6 Personnel involved in a precision experiment ..... 5
6.1 Panel ..... 5
6.2 Statistical functions ..... 5
6.3 Executive functions ..... 5
6.4 Supervisors ..... 5
6.5 Operators ..... 6
7 Statistical analysis of a precision experiment ..... 6
7.1 Preliminary considerations ..... 6
7.2 Tabulation of the results and notation used ..... 7
7.3 Scrutiny of results for consistency and outliers ..... 9
7.4 Calculation of the general mean and variances ..... 13
7.5 Establishing a functional relationship between precision values and the mean level *m* ..... 14
7.6 Statistical analysis as a step-by-step procedure ..... 16
7.7 The report to, and the decisions to be taken by, the panel ..... 20
8 Statistical tables ..... 21
A Symbols and abbreviations used in ISO 5725 ..... 25
B Examples of the statistical analysis of precision experiments ..... 27
B.1 Example 1: Determination of the sulfur content of coal (Several levels with no missing or outlying data) ..... 27
B.2 Example 2: Softening point of pitch (Several levels with missing data) ..... 32
B.3 Example 3: Thermometric titration of creosote oil (Several levels with outlying data) ..... 36
C Bibliography ..... 42