



Rubber and rubber products — Determination of precision for test method standards

Caoutchouc et produits en caoutchouc — Détermination de la fidélité de méthodes d'essai normalisées

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The reasons which led to the decision to publish this document in the form of a technical Report type 3 are explained in the Introduction.

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0. INTRODUCTION

This document presents required guidelines for (1) conducting TC45 interlaboratory test programs, (2) gives a special nomenclature system needed for the application of statistical methods to rubber technology with its strong emphasis on multi-step physical measurement procedures and (3) gives the format for expressing the results of precision testing as precision clauses in test method standards. A completely worked out and calculated example is given for the measurement of rubber viscosity via the Mooney Test.

This document is published as an ISO Technical Report to make it more readily available to all who require it for background information in the use of precision results in TC45 test method standards.

The use of test method standards in science and technology requires careful consideration in assessing their general precision and, where pertinent, their accuracy. Clearly outlining the objectives and the uses of test method standards prior to the determination of test precision is essential. A critical requirement for this is the development of a standardized nomenclature system. This document addresses these, and other issues important in evaluating precision for ISO TC-45 test method standards.

1. SCOPE

This practice presents guidelines for preparing clear and meaningful precision statements for ISO/TC-45 test method standards. These guidelines expand upon the content of ISO 5725-81, they give needed definitions particular to rubber technology testing, explain the potential uses for standard test methods, and give the requirements for interlaboratory programs needed in precision formulation. They also give the format for expressing precision.

2. FIELD OF APPLICATION

This standard practice is devoted to test method precision assessment and is limited to test method standards that:

Have test results expressed in terms of a quantitative continuous variable.

Have been fully developed and are in routine use in a number of laboratories.

3. REFERENCES

ISO 5725-81 - Precision of Test Methods - Determination of Repeatability and Reproducibility by Interlaboratory Tests.

ISO Standards Handbook #3; Statistical Methods (1981). (This handbook contains the following ISO Standards: 2602, 2854, 2859, 3207, 3301, 3494, 3534, 3951 and 5725.)

4. GENERAL PRINCIPLES

4.1 Preliminary Discussion.

4.1.1 This document is prepared to accommodate a broad range of test method standards and uses of test method standards. As such, it may seem overly complex to a particular technologist that uses test method standards in a rather narrow part of this broad spectrum of uses. The narrow-range user should make use of those portions of this document that are applicable and ignore those parts that do not directly apply.

4.1.2 This standard practice is not a substitute for ISO 5725 but is a supplement to it in the field of rubber technology to give guidance in addressing rubber testing problems. Since ISO 5725 does not address the issue of accuracy or bias neither does this TC-45 Standard. However, for purposes of clarification a paragraph on the meaning of accuracy or bias as compared to