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**Rubber and rubber additives —  
Determination of total sulfur content using  
an automatic analyser**

*Caoutchouc et additifs pour caoutchouc — Dosage du soufre total à l'aide  
d'un analyseur automatique*



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Printed in Switzerland

## Foreword

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International Standard ISO 15671 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analyses*.

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# Rubber and rubber additives — Determination of total sulfur content using an automatic analyser

**WARNING** — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

## 1 Scope

This International Standard specifies an instrumental (automatic analyser) method for the determination of total sulfur in rubber and rubber additives.

## 2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

### 2.1

#### **sample**

unit selected to represent the material to be analysed

### 2.2

#### **test portion**

actual material used in the analysis

### 2.3

#### **control sample**

material with a recognized content of sulfur, analysed with each set of test portions

## 3 Principle

**3.1** Specified is a reliable, rapid, instrumental (automatic analyser) method for determining total sulfur in rubber and rubber additives. The sulfur is determined by a single instrumental procedure consisting of weighing a test portion, placing it in the instrument and initiating the (subsequently automatic) analytical process. The analysis may be controlled manually to a limited degree, and a capability to perform computations automatically may be provided by the instrument used to perform the analysis.

**3.2** The actual process can vary substantially from instrument to instrument because a variety of means can be used to meet the primary requirements of the method. The method includes the following:

- a) conversion of sulfur-containing materials to sulfur dioxide in an oxygen stream;
- b) determination of the sulfur dioxide by one of three detection schemes, and hence the total sulfur content.

**3.3** In the **hydrogen peroxide detection** configuration, the sulfur dioxide is absorbed in hydrogen peroxide, converting sulfur dioxide to sulfuric acid which is subsequently titrated with standard alkali, enabling the sulfur to be calculated.