INTERNATIONAL STANDARD

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Rubber, vulcanized or thermoplastic — Determination of tendency to adhere to and corrode metals

Caoutchouc, vulcanisé ou thermoplastique — Détermination de la tendance à adhérer aux métaux et à les corroder

Reference number
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This fourth edition cancels and replaces the third edition (ISO 6505:2005), which has been technically revised.

Introduction

In assemblies which include both metallic and rubber components, it is essential to avoid unintentional adhesion of rubber to metal, and corrosion of the metal by the rubber. Adhesion occurs only where there is direct contact between the metal and the rubber, but corrosion can also arise, within a closed system, on metal components remote from the rubber, such corrosion being due to volatile materials emanating from the rubber.

Since some metals corrode more readily than others, it is not possible to specify optimum test conditions for assessing the resistance to corrosion of all metals and alloys. Furthermore, the ranking of a metal's susceptibility to corrosion will depend upon the environment in which it is exposed to the rubber, e.g. in the presence of high humidity the effects on steel, in particular, can be severe.

Rubber, vulcanized or thermoplastic — Determination of tendency to adhere to and corrode metals

WARNING 1 — 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.

WARNING 2 — Certain procedures specified in this International Standard might involve the use or generation of substances, or the generation of waste, that could constitute a local environmental hazard. Reference should be made to appropriate documentation on safe handling and disposal after use.

1 Scope

This International Standard specifies a method for the determination of the tendency of vulcanized or thermoplastic rubbers to adhere to and to corrode metals when exposed to a specified test environment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 18899:2004, *Rubber — Guide to the calibration of test equipment*

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

3 Principle

Rubber test pieces are held between metal test strips under specified conditions in a dry or wet atmosphere for a specified period.

Subsequent visual examination of the metal surface provides a subjective indication of the degree of adhesion to the metal by the rubber and corrosion of the metal.

4 Materials

4.1 Acetone, (for cleaning of metal) of recognized analytical quality.

4.2 Other suitable solvents, (for cleaning of rubber) of recognized analytical quality and which do not have any deleterious effects on the rubber under test.

4.3 Pumice powder, passing a test sieve of nominal aperture size 53 μm complying with the requirements of ISO 3310-1.

4.4 Distilled water, or water of equivalent purity.

