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Rubber, vulcanized or thermoplastic — Antistatic and conductive products — Determination of electrical resistance

Caoutchouc vulcanisé ou thermoplastique — Produits antistatiques et conducteurs — Détermination de la résistance électrique



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2878 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This fourth edition cancels and replaces the third edition (ISO 2878:2005), which has been technically revised to include a calibration schedule for the instruments used in the test (see Annex A).

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Introduction

The elimination or reduction of static voltages and charges on rubber products is important in many applications. By providing suitable leakage paths the charge can be dissipated. The antistatic properties of a product are also influenced by its electrostatic charging characteristics. This International Standard deals only with methods involving the use of leakage paths.

The addition of carbon black to a polymer in sufficient quantities causes a conductive network of carbon particles to be formed within the mixture, and materials with a wide range of electrical conductivity can be produced. The conductive network is sensitive to mechanical strain, and the electrical resistance of the material varies according to the degree of strain and the time and temperature history after straining. Antistatic properties can also be conferred on rubber materials by incorporating ionizable materials into the rubber mix.

A method for the measurement of the resistivity of specially prepared test pieces of antistatic and conductive rubber is described in ISO 1853.