INTERNATIONAL STANDARD

ISO 289-1

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Rubber, unvulcanized — Determinations using a shearing-disc viscometer —

Part 1:
Determination of Mooney viscosity

Caoutchouc non vulcanisé — Déterminations utilisant un consistomètre à disque de cisaillement —

Partie 1: Détermination de l'indice consistométrique Mooney

Reference number
ISO 289-1:1994(E)

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.

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.

International Standard ISO 289-1 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Physical and degradation tests*.

It cancels and replaces the first edition of ISO 289 (ISO 289:1985), of which it constitutes a technical revision.

ISO 289 consists of the following parts, under the general title *Rubber, unvulcanized — Determinations using a shearing-disc viscometer*:

— *Part 1: Determination of Mooney viscosity*

— *Part 2: Determination of pre-vulcanization characteristics*

Annex A of this part of ISO 289 is for information only.

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Rubber, unvulcanized — Determinations using a shearing-disc viscometer —

Part 1:
Determination of Mooney viscosity

1 Scope

This part of ISO 289 specifies a method of use of a shearing-disc viscometer for measuring the Mooney viscosity of uncompounded or compounded rubbers.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 289. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 289 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 471:1983, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces.*

ISO 1795:1992, *Rubber, raw, natural and synthetic — Sampling and further preparative procedures.*

ISO 2393:1994, *Rubber test mixes — Preparation, mixing and vulcanization — Equipment and procedures.*

ISO 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K).*

ISO/TR 9272:1986, *Rubber and rubber products — Determination of precision for test method standards.*

3 Principle

The torque which has to be applied under specified conditions in order to rotate a metal disc in a cylindrical chamber formed from mating dies filled with rubber is measured. The resistance offered by the rubber to this rotation is expressed in arbitrary units as the Mooney viscosity of the test piece.

4 Apparatus

The essential parts of the apparatus (see figure 1) are:

a) two dies to form a cyclindrical cavity;

b) a rotor;

c) a means for maintaining the dies at a constant temperature;

d) a means for maintaining a specified closure pressure;

e) a means for rotating the rotor at constant angular velocity;

f) a means for indicating the torque required to rotate the rotor.

The rotor and die cavity have the dimensions shown in table 1.