
INTERNATIONAL STANDARD



667

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION · МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ · ORGANISATION INTERNATIONALE DE NORMALISATION

Compounded rubber — Determination of rate of cure using the shearing disk viscometer

Mélanges à base d'élastomères — Détermination de la vitesse de vulcanisation — Méthode au consistomètre à cisaillement

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Descriptors : elastomers, synthetic elastomers, natural rubber, tests, vulcanizing, speed, measurement.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 45 has reviewed ISO Recommendation R 667 and found it technically suitable for transformation. International Standard ISO 667 therefore replaces ISO Recommendation R 667-1968 to which it is technically identical.

ISO Recommendation R 667 was approved by the Member Bodies of the following countries :

Australia	Hungary	Spain
Austria	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	United Kingdom
Chile	Japan	U.S.A.
Colombia	Korea, Rep. of	U.S.S.R.
Czechoslovakia	Netherlands	Yugoslavia
France	New Zealand	
Germany	Poland	

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 667 into an International Standard.

Compounded rubber – Determination of rate of cure using the shearing disk viscometer

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining the rate of cure of unvulcanized compounded stocks of rubbers by means of the shearing disk viscometer.

2 REFERENCE

ISO/R 289, *Determination of viscosity of natural and synthetic rubbers by the shearing disk viscometer.*

3 PROCEDURE

Determine the viscosity of the compounded stock in accordance with the method given in ISO/R 289, using the rotor 38 mm in diameter.

Keep the test temperature of the die cavity within $\pm 0,5^{\circ}\text{C}$ of the temperature appropriate to the compound under test (no single temperature can be specified that would be suitable for all compounds). The time starts from the moment the die cavity is closed. Start the rotor 1 min after the closing of the die. Continue the test until the Mooney viscosity reaches 40 units above the minimum.

From the graph of Mooney viscosity against time, or from the continuous curve recorded, obtain the following parameters (see figure) :

M_{\min} i.e. the minimum viscosity reading;

t_5 i.e. the time, in minutes, for the viscosity to reach a value 5 units above the minimum;

t_{35} i.e. the time, in minutes, for the viscosity to reach a value 35 units above the minimum.

4 TEST REPORT

The test report shall state the following particulars :

- test temperature, i.e. the measured temperature of the die cavity;
- M_{\min} in Mooney viscosity units;
- t_5 and t_{35} in minutes;
- $\Delta t = (t_{35} - t_5)$.