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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 667

DETERMINATION OF RATE OF CURE OF RUBBER COMPOUNDS BY THE SHEARING DISK VISCOMETER

1st EDITION

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Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 667, *Determination of rate of cure of rubber compounds by the shearing disk viscometer,* was drawn up by Technical Committee ISO/TC 45, *Rubber,* the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question by the Technical Committee began in 1948 and led, in 1962, to the adoption of a Draft ISO Recommendation.

In November 1963, this Draft ISO Recommendation (No. 617) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

One Member Body opposed the approval of the Draft :

U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1968, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 667 February 1968

DETERMINATION OF RATE OF CURE OF RUBBER COMPOUNDS BY THE SHEARING DISK VISCOMETER

1. SCOPE

This ISO Recommendation describes the procedure for determining the rate of cure of unvulcanized compounded stocks of rubbers by means of the shearing disk viscometer.

2. PROCEDURE

The viscosity of the compounded stock should be determined in accordance with the method given in ISO Recommendation R 289, *Determination of viscosity of natural and synthetic rubbers by the shearing disk viscometer,* using the rotor 38 mm in diameter.

The test temperature of the die cavity should be kept within ± 0.5 °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. The rotor should be started one minute after the closing of the die. The test should be continued 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, page 4) :

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

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

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

3. TEST REPORT

The test report should state the following :

(*a*) Test temperature, i.e. the measured temperature of the die cavity;

(*b*) $M_{min.}$ in Mooney viscosity units;

(*c*) t_5 and t_{35} in minutes;

(*d*) $\Delta t = (t_{35} - t_5)$.