
INTERNATIONAL STANDARD



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Natural rubber latex — Determination of mechanical stability

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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.

International Standard ISO 35 was drawn up by Technical Committee ISO/TC 45, *Rubber and rubber products*.

It was approved in August 1971 by the Member Bodies of the following countries :

Austria	Hungary	Spain
Canada	India	Sweden
Ceylon	Italy	Switzerland
Czechoslovakia	Malaysia	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
France	Romania	United Kingdom
Germany	South Africa, Rep. of	U.S.A.

No Member Body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 35-1957.

Natural rubber latex – Determination of mechanical stability

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the mechanical stability of natural rubber latex which contains preservative agents and which has been submitted to some type of concentration process. The method is not necessarily suitable for latices from natural sources other than *Hevea brasiliensis* or for compounded latex, vulcanized latex or artificial dispersions of rubber, and is not applicable to synthetic rubber latices.

2 REFERENCES

ISO/R 124, *Rubber latices – Determination of total solids content*. (At present under revision.)

ISO/R 125, *Natural rubber latex – Determination of alkalinity*. (At present under revision.)

3 PRINCIPLE

Latex is stirred at a high speed and the time required to initiate visible flocculation is regarded as a measure of its mechanical stability.

NOTE – The mechanical stability of latex may be adversely affected by lowering its temperature. Care should therefore be taken to ensure that the sample is not cooled significantly between sampling and testing. This effect is most marked on fresh latex.

4 REAGENTS

The ammonia solutions (4.1) and (4.2) shall be prepared from ammonium hydroxide of recognized analytical reagent quality.

Distilled water or water of equivalent purity shall be used wherever water is specified.

4.1 Ammonia solution, containing 1.6 % ammonia (NH₃), for use with latex having an alkalinity above 1.0 % NH₃.

4.2 Ammonia solution, containing 0.6 % ammonia (NH₃), for use with latex having an alkalinity of not more than 1.0 % NH₃.

5 APPARATUS

5.1 Mechanical stability measuring apparatus¹⁾, consisting of the following items :

5.1.1 Latex container, flat-bottomed, cylindrical, at least 90 mm high, with an internal diameter of 58 ± 1 mm and a wall thickness of approximately 2.5 mm. The inner surface shall be smooth. A poly(methyl methacrylate) or glass container is suitable.

5.1.2 Stirring apparatus, consisting of a vertical stainless steel shaft of sufficient length to reach to the bottom of the latex container (5.1.1) and tapering to approximately 6.3 mm diameter at its lower end, where is attached a horizontal, smooth, stainless steel disk 20.83 ± 0.03 mm in diameter and 1.57 ± 0.05 mm thick by means of a threaded stud at the exact centre of the disk. The apparatus shall maintain a stirring speed of $14\,000 \pm 200$ rev/min throughout a test, at which speed the shaft shall not run out of true by more than 0.25 mm.

5.1.3 Holder for the latex container (5.1.1). The holding arrangement shall ensure that the axis of the rotating shaft is concentric with that of the latex container and that the bottom of the stirring disk is 13 ± 1 mm from the inner surface of the bottom of the latex container.

5.2 Means of heating

Use either

- a water bath, capable of maintaining a temperature of 60 to 80 °C, or
- a glass tube, bent to a shape suitable for insertion in the latex, together with a means for circulating water at a temperature of 60 to 80 °C through the tube.

5.3 Wire cloth, stainless steel, with an average aperture width of 180 ± 15 μm.

6 PROCEDURE

Carry out the determination within 24 h of first opening

¹⁾ Suitable instruments are commercially available.