

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 127

DETERMINATION OF KOH NUMBER OF LATEX

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BRIEF HISTORY

The ISO Recommendation R 127, *Determination of KOH Number of Latex*, was drawn up by Technical Committee ISO/TC 45, *Rubber*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

Work on the preparation of this method was authorized at the first meeting of the Technical Committee held in London, in June 1948 and was entrusted to the Working Group No. 12, *Sampling of Latex*.

The Secretariat considered the standard methods adopted by the Member Bodies and proposed a compromise method which was put forward to the Working Group.

The method was considered by the Working Group and by the Technical Committee at the meetings held in The Hague, in September 1949; in Akron, in October 1950; in Oxford, in October 1951; in Paris, in June 1953, and was finally approved as a Draft ISO Recommendation at the Dusseldorf meeting, 5-10 September 1955.

On 29 March 1957, the Draft ISO Recommendation (No. 148) was distributed to all the ISO Member Bodies and was approved, subject to some modifications, by the following 26 (out of a total of 38) Member Bodies:

*Australia	Hungary	Rumania
Austria	India	Spain
*Canada	*Indonesia	Sweden
Czechoslovakia	*Ireland	Switzerland
*Denmark	Italy	Union of South Africa
Finland	Japan	United Kingdom
France	*New Zealand	U.S.A.
Germany	Pakistan	U.S.S.R.
*Greece	Poland	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in August 1959, to accept it as an ISO RECOMMENDATION.

* These Member Bodies stated that they had no objection to the Draft being approved.

DETERMINATION OF KOH NUMBER OF LATEX

1. SCOPE

This method of test is for natural rubber latex preserved wholly with ammonia or ammonia and formaldehyde. The KOH number for such latex is the number of grammes of potassium hydroxide equivalent to the acid radicles combined with ammonia in latex containing 100 g of solids.

This procedure is not necessarily suitable for latices from natural sources other than *Hevea brasiliensis* or for latices of synthetic rubber, compounded latex, heat-concentrated latex, vulcanized latex or artificial dispersions of rubber.

2. APPARATUS

The apparatus consists of the following:

- (a) *pH meter* — dependent on electrometric measurements and capable of being read to 0.02 unit.
- (b) *Glass electrode* — with a linear response up to pH 10.
- (c) *Suitable half cell* — a calomel electrode is recommended.
- (d) *Mechanical stirrer* — with glass paddle.

3. REAGENTS

3.1 Formaldehyde solution (5 per cent, acid free). This solution is prepared by diluting concentrated formaldehyde of pharmacopoeia guaranteed purity to 5 per cent strength by adding six times its volume of distilled water and neutralizing with 0.1 N potassium hydroxide solution, using as indicator the faint pink colour of phenolphthalein.

As formaldehyde is not very stable, it may be necessary, in the case of an old solution, to determine its strength by adding a known volume of excess ammonia of known alkalinity and determining the residual alkalinity after 15 min. If the strength of the solution is less than 4.5 per cent, the calculated amount of concentrated formaldehyde should be added to bring it to 5 per cent.

180 g of formaldehyde are equivalent to 68 g ammonia.

3.2 Potassium hydroxide solution (0.5 N, carbonate-free). This solution should be prepared and standardized by methods recommended in textbooks on analytical chemistry.

To ensure that the solution is reasonably free from carbonate, the following precautions are necessary:

3.2.1 A fairly concentrated solution of approximately known strength should first be prepared. For this purpose, each stick of pure potassium hydroxide is held by means of clean stainless steel tongs and rinsed rapidly in a stream of freshly boiled and cooled distilled water. It is immediately added a bulk of boiled distilled water until the approximately required weight has been added.