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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION
R 247

DETERMINATION OF ASH IN RAW NATURAL RUBBER

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BRIEF HISTORY

The ISO Recommendation R 247, *Determination of Ash in Raw Natural Rubber*, 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 this question by the Technical Committee began in 1948 and led, in 1958, to the adoption of a Draft ISO Recommendation.

In December 1959, this Draft ISO Recommendation (No. 340) 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:

Australia	Hungary	Sweden
Austria	India	Switzerland
Burma	Israel	United Kingdom
Chile	Japan	U.S.A.
Colombia	Mexico	U.S.S.R.
Czechoslovakia	Netherlands	Yugoslavia
France	Portugal	
Germany	Spain	

One Member Body opposed the approval of the Draft : Italy.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in March 1962, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 247 March 1962

DETERMINATION OF ASH IN RAW NATURAL RUBBER

1. SCOPE

This method is intended for the determination of ash in raw natural rubber. In order that the method will give a satisfactory result, the raw rubber should be sampled in accordance with ISO Recommendation R 250, *Sampling of Raw Natural Rubber*.

2. APPARATUS

2.1 *Smooth unetched crucible, of 50 ml capacity.*

2.1.1 Silica or porcelain crucible.

2.1.2 Silica crucible only, if copper or manganese is subsequently to be determined in the ash.

2.2 *Muffle furnace* with pyrometer and thermostatic control.

2.3 *Asbestos board* for Method A, to support the crucible. This board is about 10 cm square and 0.5 cm thick, with a central hole to support the crucible so that about two thirds of its height protrude below the board.

2.4 *Ashless filter paper* for Method B, about 15 cm in diameter.

3. PROCEDURE

3.1 Method A

A test portion of 5 g is weighed to the nearest 1 mg and placed in a previously ignited weighed crucible. The crucible is rested in the hole in the asbestos board and heated gently over a small flame, taking care not to ignite the rubber and to avoid spurting when it is liquid. When the rubber is completely decomposed to a charred mass, the crucible is transferred to the muffle furnace and the ash is heated at a temperature of 550 ± 25 °C until free from carbon. When ashing is complete, the crucible is cooled in a desiccator and weighed to the nearest 1 mg.

3.2 Method B

A test portion of 5 g is weighed to the nearest 1 mg, wrapped in ashless filter paper and placed in a previously ignited weighed crucible. The crucible is then placed in the muffle furnace at a temperature of 550 ± 25 °C, with the door and vents closed. After about one hour in the furnace, the door and vents are opened and the test portion is allowed to burn until free from carbon. When ashing is complete, the crucible is cooled in a desiccator and weighed to the nearest 1 mg.

4. EXPRESSION OF RESULTS

The ash content of the rubber is expressed as a percentage of the mass of the test portion.