

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 719

DETERMINATION OF THE HYDROLYTIC RESISTANCE
OF GLASS GRAINS AT 98 °C

1st EDITION

May 1968

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Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 719, *Determination of the hydrolytic resistance of glass grains at 98 °C*, was drawn up by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question by the Technical Committee began in 1950 and led, in 1961, to the adoption of a Draft ISO Recommendation.

In December 1963, this Draft ISO Recommendation (No. 718) 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	Greece	Spain
Australia	Hungary	Sweden
Austria	India	Switzerland
Brazil	Israel	Turkey
Canada	Italy	U.A.R.
Chile	Japan	United Kingdom
Colombia	Korea, Rep. of	U.S.S.R.
Czechoslovakia	Netherlands	Yugoslavia
France	New Zealand	
Germany	Poland	

Two Member Bodies opposed the approval of the Draft :

Belgium
U.S.A.

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

DETERMINATION OF THE HYDROLYTIC RESISTANCE OF GLASS GRAINS AT 98 °C

1. SCOPE

The purpose of this ISO Recommendation is to describe a method for determining the hydrolytic resistance of glass grains at 98 °C. The resistance is measured inversely by the volume of acid required for titration of the alkali extracted from unit mass of glass, and is expressed by the amount of sodium oxide equivalent to this volume of acid.

This method is recommended for use on the less resistant types of glass. For the more resistant glasses, the method described in ISO Recommendation R 720, *Determination of the hydrolytic resistance of glass grains at 121 °C*, is preferable.

2. APPARATUS

- 2.1 *Balance*, accuracy ± 5 mg or better.
 - 2.2 *Burettes*, 10 ml, graduated in 0.05 ml, and 1 or 2 ml, graduated in 0.01 ml.
 - 2.3 *Cooling bath*, of capacity sufficient to contain 1 litre of water for each flask used in the test.
 - 2.4 *Conical flasks*, 100 ml capacity, made of chemically resistant glass and pre-treated by filling to the base of the neck with water and heating as described in clause 2.5 below.
 - 2.5 *Volumetric flasks*, 50 ml capacity, made of chemically resistant glass and with glass stoppers. It is advisable to select flasks with the graduation line in the lower half of the neck. Before use, each flask should be pre-treated by filling to above the graduation mark with water and heating to 100 °C in the heating bath for three separate periods of 1 hour, using a fresh quantity of water in the flask each time.
- NOTE. — Flasks made from vitreous silica may also be used, in which case the pre-treatment is not required.
- 2.6 *Hammer*, weighing about 1 kg.
 - 2.7 *Mortar and pestle*, made of hardened steel and of the design and approximate dimensions shown in the Figure, page 4.
 - 2.8 *Pipette*, 25 ml.