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# INTERNATIONAL STANDARD



# 776

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Pulps — Determination of acid insoluble ash

*Pâtes — Détermination des cendres insolubles dans l'acide*

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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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 6 has reviewed ISO Recommendation R 776 and found it suitable for transformation. International Standard ISO 776 therefore replaces ISO Recommendation R 776-1968.

ISO Recommendation R 776 was approved by the Member Bodies of the following countries :

Argentina	Germany	Norway
Australia	India	Portugal
Belgium	Iran	Romania
Brazil	Israel	Spain
Bulgaria	Italy	Sweden
Canada	Japan	Switzerland
Czechoslovakia	Korea, Dem. P. Rep. of	Turkey
Denmark	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Mexico	U.S.A.
Finland	Netherlands	U.S.S.R.
France	New Zealand	Yugoslavia

The Member Bodies of the following countries have subsequently approved this Recommendation :

Cuba  
South Africa, Rep. of

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 776 into an International Standard.

## Pulps — Determination of acid insoluble ash

### 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the acid insoluble ash in pulp, which is the insoluble residue obtained after reducing the pulp to ash and treating the ash with hydrochloric acid.

The method applies to all kinds of pulps.

### 2 REFERENCES

ISO/R 638, *Pulps — Determination of dry matter content*.

ISO 1762, *Pulps — Determination of ash*.

### 3 PRINCIPLE

Ashing of the pulp and treatment with hydrochloric acid. Filtering of the insoluble residue, washing, igniting and weighing.

### 4 REAGENT

**Hydrochloric acid**, about 6 N.

Dilute 500 ml of analytical grade hydrochloric acid ( $\rho_{20}$  1,19 g/ml) with 500 ml of distilled water.

### 5 APPARATUS

**5.1 Dishes**, of platinum.

**5.2 Balance**, with an accuracy of 0,1 mg.

### 6 PROCEDURE

#### 6.1 Preparation of the test portion

Weigh, to the nearest 0,01 g, an amount of air-dry pulp, previously torn into pieces of suitable size, that will produce at least 1 mg of acid insoluble ash. At the same time weigh out a separate sample for dry-matter determination in accordance with ISO/R 638.

#### 6.2 Determination

Ash the test portion as described in ISO 1762<sup>1)</sup>, in portions in a platinum dish (5.1), previously ignited and weighed to constant mass. When the dish has attained room temperature, add 5 ml of the hydrochloric acid (4) and evaporate to dryness on a steam bath. Add another portion of 5 ml of the hydrochloric acid and evaporate again to dryness. Add 5 ml of the hydrochloric acid to the residue and, after heating for a few seconds on a steam bath, dilute with about 20 ml of distilled water.

Filter the contents of the dish through an ashless filter paper and wash the dish and filter paper several times with hot distilled water until the filtrate is free from chloride ions. Replace the filter paper containing the insoluble residue in the platinum dish. Heat the dish carefully until the water has evaporated and ash the filter paper over a low flame. When the paper is carbonized, ignite the residue in a muffle furnace at  $575 \pm 25$  °C until free from carbon. Allow to cool in a desiccator and weigh to the nearest 0,1 mg. Carry out two determinations on the same test sample.

1) The temperature specified in ISO 1762 concerning the determination of ash in pulp is  $575 \pm 25$  °C; ignition of pulp is achieved in a muffle furnace adjusted for maintaining temperature within the specified range, previous ignition being obtained by means of the low flame of a gas burner.