

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1952

BROWN COALS AND LIGNITES

METHOD OF EXTRACTION

FOR THE DETERMINATION OF SODIUM AND POTASSIUM

SOLUBLE IN DILUTE HYDROCHLORIC ACID

1st EDITION

April 1971

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 1952, *Brown coals and lignites – Method of extraction for the determination of sodium and potassium soluble in dilute hydrochloric acid*, was drawn up by Technical Committee ISO/TC 27, *Solid mineral fuels*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1952, which was circulated to all the ISO Member Bodies for enquiry in January 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Canada	Israel	Switzerland
Chile	Italy	Thailand
Czechoslovakia	New Zealand	Turkey
Denmark	Poland	U.A.R.
France	Portugal	United Kingdom
Germany	Romania	U.S.A.
Greece	South Africa, Rep. of	U.S.S.R.
India	Sweden	Yugoslavia

No Member Body opposed the approval of the Draft.

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

BROWN COALS AND LIGNITES**METHOD OF EXTRACTION****FOR THE DETERMINATION OF SODIUM AND POTASSIUM****SOLUBLE IN DILUTE HYDROCHLORIC ACID****1. SCOPE**

This ISO Recommendation concerns the determination, in brown coals and lignites, of sodium and potassium occurring as inorganic salts or as alkali humates which are soluble in dilute hydrochloric acid. These forms of alkali may cause difficulties in combustion of certain brown coals and lignites (salt coals).

This ISO Recommendation standardizes the extraction procedure only; the determination of sodium and potassium in the extract may be carried out by any accurate method.

2. PRINCIPLE

Extraction of the sample of brown coal or lignite with boiling 0.005 N hydrochloric acid*. Centrifuging of the extract and determination of the sodium and potassium in solution by any precise analytical method (for example, gravimetric method or flame photometric method).

3. REAGENTS

All reagents should be of analytical reagent quality, and distilled or demineralized water should be used throughout the determination.

3.1 *Hydrochloric acid*, 0.005 N solution.

3.2 *Ethanol*, 95 % (V/V).

4. APPARATUS

All graduated apparatus should be of the best analytical quality obtainable.

4.1 *One-mark volumetric flask*, capacity 250 ml.

4.2 *Laboratory centrifuge* capable of operation at about 2000 rev/min.

4.3 *Polythene (polyethylene) bottle*, minimum capacity 250 ml.

4.4 *Balance*, accurate to 0.1 mg.

* See A. Lissner and W. Goebel, *Freiberger Forschungshefte* A 203, 1961.