

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1976

CHEMICAL ANALYSIS OF ZINC ALLOYS

DETERMINATION OF COPPER BY ELECTROLYSIS

1st EDITION

April 1971

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Printed in Switzerland

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BRIEF HISTORY

The ISO Recommendation R 1976, *Chemical analysis of zinc alloys – Determination of copper by electrolysis*, was drawn up by Technical Committee ISO/TC 18, *Zinc and zinc alloys*, the Secretariat of which is held by the Institut Belge de Normalisation (IBN).

Work on this question led to the adoption of Draft ISO Recommendation No. 1976, which was circulated to all the ISO Member Bodies for enquiry in May 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Greece	Sweden
Belgium	India	Thailand
Canada	Italy	U.A.R.
Chile	New Zealand	United Kingdom
France	Norway	U.S.A.
Germany	South Africa, Rep. of	U.S.S.R.

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.

CHEMICAL ANALYSIS OF ZINC ALLOYS

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1. SCOPE

This ISO Recommendation describes an electrolytic method for the determination of copper in zinc alloys. The method applies to zinc alloy Zn Al 4 Cu 1 defined in ISO Recommendation R 301, *Zinc alloy ingots*. It is suitable for the determination of copper contents between 0.5 and 3.5 %.

2. PRINCIPLE OF THE METHOD

Determination of copper by electrolysis in nitric sulphuric acid medium

3. REAGENTS

All the reagents should be of analytical reagent grade. Distilled or demineralized water should be used for preparing solutions and during the actual determination.

3.1 *Nitric acid*, $d = 1.4$.

3.2 *Ammonia solution*, $d = 0.91$.

3.3 *Sulphuric acid* diluted 1 + 1 (approximately 18 N).

3.4 *Ethanol*, approximately 95 % (V/V) (concentration of the azeotrope water-ethanol).

4. APPARATUS

4.1 *Electrolyser*.

4.2 *Stirrer* (mechanical or magnetic stirrer or rotating anode).

4.3 *Gauze electrodes*, made of platinum or platinum hardened by alloying with a metal of the same group.

5. SAMPLING

The requirements of ISO Recommendation R . . . *, *Selection and preparation of samples for analysis*, apply.

*To be prepared later.