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SANS 4751:1984

Edition 1 and nat. amdt 1

ISO 4751:1984

Edition 1

Any reference to SABS ISO 4751 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Copper and copper alloys — Determination of tin content — Spectrometric method

This national standard is the identical implementation of ISO 4751:1984 and is adopted with the permission of the International Organization for Standardization.

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Table of changes

Change No.	Date	Scope
Nat. amdt 1	2007	Amended to change the designation from SABS to SANS, with no technical changes.

National foreword

This South African standard was approved by National Committee SABS SC 138H, *Water and sanitation – Equipment and systems – Plastics pipes and fittings*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This SANS document was published in May 2007. This SANS document supersedes SABS ISO 4751:1984 (edition 1).

**Reaffirmed and reprinted in June 2012.
This standard will be reviewed every five years and
either be reaffirmed, amended, revised or withdrawn.**

International Standard



4751

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

Copper and copper alloys — Determination of tin content — Spectrometric method

Cuivre et alliages de cuivre — Dosage de l'étain — Méthode spectrométrique

First edition — 1984-08-01

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Descriptors: copper, copper alloys, chemical analysis, determination of content, tin, spectrophotometric analysis.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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.

International Standard ISO 4751 was developed by Technical Committee ISO/TC 26, *Copper and copper alloys*, and was circulated to the member bodies in August 1982.

It has been approved by the member bodies of the following countries:

Austria	Finland	Poland
Belgium	Germany, F.R.	Romania
Brazil	Iran	South Africa, Rep. of
Canada	Italy	Spain
Chile	Japan	Sweden
China	Korea, Dem. P. Rep. of	Switzerland
Czechoslovakia	Korea, Rep. of	Turkey
Egypt, Arab Rep. of	Norway	USSR

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Australia
France
USA

Copper and copper alloys — Determination of tin content — Spectrometric method

1 Scope and field of application

This International Standard specifies a spectrometric method for the determination of tin in copper and copper alloys.

The method is applicable to the determination of tin contents between 0,005 and 0,5 % (*m/m*) in all types of copper and copper alloys listed in International Standards.

A method applicable to the determination of tin contents below 0,005 % (*m/m*) is in preparation.

2 Principle

Extraction into methyl isobutyl ketone and spectrometric determination of the yellow tin-quercetin complex.

3 Reagents

During the analysis, use only reagents of recognized analytical grade, and only distilled water or water of equivalent purity.

3.1 Hydrochloric acid, ρ 1,19 g/ml.

3.2 Methyl isobutyl ketone.

3.3 Ammonia solution, ρ 0,91 g/ml.

3.4 Hydrogen peroxide, 30 % (*m/m*).

3.5 Hydrochloric acid, solution, diluted 1 + 1.

Dilute 50 ml of the hydrochloric acid (3.1) with 50 ml of water.

3.6 Sulfuric acid, solution, diluted 1 + 19.

Dilute 50 ml of sulfuric acid, ρ 1,84 g/ml, to 1 000 ml with water.

3.7 Thiourea, 60 g/l solution.

Dissolve 15 g of thiourea (NH_2CSNH_2) in water and dilute to 250 ml.

3.8 Ascorbic acid, 20 g/l solution.

Dissolve 1 g of ascorbic acid in water and dilute to 50 ml.

Use a freshly prepared solution.