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British Standard Methods for Chemical analysis of tobacco and tobacco products

Part 11. Determination of dithiocarbamate residues

[ISO title: Tobacco and tobacco products – Determination of dithiocarbamate pesticides residues – Molecular absorption spectrometric method]

Méthodes d'analyse chimique du tabac et des produits du tabac
Partie 11. Détermination des résidus de dithiocarbamates

Verfahren zur chemischen Analyse von Tabak und Tabakprodukten
Teil 11. Bestimmung von Dithiokarbomatrückständen



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National foreword

This Part of BS 5202 has been prepared under the direction of the Food and Agriculture Standards Committee. It is identical with ISO 6466-1983 'Tobacco and tobacco products — Determination of dithiocarbamate pesticides residues — Molecular absorption spectrometric method' published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Where the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

Cross-references

International standard	Corresponding British Standard
ISO 4874-1981	BS 6245 Sampling tobacco and tobacco products Part 1 : 1982 Method of sampling batches of raw material (general principles) (Identical)

The Technical Committee has reviewed the provisions of ISO 6488, to which reference is made in the text and for which there is no corresponding British Standard, and has decided that they are acceptable for use in conjunction with this standard.

With reference to 9.3, the information in ISO 1750 regarding the common and systematic names and structures of the three pesticides may be found in a related standard, BS 1831 'Recommended common names for pesticides'.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

British Standard Methods for

Chemical analysis of tobacco and tobacco products

Part 11. Determination of dithiocarbamate residues

1 Scope and field of application

This International Standard specifies a molecular absorption spectrometric method for the determination of residues from pesticides of the dithiocarbamate type on tobacco and tobacco products.

The method is applicable to the determination, on tobacco and tobacco products, of residues from the dithiocarbamate pesticides commonly used on tobacco crops.

2 References

ISO 1750, *Pesticides and other agrochemicals — Common names.*

ISO 4874, *Tobacco — Sampling of batches of raw material — General principles.*

ISO 6488, *Tobacco — Determination of water content (Reference method).*

3 Definition

dithiocarbamate pesticides residues content : The amount of carbon disulphide, in milligrams per kilogram of sample, determined according to the method specified.

NOTE — If required and if the identity of the dithiocarbamate pesticide present in the sample is known, the dithiocarbamate pesticides residues content may be expressed additionally as the dithiocarbamate by using the appropriate factor (see 9.3).

4 Principle

Decomposition of the dithiocarbamates in a test portion by heating with hydrochloric acid in the presence of tin(II) chloride. Distillation of the carbon disulphide formed and absorption in a methanolic solution of potassium hydroxide after removal of interfering substances by passing through sulphuric acid. Spectrometric determination of the potassium-*O*-methyl dithiocarbonate formed.

5 Reagents

All reagents shall be of analytical reagent grade. Distilled water, or water of at least equivalent purity, shall be used.

5.1 Sulphuric acid, of concentration 96 to 98 % (*m/m*).

5.2 Potassium hydroxide, approximately 1 mol/l solution in 95 % (*V/V*) methanol. If there is any sediment, filter the solution, using fluted filter paper, before it is used.

5.3 Tin(II) chloride (solid SnCl₂).

5.4 Hydrochloric acid, aqueous solution.

Add 75 ml of hydrochloric acid of concentration 37 to 38 % (*m/m*) to 150 ml of distilled water.

5.5 Sodium diethyldithiocarbamate, standard solution corresponding to 10 mg of carbon disulphide per litre.

Dissolve 29,6 mg of sodium diethyldithiocarbamate trihydrate in 1 000 ml of water. Prepare the solution on the day of use.

1 ml of this standard solution is equivalent to 10 µg of carbon disulphide.

6 Apparatus

Ordinary laboratory apparatus and

6.1 Distillation apparatus (see the figure), comprising

6.1.1 Round bottom flask with three necks (A), of capacity 250 ml.

6.1.2 Condenser (B).

6.1.3 Reservoir (C).