INTERNATIONAL STANDARD ISO 3400

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

Tobacco and tobacco products — Determination of alkaloids in cigarette smoke condensates — Spectrophotometric method

Tabac et produits du tabac — Détermination des alcaloïdes dans les condensats de fumée de cigarette — Méthode spectrophotométrique

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Tobacco and tobacco products — Determination of alkaloids in cigarette smoke condensates — Spectrophotometric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the spectrophotometric determination of alkaloids in cigarette smoke condensates.

The method is applicable to methanolic solutions of cigarette smoke condensates.

2 REFERENCES

ISO 3401, *Tobacco and tobacco products — Determination of alkaloid retention by filters of cigarettes.*[1)]

ISO 4387, *Tobacco and tobacco products — Cigarettes — Machine smoking and determination of crude and dry smoke condensate.*[2)]

ISO . . ., *Tobacco and tobacco products — Cigarettes — Sampling.*[2)]

3 PRINCIPLE

Steam distillation of an aliquot part of the methanolic solution of a cigarette smoke condensate in two steps : removal of the neutral and acid steam-volatile substances by distillation after acidification of the solution with mineral acid, and subsequent distillation of the nicotinic alkaloids from the same solution made strongly alkaline. Spectrophotometric measurement of the absorbance of the distillate from the alkaline distillation and calculation of the alkaloid content expressed as nicotine.

4 REAGENTS

All reagents used shall be of analytical reagent quality and the water used shall be distilled water or water of at least equivalent purity.

4.1 Sodium hydroxide, 8 N solution.

4.2 Sulphuric acid, 2 N solution.

4.3 Sulphuric acid, 0,05 N solution.

1) At present at the stage of draft.

2) In preparation.

5 APPARATUS

Usual laboratory apparatus not otherwise specified, and the following items :

5.1 Steam distillation apparatus as described in ISO 3401 or any other apparatus giving the same results.

5.2 Spectrophotometer, covering a wavelength range from 230 to 290 nm.

5.3 Matched quartz cells, having an optical path length of 1 cm.

The absorbance of the cells shall be equal before and after each measurement or a suitable correction shall be applied.

5.4 One-mark volumetric flasks, of capacity 250 ml, with ground stoppers, complying with class A of ISO 1042.

5.5 One-mark pipettes, of capacities 5, 10 and 25 ml complying with ISO 648.

5.6 Glass funnels, of diameter about 55 mm.

5.7 Filter paper, fast filtering grade.

6 SAMPLING

Sampling shall be carried out by the method specified in ISO . . .

7 PROCEDURE

7.1 Preparation of the sample

Prepare the cigarette smoke condensate according to ISO 4387.

7.2 Determination

7.2.1 *Duplicate procedure*

For a complete analysis, carry out two independent determinations under identical conditions.

9 TEST REPORT

9.1 The test report shall show the method used and the result obtained. It shall also mention any operating conditions not specified in this International Standard, or regarded as optional, as well as any circumstances that may have influenced the result.

The test report shall include all details required for complete identification of the sample.

The test report shall, in particular, include the items of information listed in 9.2, 9.3, 9.4 and 9.5.

9.2 Description of the product tested.

9.3 Sampling procedure :

a) method of sampling;

b) number of cigarettes of the test sample;

c) date and place of purchase or sampling.

9.4 Test results, together with their precision, expressed in accordance with 8.2.

9.5 Date of test.