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Tobacco and tobacco products — Determination of nicotine purity — Gravimetric method using tungstosilicic acid

Tabac et produits du tabac — Détermination de la pureté de la nicotine — Méthode gravimétrique à l'acide tungstosilicique

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Foreword

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This document was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*.

This third edition cancels and replaces the second edition (ISO 13276:2017), which has been technically revised. The main changes compared to the previous edition are as follows:

— the Warning notice has been updated;

— the error in Formula (1) in Clause 8 has been corrected.

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Tobacco and tobacco products — Determination of nicotine purity — Gravimetric method using tungstosilicic acid

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1 Scope

This document specifies a method for the gravimetric determination of the purity of nicotine using tungstosilicic acid.

The method is applicable to pure nicotine or nicotine salts used to calibrate analytical methods for the determination of nicotine in the field of tobacco, tobacco products and smoke analysis.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

Complex formation of nicotine or its salts with tungstosilicic acid to form insoluble nicotine silicotungstate. Determination of the precipitate mass by filtration using either a sintered glass crucible in combination with oven-drying or an ashless filter paper in combination with incineration.

5 Reagents

Use only reagents of recognized analytical reagent grade and distilled water or water of at least equivalent purity.

5.1 **Tungstosilicic acid solution** (CAS of tungstosilicic acid: 12027-43-9).

Dissolve 12 g of dodeca-tungstosilicic acid ($H_4[Si(W_3O_{10})4] \cdot xH_2O$) in 100 ml of water.

Avoid the use of the other forms of tungstosilicic acid such as $4H_2O{\cdot}SiO_2 10WO_3{\cdot}3H_2O$ or $4H_2O{\cdot}SiO_2 12WO_3{\cdot}20H_2O$ as they do not yield crystalline precipitates with nicotine. Tungstosilicic acid of the CAS 11130-20-4 and 12027-38-2 may be used for this method provided sufficiently crystalline precipitation occurs.

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