INTERNATIONAL STANDARD

ISO 22863-3

First edition
2020-06

Fireworks — Test methods for determination of specific chemical substances —

Part 3: Lead and lead compounds by atomic absorption

Artifices de divertissement — Méthodes d'essai pour la détermination de substances chimiques spécifiques —

Partie 3: Plomb et composés du plomb par absorption atomique

Reference number
ISO 22863-3:2020(E)

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 264, *Fireworks.*

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Fireworks — Test methods for determination of specific chemical substances —

Part 3:
Lead and lead compounds by atomic absorption

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1 Scope

This document specifies the test method for determination of the lead content in pyrotechnic compositions of fireworks by flame atomic absorption spectrophotometry, with a minimum detection limit of 10 mg/kg.

It is generally recommended to perform a simple preliminary qualitative test to check whether a quantitative analysis is required.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 22863-1:2020, *Fireworks — Test methods for determination of specific chemical substances — Part 1: General*

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

The test method consists to digest the samples with hydrochloric acid, nitric acid, hydrofluoric acid and perchloric acid and then to use atomic absorption spectrophotometer to determine the lead content.

5 Reagents

Unless otherwise stated, only confirmed as analytical reagent, distilled water or deionized water or equivalent purity water shall be used.

5.1 Hydrochloric acid (ρ = 1,19 g/ml).

5.2 Perchloric acid (ρ = 1,67 g/ml).

5.3 Nitric acid (ρ = 1,42 g/ml).

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