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**Hardmetals — Determination of calcium, copper, iron, potassium, magnesium, manganese, sodium, nickel and zinc in cobalt metal powders — Flame atomic absorption spectrometric method**

*Métaux-durs — Dosage du calcium, du cuivre, du fer, du potassium, du magnésium, du manganèse, du sodium, du nickel et du zinc dans les poudres métalliques de cobalt — Méthode par spectrométrie d'absorption atomique dans la flamme*



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Published in Switzerland

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ISO 11876 was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*, Subcommittee SC 4, *Sampling and testing methods for hardmetals*.

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# Hardmetals — Determination of calcium, copper, iron, potassium, magnesium, manganese, sodium, nickel and zinc in cobalt metal powders — Flame atomic absorption spectrometric method

## 1 Scope

This International Standard specifies a flame atomic absorption spectrometric method to be used for the determination of the mass fractions of copper, potassium, magnesium, manganese, sodium and zinc in cobalt metal powders in the range of 0,001 % to 0,01 %, calcium in the range of 0,002 % to 0,01 %, and iron and nickel in the range of 0,002 % to 0,05 %.

## 2 Normative references

The following referenced documents are indispensable for the application 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 3534-1:2006, *Statistics — Vocabulary and symbols — Part 1: General statistical terms and terms used in probability*

## 3 Reagents

Use only reagents of the highest purity and only double-distilled water or water of equivalent purity.

**3.1 Nitric acid**,  $\rho = 1,42$  g/ml, diluted 1 + 1.

**3.2 Hydrochloric acid**,  $\rho \approx 1,1$  g/ml (hydrochloric acid,  $\rho = 1,19$  g/ml, diluted 1 + 1).

**3.3 Cesium chloride solution**, (20 g/1 000 ml).

**3.4 Standard solutions**, (1,000 g/1 000 ml) for calibration purposes for each element to be determined.

## 4 Procedure

### 4.1 Test portion

Weigh, to the nearest 0,001 g, approximately 1 g of the sample.

### 4.2 Dissolution of the test portion

Add 20 ml of nitric acid (3.1) and 10 ml of hydrochloric acid (3.2) and heat gently until the test portion is completely dissolved.