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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13884-2018

Replacing GB/T 13884-2003

**Determination of cobalt in feeds - Atomic absorption
spectrometry**

饲料中钴的测定 原子吸收光谱法

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Foreword

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Determination of Cobalt in Feeds -Atomic Absorption Spectrometry

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Determination of Cobalt in Feeds -Atomic Absorption Spectrometry 1 Scope

This Standard specifies using the atomic absorption spectrometry to determine the cobalt in feeds. This Standard is applicable to the determination of cobalt in the feed ingredients, compound feeds, concentrate supplements, concentrated feeds, and feed additive premix. This Standard method's detection limit is of 0.03mg/kg; quantitative limit is of 0.1mg/kg.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 6682 Water for Analytical Laboratory Use - Specification and Test Methods

GB/T 14699.1 Feeding Stuffs - Sampling

GB/T 20195 Animal Feeding Stuffs Preparation of Test Samples

3 Principle

5.7 Magnetic stirrer.

6 Sampling and Sample Preparation

According to the provisions of GB/T 14699.1, take a representative feed sample; down-sampling by quadruple method; prepare the sample as per GB/T 20195. Smash till all pass through the 0.45mm sample splitting sieve (4.6); mix evenly, and load into a sealed container; place for later-use.

7 Analysis Procedures 7.1 Extraction 7.1.1 Treatment of feed ingredients, compound feed, concentrated feed, and concentrate samples

Take 5g~10g sample (accurate to 0.0001g); place into 50mL porcelain crucible (5.3); perform small-fire charring on the thermostat controlled electric furnace (5.4); perform ashing for 2h in the 600°C high temperature furnace (5.2); if there is still a small amount of carbon particles; titrate the nitric acid (4.2) to wet the residue; continue to perform ashing in the 600°C high temperature furnace till there is no carbon particles; take out and cool off; titrate a small amount of water to the residue; wet; then add 5mL of hydrochloric acid (4.1); add water to 15mL; boiling for 2min~3min, then cool off; transfer into the proper volume of volumetric flask to make constant volume; filter to obtain the sample solution for later-use. Meanwhile, prepare the blank solution of the sample.

7.1.2 Treatment of feed additive premix sample Take 0.5g~2g of sample (accurate to 0.0001g) into 250mL stoppered conical flask; add 100.00mL of hydrochloric acid solution (4.3); use the magnetic stirrer (5.7) to stir and extract for 30min; then use centrifuge (5.6) to perform centrifugal separation for 5min at 5000r/min; take the supernatant liquid as the sample solution; after stirring and extracting, take the solution obtained by dry filtration as the sample solution; meanwhile, prepare the blank solution of the sample.

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