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

LS/T 6125-2017

**Inspection of grain and oils - Rapid determination of cadmium
in grain - Solid sample introduction atomic fluorescence
spectrometry method
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the National Grain Administration.

This standard is under the jurisdiction of the National Grain and Oil Standardization Technical Committee (SAC/TC270).

This standard was drafted. National Quality Bureau Standard Quality Center, Beijing Grain and Oil Food Inspection Institute, Hunan Grain Quality Monitoring Center, Guangdong Food Quality Monitoring Center, Sichuan Grain Quality Monitoring Center, Jiangxi Grain Quality Monitoring Center, Beijing Jitian Instrument Co., Ltd.

1 Scope

This standard specifies the principle of rapid determination of elemental cadmium in rice by atomic fluorescence spectrometry, materials, equipment, sample preparation, and measurement.

Determination, result calculation and precision.

This standard is applicable to the determination of cadmium in rice. The detection limit of the method is 0.01 ng. When the sample weight is 5 mg, the detection limit is 2 µg/kg.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 5491 Inspection of food and oil materials, sample method GB/T 27404-2008
Laboratory quality control specification Food physical and chemical testing

3 Principle

Direct introduction of cadmium in solid samples by using a porous carbon material as an electrothermal evaporator and capturing electric heating using an online atomic trap the distilled atoms are used to separate the cadmium from the organism in the sample. The atomic cadmium is then carried by the carrier gas into the non-dispersive atomic fluorescence spectrometer.

The cadmium is excited by the emitted light of a special cadmium hollow cathode lamp, and its fluorescence intensity is under fixed conditions and the cadmium in the sample to be tested.

The concentration is proportional to the quantitative comparison with the standard series.

4 Materials

Certified rice reference material or reference material. cadmium content should be higher than 0.15mg/kg, used to draw a standard curve.

Note: It is possible to use the rice standard substance or reference material with high cadmium content and the rice standard substance or reference substance with low cadmium content to be mixed in proportion.

Quasi-curve.

5 Instruments

Laboratory routine instruments, equipment and the following instruments.

a) Solid injection atomic fluorescence spectrometer 1). With cadmium hollow cathode lamp and disposable carbon sample boat, see Appendix A for technical performance.

b) Crusher. Crush the particle size until the sample can pass through a 60 mesh (250 μm) sieve.

c) Balance. The sensitivity is 0.1 mg.

1) The technical indicators of DCD-200 solid injection atomic fluorescence spectrometer produced by Beijing Jitian Instrument Co., Ltd. meet the requirements of this standard. Provide this information it is for the convenience of the users of this standard, not the approval of the instrument. Any instrument that meets the requirements of Appendix A can be used.

6 Sample preparation

6.1

Sample and sample. Perform according to GB/T 5491.