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PEOPLE'S REPUBLIC OF CHINA

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GB/T 5009.72-2003

Replacing GB/T 5009.72-1996

Method for Analysis of Hygienic Standard of Aluminum-wares for Food Use

铝制食具容器卫生标准的分析方法

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Standardization Administration of the People's Republic of China.

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Foreword

This Standard replaces GB/T 5009.72-1996 "Method for Analysis of Hygienic Standard of Aluminum-wares for Food Use".

Compared with GB/T 5009.72-1996, the main changes of this Standard are as follows:

— The framework of the previous standard was modified according to GB/T 20001.4-2001 "Rules for Drafting Standards - Part 4: Methods of Chemical Analysis".

This Standard was proposed by and shall be under the jurisdiction of the Ministry of Health of the People's Republic of China.

This Standard was responsibly drafted by the Epidemic Prevention Station of Guangxi Zhuang Autonomous Region.

This Standard was issued in 1985 for the first time, and revised in 1996; this is the second revision.

Method for Analysis of Hygienic Standard of Aluminum-Wares for Food Use

1 Scope

This Standard specifies the analysis methods for each hygienic index of various punched or cast aluminum cookers, wares for food use, and vessels that directly contact with foods.

This Standard is applicable to the analysis for each hygienic index of various punched or cast aluminum cookers, wares for food use, and vessels that directly contact with foods.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For dated reference, subsequent amendments (excluding corrigendum) or revisions of these publications do not apply. However, the parties who enter into agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards. For undated references, the latest edition of the normative document referred to applies.

GB/T 5009.11-2003 Determination of total arsenic and abio-arsenic in food

GB/T 5009.14-2003 Determination of zinc in foods

GB/T 5009.62-2003 Method for analysis of hygienic standard of ceramics for food containers

GB 11333 Hygienic standard for aluminum-wares for food use

3 Sampling Method

Sample 0.1% of the product as the inspection specimen; for small-batch production, it shall not be less than 6 pieces for each time of sampling. Product name, batch number, and sampling date shall be noted respectively. Half of the samples are used for assay; and the other half are preserved two months for arbitrary analysis.

6.2.2 Analysis procedures

6.2.2.1 Take 25.00mL of refined aluminum sample soaking solution and 5.0 mL of lead standard working solution (equivalent to 5.0μg of lead); respectively place in two 25mL colorimetrical cylinders with stoppers; operate according to Article 6.2.2 of GB/T 5009.62-2003.

6.2.2.2 Take 2.00mL of recycled aluminum sample soaking solution and 10mL of lead standard working solution (equivalent to 10.00μg of lead); operate according to Article 6.2.2 of GB/T 5009.62-2003.

6.2.3 Result calculation

The same as Article 6.2.3 in GB/T 5009.62-2003.

Result expression: Refined aluminum report is less than or greater than 0.2 mg/L; recycled aluminum report is less than or greater than 5mg/L.

7 Arsenic

7.1 Principle, Reagent and Instrument

The same as Method III in GB/T 5009.11-2003.

7.2 Analysis Procedures

Take 25.0mL of sample soaking solution; add the soaking solution into the arsenic-measuring flask; add in 5mL of hydrochloric acid, 5mL of potassium iodide solution, and 5 drops of acidic stannous chloride solution; shake up; stand for 10 minutes; add 2g of arsenic-free metallic zinc; immediately install the arsenic-measuring tube that contains lead acetate cotton and mercuric bromide test paper; place in the dark under 25°C ~ 30°C for 1 hour; take out the mercuric bromide test paper; compare the test paper with the standard. The color spot shall not be deeper than that of the standard.

Take 1.0mL of arsenic standard working solution (equivalent to 1.0 μg of arsenic); add into the arsenic-measuring flask; add 5mL of acetic acid (4%) to 25mL; the following, from "add in 5mL of hydrochloric acid", is operated at same time as the sample soaking solution; this is standard arsenic spot.

7.3 Result Expression

Report is greater than or less than 0.04 mg/L.

8.6 Precision

The absolute difference between two independently-measured results under repeatability condition shall not be greater than 10% of the arithmetic mean.

9 Cadmium

9.1 Atomic Absorption Spectrometry

In accordance with Section 7.1 in GB/T 5009.62-2003.

9.2 Dithizone Method

9.2.1 Principle, reagent and instrument

The same as Article 7.2.1~7.2.3 in GB/T 5009.62-2003.

9.2.2 Analysis procedures

Take 2 125mL-separating funnels; add 0.1mL of cadmium standard working solution (equivalent to 1 μg of cadmium) and 50.0 mL of acetic acid (4%) into one separating funnel; add 50.0 mL of sample soaking solution into the other separating funnel; respectively add 2mL of potassium sodium tartrate solution, 10mL of sodium hydroxide-potassium cyanide solution, and 2mL of hydroxylamine hydrochloride solution into each separating funnel. The solution shall be shaken up after adding each kind of reagent. The following is operated according to Article 7.2.4 of GB/T 5009.62-2003 - from "add in 15.0mL of dithizone-chloroform solution (0.1g/L)".

9.2.3 Result calculation

The same as Article 7.2.5 in GB/T 5009.62-2003.

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