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NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB 5413.27-2010

Replacing GB/T 21676-2008; GB/T 5413.27-1997; GB/T 5413.4-1997

National food safety standard -- Determination of fatty acids in foods for infants and young children, milk and milk products

婴幼儿食品和乳品中脂肪酸的测定

(English Translation)

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Foreword

This standard replaces GB/T 21676-2008 "milk and dairy products of fatty acids by gas liquid chromatography", GB/T 5413.27-1997 "Infant formula milk powder and DHA, EPA Determination", GB/T 5413.4-1997 "infant formula milk powder and linoleic acid Determination. " this standard compared with the original standards, the main changes are as follows.

- The first law chloride - methanol, methyl esterification method;

- The GB/T 21676-2008, GB/T 5413.27-1997, GB/T 5413.4-1997 merge this standard second method ammonia - ethanol extract Emulated.

Appendix A of this standard is an informative annex.

This standard replaces the standards previously issued as follows.

--GB/T 5413.4-1997;

--GB/T 5413.27-1997;

--GB/T 21676-2008.

National Food Safety Standard Determination of infant foods and dairy products of fatty acids

1 Scope

This standard specifies the method for determination of infant foods and dairy products of fatty acids.

This standard applies to the determination of infant foods and dairy products of fatty acids, the second method is not suitable for the determination of fatty acids containing entrapped.

2 Normative references

The standard file referenced in the application of this standard is essential. For dated references, only the edition date of the note this applies to this standard. For undated references, the latest edition (including any amendments) applies to this standard.

First Fayi chloride - methanol method methyl ester Principle 3 Acetyl chloride is reacted with methanol to give hydrochloric acid - methanol free sample of fat and fatty acid methyl ester and extracted with toluene, the qi Chromatograph testing, external standard separation.

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4 Reagents and materials

Unless otherwise indicated, the reagents used in this method were of analytical grade or above specifications, water as a water GB/T 6682 regulations.

4.1
anhydrous sodium carbonate.

4.2
Toluene. chromatography.

4.3
acetyl chloride.

4.4
acetyl chloride in methanol (10% volume fraction). Measure 40 mL of methanol in 100 mL dry beaker, Imbibe 5.0 mL acetyl chloride (4.3) was slowly added dropwise, stirring constantly, cooled and transferred to a 50 mL volumetric flask and dry. Before use with system.

Note: acetyl chloride is an irritant agent to prepare a methanol solution of acetyl chloride should be stirred constantly to prevent splashing, pay attention to protection.

4.5
sodium carbonate solution. Accurately weigh 6 g anhydrous sodium carbonate (4.1) in 100 mL beaker, dissolved in water, and the transfer of water to the 100 mL volumetric flask.

4.6
fatty acid triglyceride standard. Purity >=99%, fatty acid species in Appendix A Table A.1.

4.7
fatty acid triglyceride standard working solution. Press the fatty acid content of each sample to be analyzed and the type of fatty acids in the preparation of appropriate concentration standard Quasi working fluid volume with toluene and were stored at -10 °C following refrigerator, valid for three months.

5 Apparatus

5.1
Balance. a sense of the amount of 0.01 g and 0.1 mg.

5.2
thermostatic water bath.

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5.3
Centrifuge. >=5000 rpm rev/min.

5.4
GC with FID detector.

5.5
freeze-drying apparatus.

5.6
nitrogen blowing instrument.

5.7
screw glass (made with Teflon inner pad screw cap). 15 mL.

5.8
centrifuge tube. 50mL.

6.1 Sample Processing

6.1.1
Sample water content greater than 5%, freeze-dried to a moisture content of less than 5%.

6.1.2
Weigh the sample 0.5 g (accurate to 0.1 mg) in 15 mL screw-dried glass tube (5.7), and 5.0 mL of toluene (4.2).

6.1.3
Weigh anhydrous butter sample 0.2 g (accurate to 0.1 mg) in 15 mL screw-dried glass tube (5.7), and 5.0 mL Toluene (4.2).

6.2.1 Preparation of sample measurement solution

10% methanol solution was added acetyl chloride in the sample (6.1.2 or 6.1.3) in 6.0 mL (4.4), after nitrogen filling, tighten the screw cap and shaken After mixing 80 °C ± 1 °C water bath placed 2 h, every 20 min during shaken once removed, after cooling to room temperature water bath. The reaction After the sample was transferred to a 50 mL centrifuge tube, respectively, with 3.0 mL of sodium carbonate solution (4.5) times cleaning glass, combined with sodium carbonate solution (4.5) tube was 50 mL (5.8), mixing 5,000 rev/min centrifuged for about 5 min. The supernatant as the test solution, the gas chromatograph Determination.

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