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

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**Animal and vegetable fats and oils -- Determination of wax  
content of olive oils by gas chromatography**

动植物油脂 橄榄油中蜡含量的测定 气相色谱法

**(English Translation)**

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## Table of Contents

- Foreword
- 1 Scope
- 3 Instrument
- 4 Reagents

### Foreword

This standard is identical with the International Olive Oil Council, COI/T .20/Doc. no. 18/Rev. 2/2003 "analysis by capillary Column gas chromatography wax content "(in English).

The content and structure of the standard COI/T .20/Doc. no. 18/Rev. 2/2003 consistent, do the following editorial changes.

--- For ease of use, the terms of the order of arrangement has been adjusted. Article two original title 4.5.1 to 4.6, followed by an original article 4.6, 4.7 to 4.7, 4.8 Title postponed. While Article 4.8 under a new heading two section heading 4.8.1,4.8.2;

--- "The method" be replaced by "this standard";

--- Increase Chapter 3 Instrument Lead "common laboratory instruments and the following instruments";

--- Increase Chapter 4 reagent Lead ", unless otherwise indicated, the water is distilled water or equivalent purity water";

--- Chapter 7 increased precision;

--- The "typical gas chromatogram of the wax fraction of olive oil," organized into Appendix A, the "original appendix" choreography as Appendix B, the sophisticated "methods Degree "arrangement as Appendix C.

The Standard Appendix A, Appendix B, Appendix C are informative appendices.

The standard proposed by the National Food Authority.

This standard by the National Standardization Technical Committee OILS.

This standard was drafted. State Administration of Grain Science Institute.

## 1 Scope

This standard applies to the determination of the wax content of olive oil. This standard can be used to identify machine-virgin olive oil and olive pomace oil.

### Principle 2

Add the appropriate internal standard to the oil and then hydrated silica gel column chromatography separation. Under the experimental conditions the recovery eluted fractions (having a specific Gan Triester less polar) and capillary column gas chromatography analysis.

## 3 Instrument

The following common laboratory instruments and equipment.

### 3.1

conical flask. 25mL.

### 3.2

Glass column. diameter 15.0mm, length 30cm ~ 40cm, with a suitable stopcock.

### 3.3

Gas chromatography. capillary column can be mounted, with the stigma can be injection system.

#### 3.3.1

can be programmed to heat up the oven.

Cool on-column injection 3.3.2 for stigma injector.

#### 3.3.3

a flame ionization detector and converter amplifier.

#### 3.3.4

Records integrator. Together with a converter amplifier (3.3.3), the response time of less than 1s, variable paper speed.

**Note 1:** You can also use the computer processing system, gas chromatography data via computer input into the system.

#### 3.3.5

Capillary column. glass or fused silica, length 8m ~ 12m, the inner diameter of 0.25mm ~ 0.32mm, fixative coating thickness 0.10 $\mu$ m ~ 0.30 $\mu$ m.

**Note 2:** You can use this standard chromatographic separation requirements in line with commercial

fixative, such as SE52, SE54, etc.

**3.4**

micro syringe. 10 $\mu$ L, hardened needle.

**3.5**

electric oscillator.

**3.6**

rotary evaporator.

**3.7**

muffle furnace.

**3.8**

Analytical balance. dividing the value of 0.0001g.

**3.9**

conventional laboratory glassware.

## **4 Reagents**

Unless otherwise indicated, the water is distilled water or equivalent purity.

Silicone 4.1. particle size 60 $\mu$ m ~ 200 $\mu$ m. Silica gel was placed in 500 °C muffle furnace, burning at least 4h. Cooled, silica gel was added fairly 2% of water. Shake to mix. Place at least 12h prior to use in the dark.

**4.2**

hexane. chromatographically pure.

Warning. flammable vapor. Keep away from heat, sparks, open flame. Ensure strict dress cap. Ventilation during use to do. To prevent accumulation of vapors, remove flammable Articles, for example, is not fireproof material heaters or electrical equipment. Hexane toxic inhalation may harm the nervous system cells. Avoid inhalation of volatile gas body. If necessary, use appropriate respiratory equipment. Avoid contact with eyes and skin.

**4.3**

ether. chromatography.

Warning. Highly flammable, moderately toxic. Skin irritation, Harmful if inhaled. Can damage the eyes. Hazard effects may lag. It can form explosive peroxide