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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

GB 31640-2016

National Food Safety Standard – Edible Alcohol

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Foreword

This Standard replaced partial indexes in GB 10343-2008 *Edible Alcohol*; GB 10343-2008 *Edible Alcohol* involved this Standard index shall be subject to this Standard.

National Food Safety Standard – Edible Alcohol

1 Scope

This Standard is applicable to the edible alcohol.

2 Terms and Definitions

2.1 Edible alcohol

The water-contained alcohol taking cereals, potatoes, molasses or other edible crops as the main raw materials; refined through fermentation and distillation; and used for the food industry.

3 Technical Requirements

3.1 Requirements for raw materials

The raw materials shall conform to corresponding product standards and relevant provisions.

3.2 Sensory requirements

The sensory requirements shall conform to the provisions of Table 1.

Table 1 -- Sensory Requirements

Items	Requirements	Test Methods
Appearance	Colorless and transparent	Take appropriate amount of specimen into the beaker; observe the color and luster state under the natural light; it shall be transparent, and without visible foreign matters
Odor	Have the inherent aroma of the ethanol, without abnormal odor	Use plug cylinder to take 10mL of specimen; add 15mL of water; cover the plug, mix evenly. Pour into 50mL small beaker; smell the odor.
Taste	Pure, slightly sweet, no smell	Take 20mL of specimen into 50mL volumetric flask; add 30mL of water; mix evenly; then pour into 100mL beaker; place into 20°C water bath; taste it after it is at constant temperature

3.3 Physical and chemical indicators

A.1.2.4 Iodine standard titration solution $[c(\frac{1}{2} I_2) = 0.01 \text{ mol/L}]$: when using, accurately dilute the 0.1mol/L iodine standard solution for 10 times.

A.1.2.5 Starch indicator (10g/L): prepare as per GB/T 603.

A.1.2.6 Sodium bicarbonate solution $[c(\text{NaHCO}_3)=1\text{mol/L}]$.

A.1.3 Absorb 15.0mL of specimen into 250mL iodine flask; add 15mL of water, 15mL of sodium bisulfite solution, 7mL of hydrochloric acid solution; shake evenly; stand for 1h; take out; use 50mL of water to wash the stopper; titrate with iodine standard solution; when it is close to the end point, add 0.5mL of starch indicator; change the iodine standard titration solution to titrate till the light blue and purple appears (not counting). Add 20mL of sodium bicarbonate solution; slightly open the stopper; shake for 0.5min (colorless); use iodine standard titration solution to continue to titrate till the blue and purple turns to the end point. Meanwhile, do the blank test.

A.1.4 Result calculation

The aldehyde content in the specimen shall be calculated as per Formula (A.1):

$$X = \frac{(V_1 - V_2) \times c \times 0.022}{15} \times 10^6 \quad \dots\dots\dots (A.1)$$

X – aldehyde content (calculated by ethylal) in the specimen; in mg/L;

V_1 – volume of iodine standard titration solution consumed by specimen, in mL;

V_2 – volume of iodine standard titration solution consumed by blank, in mL;

c – concentration of iodine standard titration solution, in mol/L.

0.022 – ethylal mass expressed in g, that is equivalent to 1.00mL of iodine standard

using solution $[c(\frac{1}{2} I_2) = 1.000 \text{ mol/L}]$.

The results shall retain an integer.

A.1.5 Precision

The difference between two independent tests performed under repeatability conditions shall not, if aldehyde content is >5mg/L, exceed 5% average value; if the aldehyde content is ≤5mg/L, it shall not exceed 13% average value.

A.2 Colorimetry

A.2.1 Principle

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