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

GB 28302-2012

Food additives -- Xin, capric glycerides

食品添加剂 辛,癸酸甘油酯

(English Translation)

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1 Scope

This standard applies to octanoic acid, capric acid and glycerol reaction prepared by the food additives Xin, capric glyceride.

2 Structural formula

H₂C-OCOR

HC-OCOR

H₂C-OCOR

among them.

R may be R1 or R2

R1. C₈H₁₇

R2. C₁₀H₂₁

3 Technical requirements

3.1

sensory requirements. should be consistent with the provisions of Table 1.

Table 1 sensory requirements

The project requires a test method Color and colorless Odor tasteless State liquid state
Take the appropriate sample in a clean, dry white porcelain dish, in the natural light,
observe the color and the state, and smell its taste

3.2

Physical and chemical indicators. should be consistent with the provisions of Table 2.

Table 2 Physical and chemical indicators

Item Index Test Method Peroxide value/(mmol/kg) ≤ 1.0 GB/T 5538 Iodine value/(g/100g)
≤ 1.0 Appendix A A.2 Acid value (in KOH)/(mg/g) ≤ 0.1 Appendix A A.3 Saponification

value (in KOH)/(mg/g) 325 to 360 GB/T 5534 Relative density (20 °C/4 °C) 0.940 ~ 0.955
 GB/T 5009.2 Heavy metals (Pb)/(mg/kg) ≤ 10 GB/T 5009.74 Total arsenic (in As)/(mg/kg)
 ≤ 2 GB/T 5009.11 Appendix A Testing method A.1 General provisions the reagents and
 water used in this standard, when not specified in other requirements, refer to the analysis
 of pure reagents and GB/T 6682-2008 in the provisions of the three Water level. Standard
 titration solution used in the analysis, the standard solution for the determination of
 impurities, preparations and products, in the absence of other requirements, according to
 press GB/T 601, GB/T 602, GB/T 603. The solution used in the analysis refers to water
 when it is not specified with any solvent formulation Solution.

A.2 Determination of iodine value A.2.1 Reagents and materials A.2.1.1 Acetic acid.

A.2.1.2 Iodine.

A.2.1.3 Chlorine gas.

A.2.1.4 Cyclohexane-acetic acid mixture. 1 1.

A.2.1.5 Potassium iodide solution. 150 g/L.

A.2.1.6 Starch indicator solution. 10 g/L.

A.2.1.7 sodium thiosulfate standard titration solution. $c(\text{Na}_2\text{S}_2\text{O}_3) = 0.1\text{mol/L}$.

A.2.1.8 Amiodonium chloride solution (Wechsler solution).

Dissolved in 13 g of iodine in 1000 mL of acetic acid (slightly heated when dissolved), and
 then placed in 1000mL brown bottle, cooled, this is iodine liquid. Measure 100mL ~.200mL
 in another brown bottle, set the shade for adjustment purposes. Pass chlorine to the
 remaining 800mL ~ 900 mL of iodine solution, until the solution gradually fades from dark
 until it is orange-red transparent. The amount of chlorine gas is corrected by the calibration
 method Pre-retained iodine solution is adjusted.

Calibration method. take iodine solution and the new preparation of iodine chloride solution
 (Wechsler solution) 20.0mL, respectively, by adding potassium iodide solution 20mL, and
 then add 100mL of water, with 0.1mol/L sodium thiosulfate standard titration solution
 titrated to the solution was pale yellow, add starch Indicator 1mL, continue to titrate until the
 blue disappears. The volume of sodium thiosulfate standard titration solution consumed by
 the newly prepared Wechsler solution should be close to 2 times the iodine solution.

A.2.2 Analysis steps Weigh 2g ~ 3g sample, accurate to 0.001g, placed in iodine bottle, add
 cyclohexane - acetic acid mixture 20mL. To be dissolved After adding 25.0mL of Weisheng
 solution with pipette, shake well and place it in dark place around 25 °C for 30min. Then put
 the iodine from the bottle Dark out, add potassium iodide solution 20mL, then add water
 100mL, with sodium thiosulfate standard titration solution titration, while edge titration to
 Solution was pale yellow, add starch instructions 1mL, continue to titrate until the blue
 disappears. At the same time do blank test.

A.2.3 Calculation of results the iodine value is expressed in terms of mass fraction w_1 and the value in grams per gram (g/100g), calculated according to formula (A.1) $w_1 = (V_1 - V_2) \times c_1 \times 0.1269 \times m_1 \times 100$ (A.1) where.

V_1 --- blank test consumption of sodium thiosulfate standard titration solution volume value in milliliters (mL);

V_2 --- the value of sodium thiosulfate standard titration solution consumed in the sample, in milliliters (mL);

c_1 --- sodium thiosulfate standard titration solution concentration of the exact value of the unit per mole (mol/L);

0.1269 --- The molar mass of iodine atom in grams per millimolar (g/mmol) [$M(I) = 126.9$];

m_1 --- the mass of the sample, in grams (g);

100 --- quality conversion factor.

The experimental results are based on the arithmetic mean of the parallel measurement results. The absolute difference in the results of two independent tests obtained under repeatability conditions the value is not more than 0.05 g/100 g, and more than 0.05 g/100 g is not more than 5%.

A.3 Determination of acid value A.3.1 Reagents and materials A.3.1.1 Potassium hydroxide - ethanol standard titration solution. $c(KOH) = 0.1$ mol/L.

A.3.1.2 95% ethanol. phenolphthalein as an indicator, with potassium hydroxide solution and pale pink.

A.3.1.3 phenolphthalein indicator solution. 10g/L.

A.3.2 Analysis steps Weigh 15g sample, accurate to 0.0001g, placed in a conical flask, add 95% ethanol about 100mL, heated to dissolve. Join Phenolphthalein indicator solution of about 6 drops, immediately potassium hydroxide - ethanol standard titration solution titrated to pale pink, to maintain 30s does not fade as the end.

A.3.3 Calculation of results the acid value is expressed in terms of mass fraction w_2 of potassium hydroxide (KOH), expressed in milligrams per gram (mg/g), calculated according to formula (A.2) $w_2 = V_3 \times c_2 \times 56.1 \times m_2$ (A.2) where.

V_3 --- the value of potassium hydroxide-ethanol standard titration solution consumed in the sample, in milliliters (mL);

c_2 --- potassium hydroxide - ethanol standard titration solution concentration of the exact value, the unit is mol per liter (mol/L);

56.1 - the molar mass of potassium hydroxide in milligrams per millimolar (mg/mmol);

m_2 --- the mass of the sample, in grams (g).

The experimental results are based on the arithmetic mean of the parallel measurement results. The absolute difference in the results of two independent tests obtained under repeatability conditions the value is not more than 0.01mg/g.