

ICS 67.220.20
CCS X 42



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

GB/T 1900-1980

Replacing GB/T 1900-1980

**National food safety standards of food additives dibutyl
hydroxy toluene (BHT)
(English Translation)**

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Foreword

This standard replaces GB/T 1900-1980 "food additive butylated hydroxytoluene (BHT)".

This standard compared with GB/T 1900-1980, the main changes are as follows.

--- Standard name from "food additive butylated hydroxytoluene (BHT)" was changed to "food additive dibutyl hydroxy carboxylic Benzene (BHT)";

--- Moisture index $\leq 0.1\%$ by the modification of $\leq 0.05\%$;

--- Residue on ignition $\leq 0.01\%$ by the index revised to $\leq 0.005\%$;

--- Heavy metal indicator by the $\leq 0.0004\%$ modified to ≤ 5 (mg/kg);

Determination --- melting range of modifications for the determination of the melting point of beginning;

--- Free cresol calculation formula, normality and modify milliequivalents molar concentrations and molar mass.

Appendix A of this standard is a normative appendix.

This standard replaces the standards previously issued as follows.

--- GB/T 1900-1980.

National Food Safety Standard Food additives butylated hydroxytoluene (BHT)

1 Scope

This standard applies to p-cresol, isobutyl alcohol as raw materials and concentrated sulfuric acid as a catalyst, aluminum oxide as a dehydrating agent, the reaction of food Additives butylated hydroxytoluene (BHT).

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.

3 Formula, relative molecular mass and structural formula

Formula 3.1

C₁₅H₂₄O

3.3 Relative molecular mass

220.36 (according to 2007 international relative atomic mass)

4 Technical Requirements

4.1

Sensory requirements. comply with Table 1.

Table 1 Sensory requirements

Project requires test methods the color and texture of white crystal or crystalline powder
Take appropriate laboratory sample, placed in a clean, dry glass Petri dish, in natural light, visually observed

4.2

Physical indicators. to comply with Table 2.

Table 2. Physical and chemical indicators

Item Index Test Method Melting point (the beginning of melting)/°C ≥ 69.0 Appendix A A.4
Water, w /% ≤ 0.05 Appendix A A.5 Residue on ignition, w /% ≤ 0.005 A.6 in Appendix A
Sulfate (SO₄ dollars), w /% ≤ 0.002 Appendix A A.7 Arsenic (As)/(mg/kg) ≤ 1 Appendix A
A.8 Heavy metals (Pb)/(mg/kg) ≤ 5 A.9 in Appendix A Free phenol (p-cresol dollars), w /%
 ≤ 0.02 Appendix A A.10 Appendix A (Normative) Testing method A.1 Warning Some test
procedures prescribed test method can lead to dangerous situations. The operator shall
take appropriate safety and health practices.

A.2 General Provisions Unless otherwise indicated in the analysis using only confirm three
analytical grade reagents and water GB/T 6682-2008 stipulated.

Used in the analysis standard titration solution, impurity standard solution, preparations and
products, did not indicate when the other requirements, according to GB/T 601, GB/T 602
and GB/T 603 provisions of the preparation.

A.3 Identification Test A.3.1 Reagents and materials A.3.1.1 ethanol.

A.3.1.2 chloroform.

A.3.1.3 sodium nitrite solution. 3g/L.

A.3.1.4 o-dianisidine solution. Weigh 250mg of o-dianisidine, dissolved in 50mL of anhydrous ethanol, plus 100mg of active Charcoal, shaking 5min, filtered, the filtrate taken 40mL, 60mL add hydrochloric acid solution (110). Day of preparation, in the dark.

A.3.2 Analysis step

Laboratory samples taken from about 5mg, was added 2.5mL of anhydrous ethanol and dissolved, diluted with 25mL water, mix, add 2mL two o-anthranilic Hong amine solution, shake, add 0.8mL sodium nitrite solution, mixed, placed 5min, added 0.5mL chloroform, shake vigorously 0.5min place stratification, chloroform layer should be magenta or red.

A.4 Determination of melting point According to GB/T 617 performed. In the initial melting temperature indicates the melting point.

A.5 Determination of Moisture Weigh 5g laboratory samples, accurate to 0.0001g, was added 10mL of anhydrous methanol continuously shaken, the water extraction. Press remaining the provisions of GB/T 606 will be.

A.6 Determination of residue on ignition A.6.1 Reagents and materials sulfuric acid.

A.6.2 Analysis step

In the constant weight of the quartz crucible, weighed 10g laboratory samples, accurate to 0.01g, low heat slowly heating carbonization, to avoid burning, After the disappearance of tobacco, plus about 1.0mL sulfuric acid wet residue, using the above method is heated to sulfuric acid vapor Yat do, moved to (800 ± 25) °C temperature Burning oven to constant weight.

A.6.3 Calculation Results Burning residue mass fraction w_1 , expressed in%, according to formula (A.1) Calculated.

$$w_1 = \frac{m_2 - m_1}{m} \times 100\%$$

Where.

Value m_1 --- crucible mass in grams (g);

The value of the total mass m_2 --- crucible and ash in grams (g);

Quality m --- sample value in units of grams (g).

The arithmetic average of the results of two parallel determination for reporting results. Two parallel determination results of absolute difference is not more than 0.0005%.

Determination A.7 sulfate A.7.1 Reagents and materials A.7.1.1 hydrochloric acid solution.

1mol/L.

A.7.1.2 barium chloride solution. 50g/L, with a new temporary use.

A.7.1.3 sulphate (SO₄) standard solution. 0.1mg/mL.

A.7.2 Analysis step

Weigh 5.0g laboratory samples, accurate to 0.01g, a 50mL beaker, add 30mL freshly boiled cooled water, while heating stirring to dissolve the sample, heating was stopped, stirred and cooled to room temperature, filtered to 50mL colorimetric tube, add 5mL hydrochloric acid solution, adding 5mL Barium chloride solution, diluted with freshly boiled cooled water to 50mL, shake, place 10min, the turbidity was not greater than the standard.

Standard 1mL sulfate standard solution, the same treatment simultaneously with the sample.

A.8 Determination of Heavy Metals A.8.1 Reagents and materials A.8.1.1 glacial acetic acid solution. 1mol/L.

A.8.1.2 hydrogen sulphide saturated water. using now.

A.8.1.3 Lead (Pb) standard solution. 0.01mg/mL.

A.8.2 Analysis step

Weigh about 1.0g laboratory samples, accurate to 0.01g. Add 1mL of sulfuric acid to make it moist, slowly burning to sulfuric acid vapor divisible in Burning 500 °C ~ 600 °C to complete ashing, let cool, add 2mL of hydrochloric acid, add 5mL water evaporated. Add 15mL water and 2mL acetic acid solution, After dissolving micro heat transferred to 50mL colorimetric tube, add 10mL saturated hydrogen sulphide water, shake, place 10min, shall not be deeper than the color produced standard.

0.5mL standard is to take the lead standard solution, and treated in the same sample at the same time.

A.9 Determination of Arsenic According to GB/T 5009.76 Gutzeit method. Sample processing according to GB/T 5009.76 dry ashing method.

Determination of free phenols A.10 A.10.1 reagents and materials A.10.1.1 bromine standard solution. $c(1/2Br_2) = 0.1mol/L$.

A.10.1.2 sodium thiosulfate standard titration solution. $c(Na_2S_2O_3) = 0.1mol/L$.

A.10.1.3 sodium hydroxide solution. 25g/L.

A.10.1.4 hydrochloric acid solution. 11.

A.10.1.5 potassium iodide solution. 100g/L.

A.10.1.6 starch indicator solution. 10g/L.