

# Sanitation Standard for Butane to be Used in Food

(Amended Date:2013-08-20)

1.DOH Food No. 0970404346 Announced, 12 August 2008

2.Amended on August 20, 2013

Article 1 This Standard is prescribed in accordance with the provisions of Article 17 of the Act Governing Food Sanitation.

Article 2 Butane referred in this standard includes both n-butane (CAS Reg. No. 106-97-8) and isobutane (CAS Reg. No. 75-28-5). The formula of the chemical is indicated as  $C_4H_{10}$ , and its molecular weight is 58.12.

Article 3 N-butane to be used in food shall meet the requirements according to the following standards:

Item	Standards
Assay	Not less than 96% (v/v)
Description	Colorless, and flammable gas the flavor of natural gas
Boiling temperature	-0.5 °C
Solubility	One volume of water dissolves 0.15 volume; 1 volume of alcohol dissolves 18 volumes; 1 volume of ether dissolves 25 volumes, at 17°C and 770 mmHg.
Infrared absorption spectrum	The spectrum of a sample exhibits absorptions, among others, at approximately 3.4μm (vs), 6.8μm (s), 7.2μm (m) and 10.4μm (m).
Moisture purity	Not more than 0.005 %
High-boiling residue	Not more than 5 mg/kg
Acidity of high-boiling	Add 10 mL of water to the sample, mix by swirling

residue	for about 30 s, add 2 drops of methyl orange TS, insert the stopper in the tube, and shake the tube vigorously. No pink or red color appears in the aqueous layer.
Sulfur compounds analysis	Carefully open the container valve to produce a moderate flow of gas. Do not direct the gas stream toward the face, but deflect apportion of the stream toward the nose. The gas is free from the characteristic odor of sulfur compounds.

Article 4 Isobutane to be used in food shall meet the requirements according to the following standards:

Item	Standards
Assay	Not less than 94% (v/v)
Description	Colorless, and flammable gas the flavor of natural gas
Boiling temperature	-11 °C
Infrared absorption spectrum	The spectrum of a sample exhibits absorptions, among others, at approximately 3.4μm (vs), 6.8μm (s), 7.2μm (m) and 10.9μm (m).
Moisture purity	Not more than 0.005 %
High-boiling residue	Not more than 5 mg/kg
Acidity of high-boiling residue	Add 10 mL of water to the sample, mix by swirling for about 30 s, add 2 drops of methyl orange TS, insert the stopper in the tube, and shake the tube vigorously. No pink or red color appears in the aqueous layer.
Sulfur compounds analysis	Carefully open the container valve to produce a moderate flow of gas. Do not direct the gas stream toward the face, but deflect apportion of the stream toward the nose. The gas is free from the characteristic odor of sulfur compounds.

Article 5 This Standard shall be implemented from the date of promulgation.