

Approval/authorization for use of 2-pentanol, propionaldehyde, and 6-methylquinoline as food additives

Purpose

This activity is to newly designate 2-pentanol, propionaldehyde, and 6-methylquinoline as authorized food additives.

Under Article 10 of the Food Sanitation Law, food additives may be used or marketed only when they are authorized by the Minister of Health, Labour and Welfare. Where standards for use of additives and/or their compositional specifications are established under Article 11 of the Law, those additives may be marketed only when they meet the standards and/or specifications.

In response to a request from the Minister, the Subcommittee on Food Additives under the Food Sanitation Committee which is established under the Pharmaceutical Affairs and Food Sanitation Council has discussed the adequacy of the designation of these substances as food additives. Conclusion of the subcommittee is outlined as below.

Conclusion from the subcommittee

The Minister should designate 2-pentanol, propionaldehyde, and 6-pethylquinoline, based on Article 10 of the Food Sanitation Law, as food additives unlikely to harm human health, and establish compositional specifications for these substances, based on Article 11 of the Law (see Attachments 1, 2 and 3).

Attachment 1

2-Pentanol *sec*-Amyl Alcohol

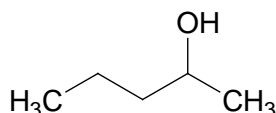
Standard for use

It shall not be used for purposes other than flavoring.

Compositional specifications

Name of the substance: 2-Pentanol

Structural formula:



Molecular formula: C₅H₁₂O

Mol. Weight: 88.15

Chemical name [CAS number] : Pentan-2-ol [6032-29-7]

Content: 2-Pentanol contains not less than 98.0% of 2-pentanol (C₅H₁₂O).

Description: 2-Pentanol occurs as a colorless, transparent liquid having a characteristic odor.

Identification: Determine the infrared absorption spectrum of 2-Pentanol, as directed in the Liquid Film Method under Infrared Spectrophotometry, and compare it with the Reference Spectrum. Both spectra exhibit absorptions having about the same intensity at the same wavenumbers.

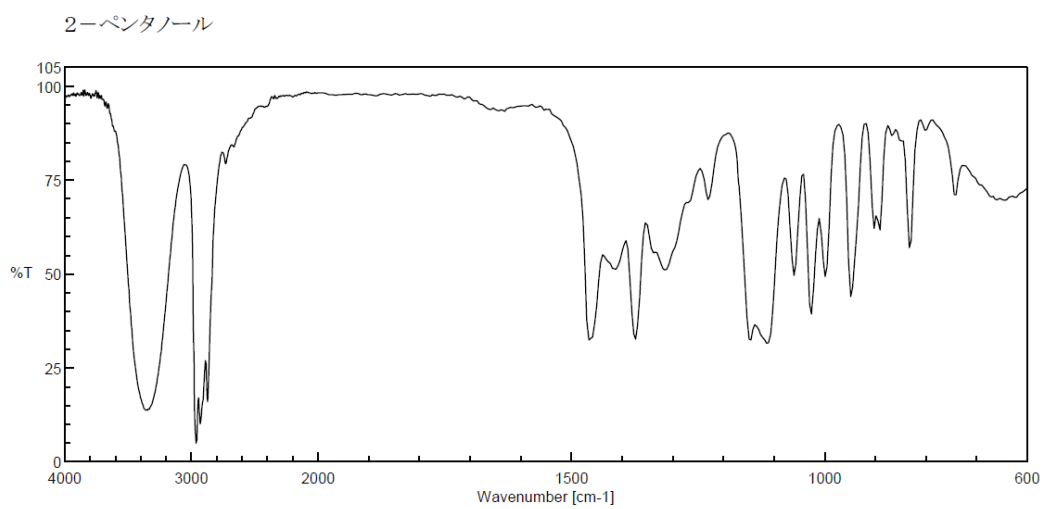
Purity:

(1) Refractive index n_D^{20} : 1.403–1.409.

(2) Specific gravity d_{25}^{25} : 0.802–0.809.

Assay: Proceed as directed in the Peak Area Percentage Method in the Gas Chromatographic Assay under the Flavor Substance Tests. Use operating conditions (2).

Reference Spectrum



Attachment 2

Propionaldehyde

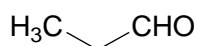
Standard for use

It shall not be used for purposes other than flavoring.

Compositional specifications

Name of the substance: Propionaldehyde

Structural formula:



Molecular formula: C₃H₆O

Mol. Weight: 58.08

Chemical name [CAS number]: Propanal [123-38-6]

Content: Propionaldehyde contains not less than 97.0% of propionaldehyde (C₃H₆O).

Description: Propionaldehyde occurs as a colorless, transparent liquid having a characteristic odor.

Identification: Determine the infrared absorption spectrum of propionaldehyde, as directed in the Liquid Film Method under Infrared Spectrophotometry, and compare it with the Reference Spectrum. Both spectra exhibit absorptions having about the same intensity at the same wavenumbers.

Purity:

(1) Refractive index n_D^{20} : 1.360–1.380.

(2) Specific gravity d_{25}^{25} : 0.796–0.814.

(3) Acid value Not more than 5.0 (Flavoring Substance Tests).

Assay: Proceed as directed in the Peak Area Percentage Method in the Gas Chromatographic Assay under the Flavor Substance Tests. Use operating conditions described below. Obtain the sum of the peak areas of all components that appear within 60 minutes after injection, and determine the peak area percentage of propionaldehyde sought to the sum as the content.

Operating conditions

Detector: Hydrogen flame ionization detector or thermal conductivity detector.

Column: Use a silicate glass capillary column (0.25–0.53 mm in internal diameter and 30–60 m in length), coated with a 0.25–1 μm thick layer of dimethyl polysiloxane or polyethylene glycol.

Column temperature: Maintain the temperature at 50°C for 5 minutes, and raise

to 230°C at a rate of 5°C/minute, and then maintain at 230°C for 19 minutes.

Inlet temperature: 125–175°C.

Detector temperature: 250–300°C.

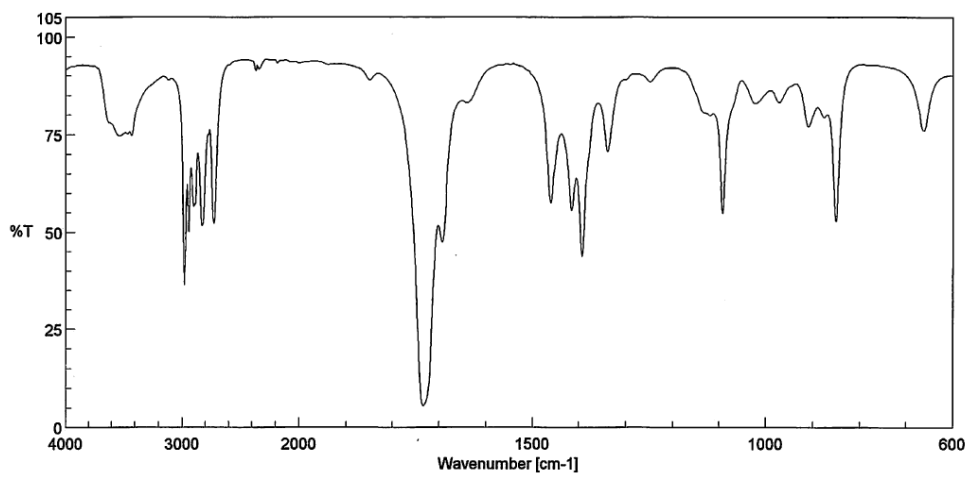
Injection: Split (30:1–250:1). Adjust the column so that no component exceeds the capacity of the column.

Carrier gas: Use helium or nitrogen.

Flow rate: Adjust the flow rate so that the peak of the component to be determined appears within 5–10 minutes.

Reference Spectrum

プロピオンアルデヒド



Attachment 3

6-Methylquinoline

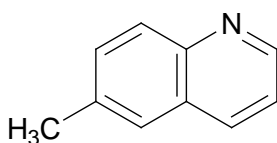
Standard for use

It shall not be used for purposes other than flavoring.

Compositional specifications

Name of the substance: 6-Methylquinoline

Structural formula:



Molecular formula: C₁₀H₉N

Mol. Weight: 143.19

Chemical name [CAS number]: 6-Methylquinoline [91-62-3]

Content: 6-Methylquinoline contains not less than 98.0% of 6-methylquinoline (C₁₀H₉N).

Description: 6-Methylquinoline occurs as a colorless, transparent liquid having a characteristic odor.

Identification: Determine the infrared absorption spectrum of 6-methylquinoline, as directed in the Liquid Film Method under Infrared Spectrophotometry, and compare it with the Reference Spectrum. Both spectra exhibit absorptions having about the same intensity at the same wavenumbers.

Purity:

(1) Refractive index n_D^{20} : 1.611–1.617.

(2) Specific gravity d_{25}^{25} : 1.060–1.066.

(3) Acid value Not more than 1.0 (Flavoring Substance Tests).

Assay: Proceed as directed in the Peak Area Percentage Method in the Gas Chromatographic Assay under the Flavor Substance Tests. Use operating conditions described below.

Operating conditions

Detector: Hydrogen flame ionization detector or thermal conductivity detector.

Column: Use a silicate glass capillary column (0.25–0.53 mm in internal diameter and 30–60 m in length), coated with a 0.25–1 μm thick layer of dimethyl polysiloxane or polyethylene glycol.

Column temperature: Raise temperature from 150°C to 230°C at a rate of 5°C/minute, and then maintain at 230°C for 24 minutes.

Inlet temperature: 225–275°C.

Detector temperature: 250–300°C.

Injection: Split (30:1–250:1). Adjust the column so that no component exceeds the capacity of the column.

Carrier gas: Use helium or nitrogen.

Flow rate: Adjust the flow rate so that the peak of the component to be determined appears within 5–10 minutes.

Reference Spectrum

6-メチルキノリン

