GT141

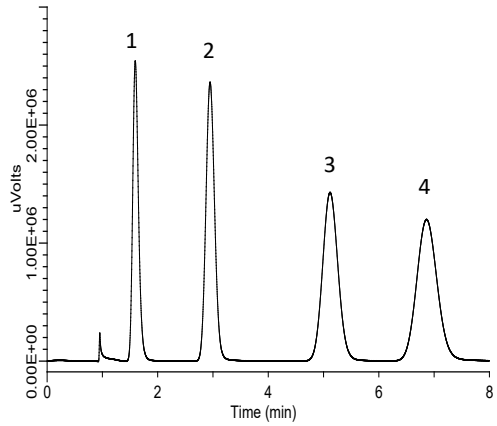
GL Sciences Inc.

Analysis of Ethanol in Food

Presented here is an analysis of ethanol in food using FID mounted gas chromatograph dedicated to packed column. For the analysis of sample containing non-volatile or refractory components, selecting an insert injection method and by keeping the residual contaminants within an injection port liner, the impact on analytical column can be reduced. In the analysis of soy sauce or soybean paste used in this example, the sample can be quantitated only by dilution.

Analysis Example

＜Standard Sample＞



1. Methanol
2. Ethanol
3. 2-Propanol
4. 1-Propanol

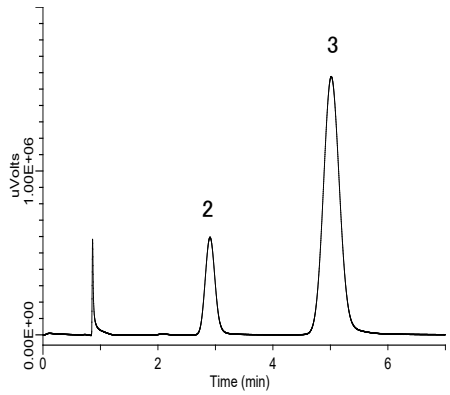
(each 0.5 % in H2O, v/v)

Conditions

Column	:Gaskuropack 54 60/80 Glass 1/4" O.D. X 2 m X 3.0 mmI.D.
Col.Temp.	:150 ℃
Carrier Gas	: N_2 30 mL/min
Detector	: FID 200 ℃
Injection	: 200 ℃
Sample Size	: 1 µL

＜Actual Sample＞

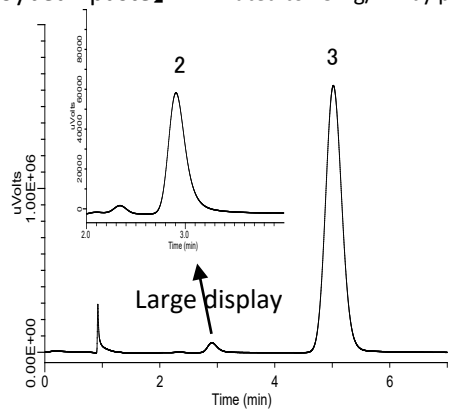
【Soy sauce】・・・5 times diluted by purified water



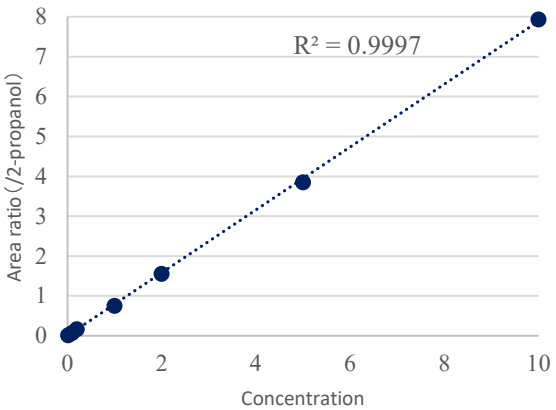
Ethanol contained in soy sauce and soybean paste was analyzed. Each sample was diluted by an arbitrary amount of purified water and centrifuged (5,000xg, 1 min.). For 1mL of supernatant, 10 µL of 50% internal standard material was added. Internal reference method was applied as an analysis method and 2-propanol was used as internal standard material.

And an insert injection method was adopted as injection method.

【Soybean paste】・・・Diluted to 25mg/mL by purified water

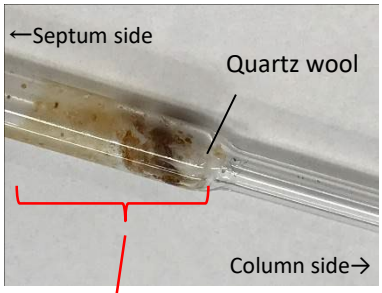


Calibration curve



Insert Injection Port

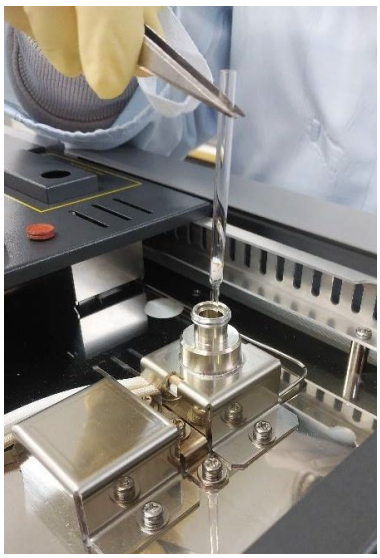
＜Photo right after sample injection＞



Non-volatile components remained.

When glass column is used, use an insert injection port so that non-volatile or refractory component may not be introduced directly into the column. Photo on the left-hand side shows an injection port liner right after injection of soy sauce and soybean paste. It is known that non-volatile component contained in the sample remained at the injection port liner after usage. By using an insert injection port, particularly useful results can be obtained, enabling the quantitation only by dilution of sample as well as the extension of column life time.

When liner is contaminated,



When an injection port liner is contaminated, replace with a new one.

Related Products

- Column
  - Packing material
    Gaskuropack 54 60/80 20 g
    Cat.No.1002-45406
  - Empty column
    Glass 1/4" O.D. x 2 m x 3.0 mmI.D.
    Cat.No.3003-64120

  * Packed column also can be manufactured.

- Injection port liner
  - Glass liner(for GC3220, GC 3210, andGC-4000 Plus)
    Cat.No. 2701-22753

- Wool
  - Quartz wool Fine(1 ~ 6 µm) Silane finish
    Cat.No. 3001-12404

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