

Analysis of ethanol and glycerol in hand sanitizer

• GC Application



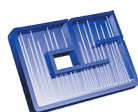
Abstract

Hand sanitizer has an antibacterial effect on bacteria and is used for the purpose of sterilizing and disinfecting hands and skin to prevent infection. Recently, interest in hand sanitizers has been increasing as a preventive product against the rapid spread of the COVID-19.

Ethanol, the main component of the hand sanitizer, denatures the proteins of bacteria and viruses and alters lipids, causing them to lose function.

In the case of a gel-type hand sanitizer, if the content of ethanol is 40% or less, the sterilizing power is significantly reduced, and if it is 54 ~ 62%, it is known to be the most ideal and suitable for use in the human body. In addition, in the case of high concentrations of ethanol, the cell membrane of bacteria becomes harder and cannot penetrate into the bacteria, so the sterilizing power is reduced, so KFDA(Korea Food & Drug Administration) regulates the ethanol content standard of hand sanitizer as 54.7 ~ 70% (w/w, v/v).

This application is for simultaneous analysis of ethanol and glycerol used in hand sanitizers.



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Method

GC Conditions	FID Conditions
DB-624 (30 m x 0.32 mm x 1.8 μ m)	Temperature: 250°C
Oven temperature program: 40°C (5 min) \rightarrow 20°C/min \rightarrow 250°C (0.5 min)	Air: 300mL/min
Carrier gas: N ₂ , 3mL/min	H ₂ : 30mL/min
I	Makeup gas: 20mL/min
Injection volume: 1 μ L	

Result

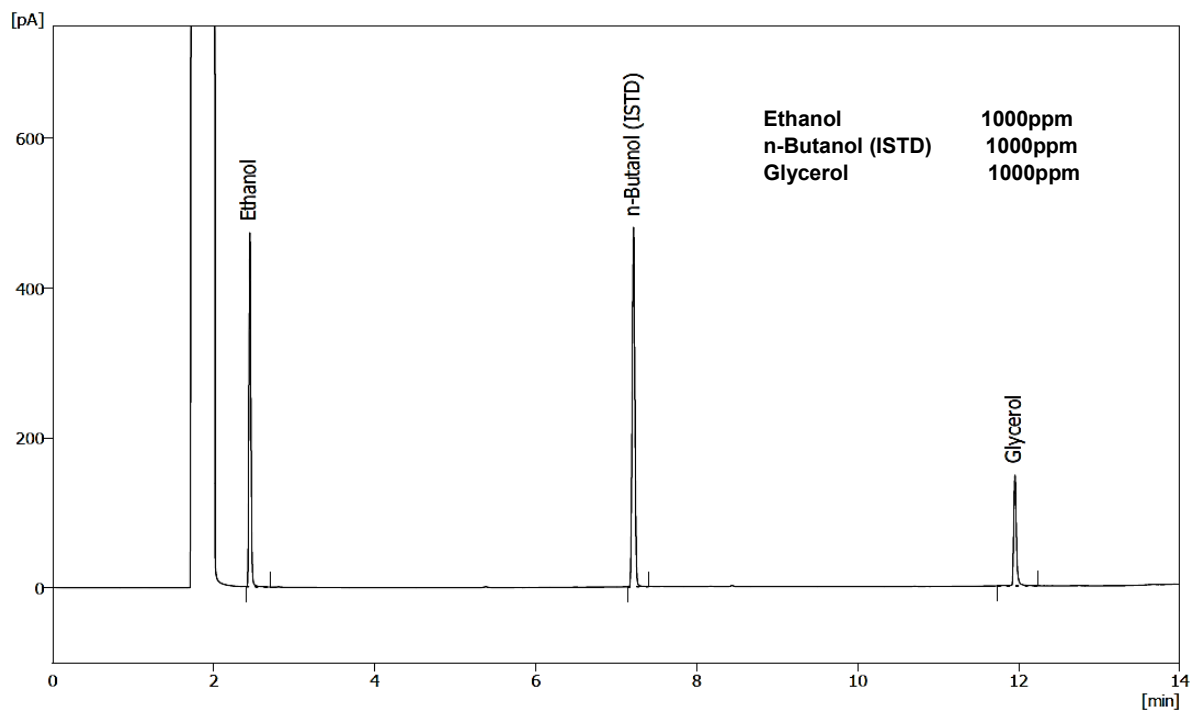


Fig 1. Chromatogram [1. Ethanol, 2. n-Butanol (ISTD), 3. Glycerol]

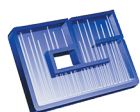
Reference



- KFDA(Korea Food & Drug Administration)

Homepage: www.youngincm.com

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