

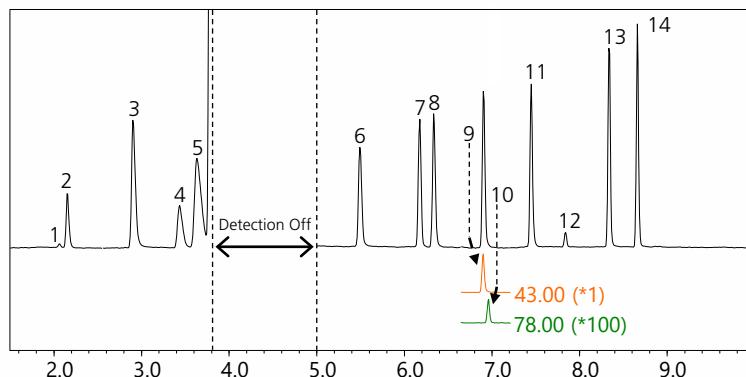
CoreFocus
Report
No.393

GCMS AOC SH Series

SH-624

Analysis of Impurities in Alcohol-Based Hand Sanitizers

Keywords: FDA Guideline, Direct Injection GC-MS Method



1. Acetaldehyde
2. Methanol
3. Ethanol
4. Acetone
5. Isopropyl Alcohol
6. 1-Propanol
7. Ethyl Acetate
8. 2-Butanol
9. Isobutanol
10. Benzene
11. 1-Butanol
12. 1, 1-Diethoxyethane
13. 3-Methyl-1-Butanol
14. Amyl Alcohol

Instrument Configuration

Model	: GCMS-QP™2020 NX
Auto injector	: AOC™-20i plus
Auto sampler	: AOC-20s Plus
Column	: SH-624 (30m x 0.25 mm I.D., 1.4 µm), P/N : 221-75863-30
GC	
Injection temp.	: 250 °C
Injection mode	: Split
Split ratio	: 50
Carrier gas	: He
Carrier gas control	: Constant column flow rate (1 cm/min)
Column oven temp.	: 40 °C (5 min) - 30 °C /min - 240 °C (4 min)*, Total 15.67 min
Injection volume	: 1.0 µL
MS	
Ion source temp.	: 230 °C
Interface temp.	: 240 °C
Ionization method	: EI
Measurement mode	: Scan/SIM (FASST mode)
Scan range	: <i>m/z</i> 29 to 300
SIM ions	: See MS table
Event time	: Scan 0.2 s, SIM 0.3 s

MS Table

Time (min)	Compound Name	Target	Ident 1	Ident 2
1.5 – 2.56	Acetaldehyde	44.0	29.0	-
	Methanol	31.0	29.0	-
2.56 – 4.00	Ethanol	31.0	45.0	-
	Acetone	43.0	58.0	-
5.00 – 6.65	Isopropyl alcohol	45.0	59.0	-
	1-Propanol	31.0	42.0	59.0
6.65 – 7.20	Ethyl acetate	43.0	61.0	-
	2-Butanol	45.0	59.0	-
7.20 – 10.00	Isobutanol	43.0	42.0	-
	Benzene	78.0	77.0	-
7.20 – 10.00	1-Butanol	56.0	41.0	31.0
	1, 1-Diethoxyethane (Acetal)	45.0	73.0	103.0
	3-Methyl-1-butanol	55.0	42.0	70.0
	Amyl alcohol	42.0	55.0	41.0

The detector voltage was set to a relative value based on tuning.

* Under this oven heating condition, a high-power oven model is necessary.

Source : Application News M315 ([JP](#), [ENG](#))

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