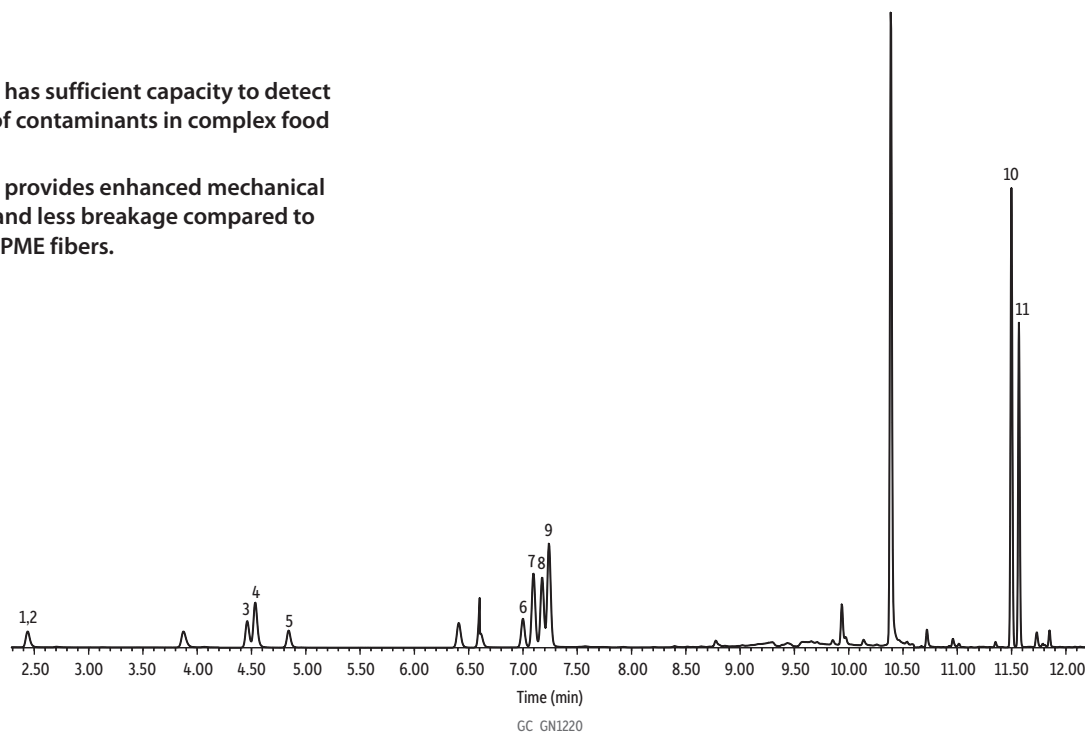


Furan and Alkylfurans in Instant Coffee Spiked at 1000 µg/kg on Rxi-624Sil MS

- SPME Arrow has sufficient capacity to detect high levels of contaminants in complex food matrices.
- SPME Arrow provides enhanced mechanical robustness and less breakage compared to traditional SPME fibers.



Peaks	Retention Time (min)	Ion (Quantifier)	Ion (Qualifier)	Dwell Time (ms)
1. Furan-d4	2.428	72	42	50
2. Furan	2.447	68	39	50
3. 2-Methylfuran-d6	4.464	88	58	30
4. 2-Methylfuran	4.536	82	53	30
5. 3-Methylfuran	4.846	82	53	30
6. 2-Ethylfuran-d5	7.001	101	55	30
7. 2-Ethylfuran	7.100	81	96	30
8. 2,5-Dimethylfuran-d3	7.179	99	84	30
9. 2,5-Dimethylfuran	7.243	95	67	30
10. 2-Pentylfuran-d11	11.501	149	83	30
11. 2-Pentylfuran	11.570	138	81	30

Column Rxi-624Sil MS, 30 m, 0.25 mm ID, 1.40 µm (cat.# 13868)

Standard/Sample

Diluent: N/A

Conc.: 1000 µg/kg

Injection split (split ratio 100:1)

Liner: Topaz 1.8 mm ID straight/SPME inlet liner (cat.# 23280)

Inj. Temp.: 280 °C

Split Vent Flow Rate: 140 mL/min

Oven

Oven Temp.: 35 °C (hold 3 min) to 75 °C at 8 °C/min to 200 °C at 25 °C/min (hold 1 min)

Carrier Gas He, constant flow

Flow Rate: 1.4 mL/min

Detector

MS

Transfer Line Temp.: 280 °C

Analyzer Type: Quadrupole

Source Temp.: 325 °C

Quad Temp.: 200 °C

Electron Energy: 70 eV

Tune Type: PFTBA

Ionization Mode: EI

Instrument

Agilent 7890B GC & 5977B MSD

Sample Preparation

Data was collected by extracting via HS-SPME from a 20 mL vial (cat.# 23083) capped with a magnetic screw-thread cap (cat.# 23091). The vial contained 0.5 g of instant coffee and 5 mL of sodium chloride solution spiked with 500 ng of each analyte (1000 ng/g final concentration). Internal standards were spiked at 2000 ng/g. A Restek PAL SPME Arrow (120 µm carbon wide range [WR]/PDMS; cat.# 27487) was used.

SPME Arrow sampling conditions: 1 min extraction time, 10 min incubation at 50 °C, 1 min desorption at 280 °C, agitation at 250 rpm.

Notes

A furan/alkylfurans standard (cat.# 33334) is now available.