CDS solutions

APPLICATIONS INFORMATION USING ADVANCED SAMPLE HANDLING TECHNOLOGY

Fragrance Analysis Using a Quartz Tube Microtrap

A standard Pyroprobe quartz tube can be turned into a microtrap by filling it with a sorbent material, such as Tenax. When connected to a small vacuum pump, the microtrap can be used to collect volatile organics from the air for analysis. Once the sample is collected, the microtrap is thermally desorbed in the Pyroprobe, using the coil filament, which automatically starts the GC run. The microtrap can be reused by conditioning between runs at 350°C for 60 seconds.

For the chromatograms shown in Figures 1 and 2, gel-style air fresheners were opened and the air next to them sampled with the microtrap for one minute. The trap was then desorbed at 350°C using the Pyroprobe, interfaced to the GC in the normal way. Operating parameters for the Pyroprobe and GC are listed on the back of this sheet.

Figure 1 shows the compounds collected from a small freshener product intended to be inserted into a warmer in use. In this example, however, the sample was taken at room temperature. The name of the product suggested a fresh, outdoor scent, and some of the compounds identified include limonene, gardenol and alpha-citronellol.

The second product, a larger air freshener used at room temperature, had a more spice-like fragrance. Some of the compounds identified include cineol, menthol and methyl salicylate. The peaks numbered in the chromatograms are identified in Table 1 on the reverse side.

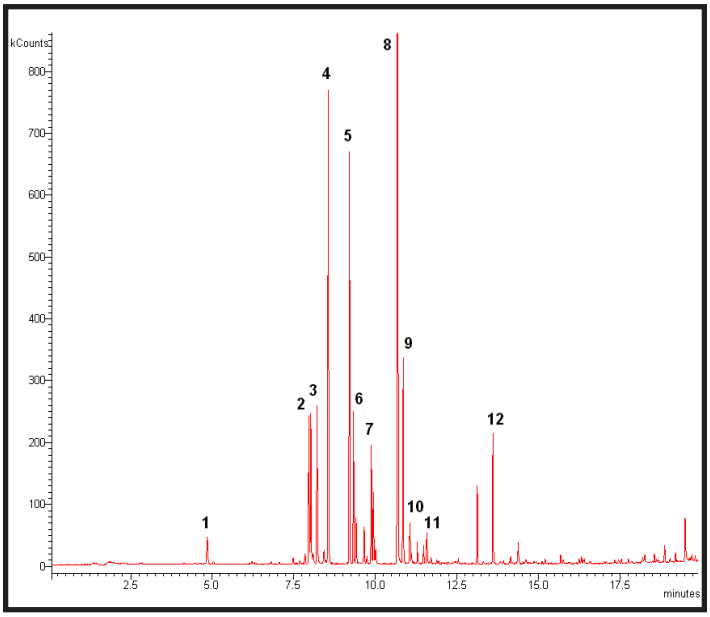

Figure 1. Compounds collected from air freshener #1.

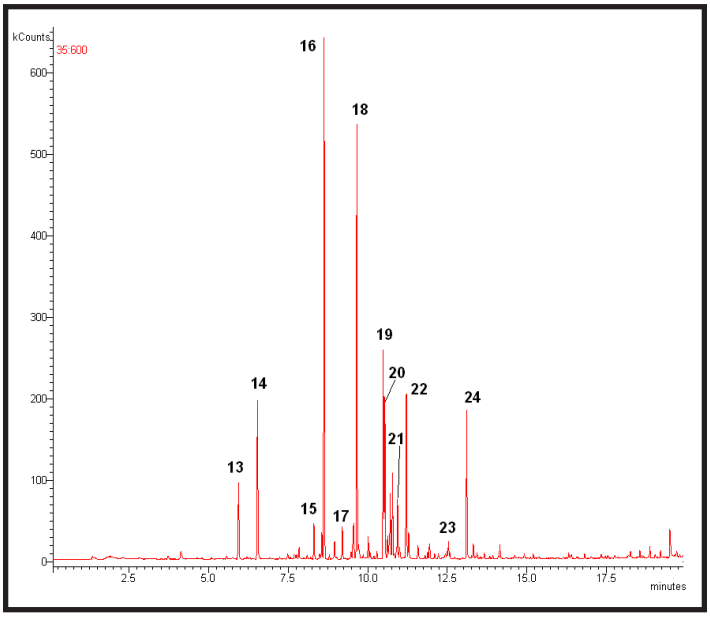

Figure 2. Compounds collected from air freshener #2.

Equipment

Pyroprobe 5200

Interface:	325°C for 4 minutes
Filament:	350°C for 30 seconds
Valve Oven:	325°C
Transfer line:	325°C
Trap desorption:	325°C for 4 minutes
Dry (recondition):	350°C for 60 seconds

GC/MS

Column:	30 m x 0.25 mm 5% phenyl methyl silicone
Carrier:	Helium
Split:	50:1
Oven program:	40°C for 2 minutes 10°C/min to 300 °C

Table 1.

1. n-Butyl acetate
2. Dipropylene glycol monomethyl ether
3. 2-Propanol, 1-(2-methoxypropoxy)-
4. Limonene
5. Dihydromyrcenol
6. Allyl hexanoate
7. 3-Cyclohexen-1-carboxaldehyde, 3,4-dimethyl-
8. Benzyl acetate
9. Allyl heptanoate
10. Gardenol
11. alpha-Citronellol
12. 4-tert-Butylcyclohexyl acetate
13. 2-Methylbutyl acetate
14. n-Amyl acetate
15. 1,4-Cineol
16. Eucalyptol
17. Dihydromyrcenol
18. Linalol
19. Citronellal
20. Camphor
21. Methol
22. Methyl Salicylate
23. Anethol
24. alpha-Methylcinnamaldehyde

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