

Concentration Analysis of Volatile Components in Shirts After Wearing - Using MonoTrap Simple Enrichment Tools

MonoTrap RGC18TD, a simple enrichment tool was used to screen the components that evaporate from shirts after wearing. Placing the MonoTrap with the samples provided considerable information about the compounds present.

Peak No. 11 trans 2-nonenal and peak No. 19 nonanoic acid (pelargonic acid) are components known to cause the smell of aging and body odor. Sunscreen components were also detected that the subject was likely to be using.

Pretreatment procedure

Shirt

Worn for three days by a woman in her 20s

Collection (passive)
3 MonoTrap RGC18TD

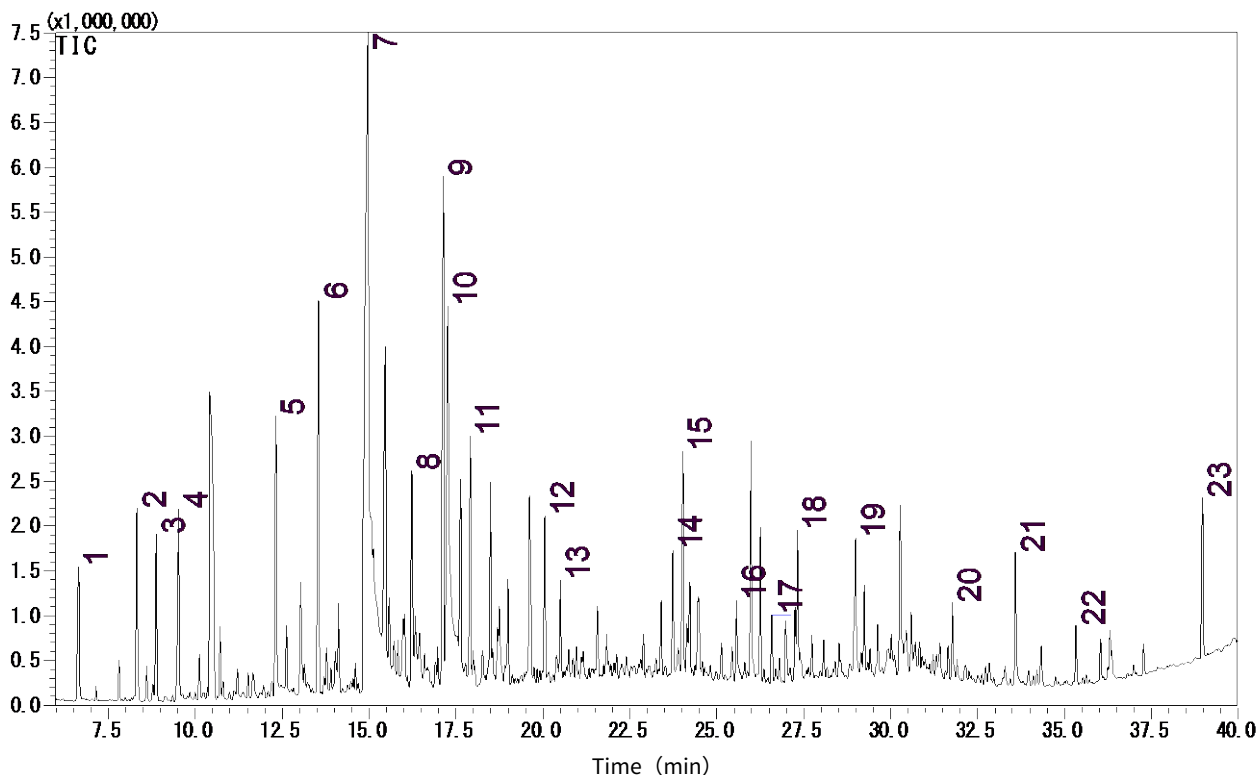
In Tedler bags
37 °C for 6 h

TD/GC/MS



Conditions

System	: GC/MS-Thermal Desorption
Column	: InertCap Pure-WAX 0.25 mm I.D. x 30 m, df = 0.25 µm
Col.Temp.	: 40 °C(5 min) - 10 °C /min - 250 °C
Carrier Gas	: He 1 mL/min (constant flow)
Desorb Temp.	: 200 °C
Time	: 5 min
Mode	: Splitless
Flow	: 3 mL/min
Cryo Trapping	: -150 °C
Injection Temp.	: 250 °C
Detection	: MS Scan (<i>m/z</i> : 30 - 600)



- | | |
|---|---|
| 1. Hexanal | 13. 1-Nonanol |
| 2. Propylene glycol monomethyl ether | 14. Hexanoic acid |
| 3. 2-Ethoxy-2,3-dihydro-4H-pyran | 15. <i>Trans-Geranylacetone</i> |
| 4. Heptanal | 16. Heptanoic acid |
| 5. Octanal | 17. <i>p</i> -Anisaldehyde |
| 6. 6-Methyl-5-heptene-2-one | 18. Octanoic Acid |
| 7. Nonanal | 19. Nonanoic acid (pelargonic acid, said to be responsible for the smell of aging) |
| 8. <i>trans</i> -2-Decenol | 20. Hexylcinnamaldehyde |
| 9. Ethylhexanol | 21. Dodecanoic acid |
| 10. Decanal | 22. Benzyl Benzoate |
| 11. <i>trans</i>-2-Nonenal (said to be responsible for the smell of aging) | 23. Parsol MCX (sunscreen) |
| 12. Menthol | |

* According to library search results

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