

Concentration Analysis of Volatile Constituents of Candy - Comparative Effects of MonoTrap RGC18 TD Collection

MonoTrap RGC18 TD and HandyTD TD265 were used to screen for volatile components in candy. When collecting volatile compounds, the differences in the effects of collection methods were compared depending on the condition of the samples.

MonoTrap RGC18 TD uses a trapping agent to collect volatile compounds, the HandyTD TD265 is used to introduce those compounds into a GC by thermal desorption. In this application, the collection of volatile components from whole candy, was compared with a method of crushing samples prior to collection.

The sensitivity of volatile compounds was greatly improved when the sample was crushed rather than sampled from the whole sample. The finer sample may have increased the surface area and increased the efficiency of volatilization.

Pretreatment procedure

Candy (4.5 g per piece of candy)

Place a pellet of apple candy in 20 mL vials

Collection (HS)
MonoTrap RGC18 TD × 1
(Cat.No. :1050-74201)

37°C 1 hour collection



Sample 1
(untreated)



Sample 2
(crushed)



(Cat.No. : 2709-80000)

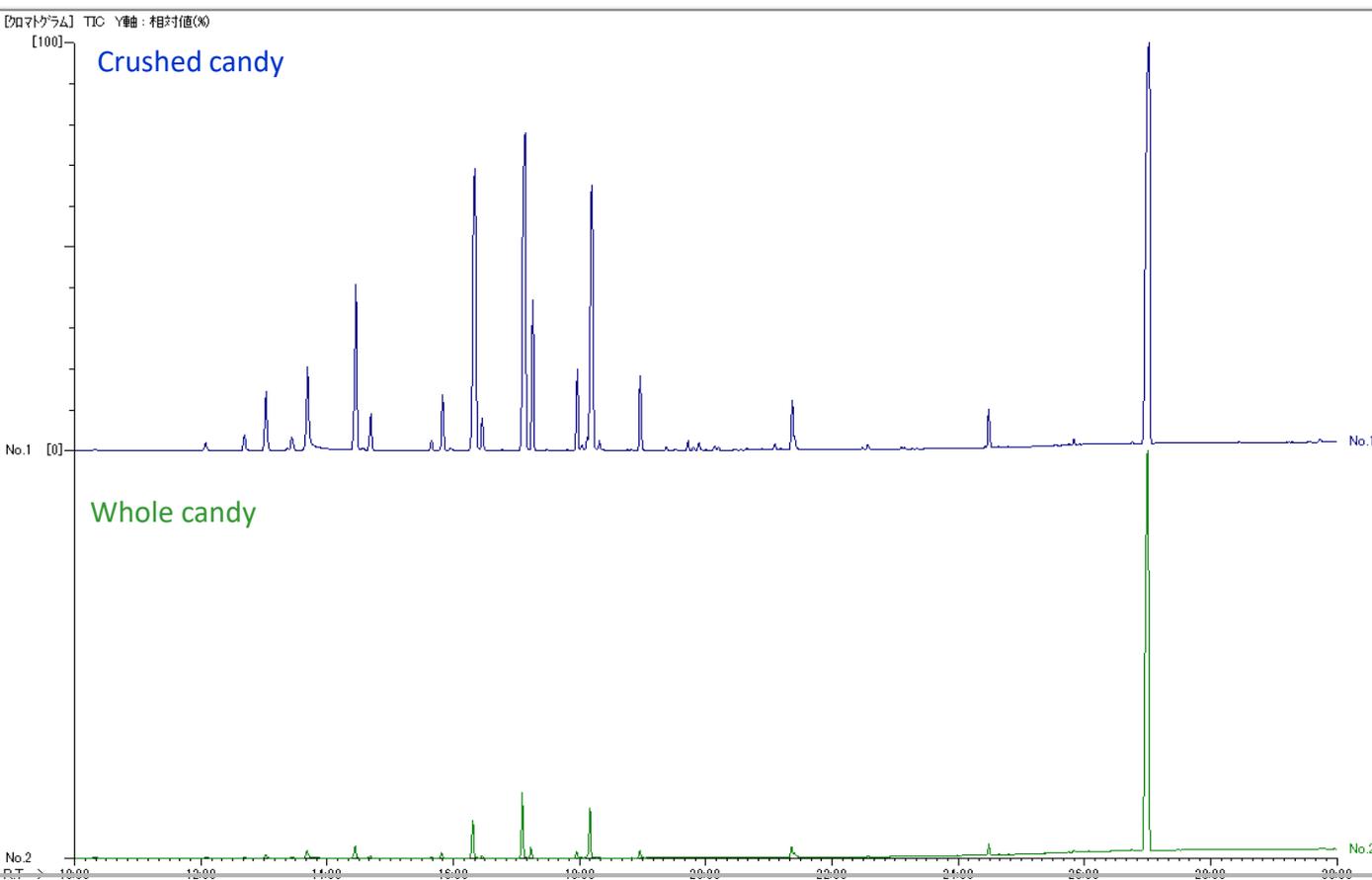
HandyTD/GC/MS

GC/MS Conditions

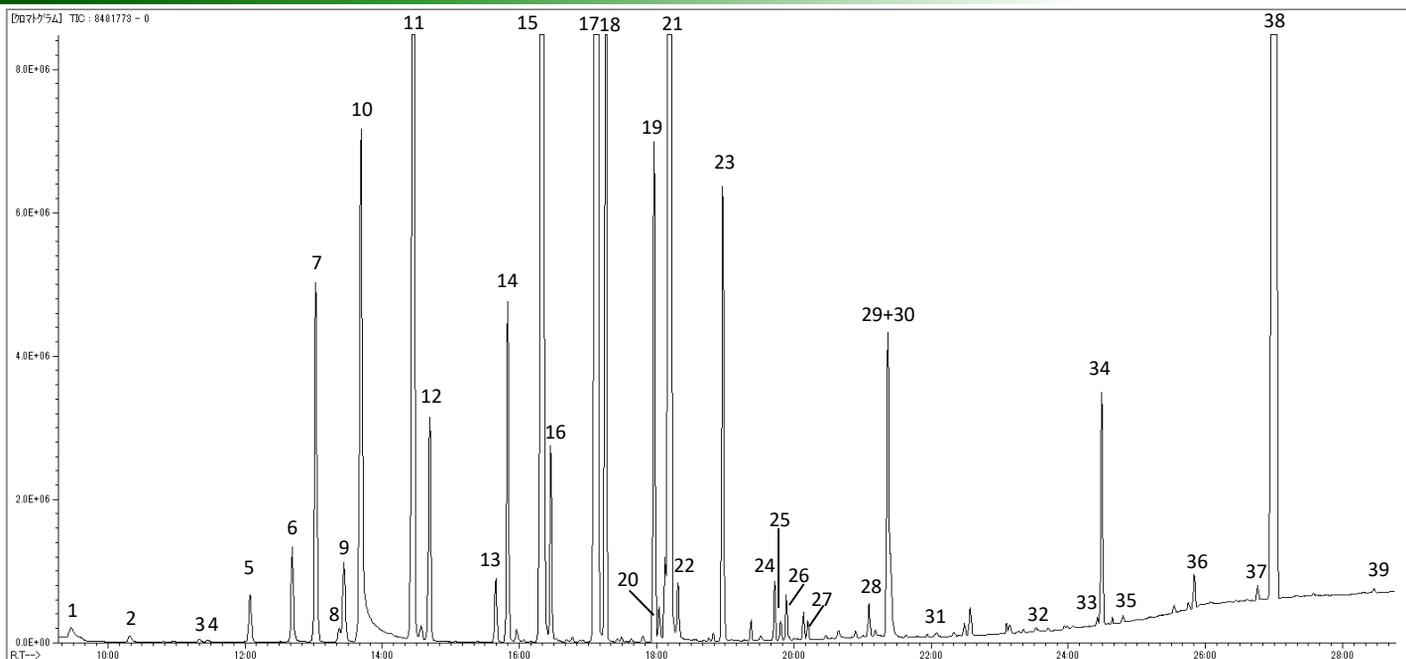
System	: Thermal Desorption-GC/MS (HandyTD TD265)
Column	: InertCap Pure-WAX 0.25 mm I.D. × 60 m, df = 0.5 μm
Col. Cat. No.	: 1010-68164
Col.Temp.	: 40 °C(5 min) - 10 °C/min - 250 °C
Carrier Gas	: He, 1 mL/min (constant flow)
GC Inlet	: 250 °C Split 10:1
Detection	: MS Scan (<i>m/z</i> 30-350)

HandyTD Conditions

Desorb Temp.	: Room temperature- 45 °C/s- 200 °C(5 min)
Pre Desorb Press.	: 140 kPa



Analytical results of candy (crushed)



* Standard samples are not used for qualitative analysis.
Results from a library search.

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|----------------------------------|-------------------------------------|----------------------------|
| 1. Methyl alcohol | 14. Isoamyl alcohol | 27. Linalool oxide |
| 2. Ethyl alcohol | 15. 2-Hexenal | 28. Benzaldehyde |
| 3. Propyl acetate | 16. Ethyl caproate | 29. Diethyl malonate |
| 4. Valeraldehyde | 17. Hexyl acetate | 30. Propylene Glycol |
| 5. Isobutyl methyl ketone | 18. Isoamyl 2-methyl butyrate | 31. Hexyl caproate |
| 6. Ethyl butyrate | 19. 2-Hexenyl acetate | 32. Citronellyl propionate |
| 7. Isopropyl 2-methyl butanoate | 20. Ethyl lactate | 33. Geranyl propionate |
| 8. Ethyl isovalerate | 21. Hexanol | 34. Caproic acid |
| 9. Butyl acetate | 22. Hexanal propylene glycol acetal | 35. Damascenone |
| 10. Hexanal | 23. 2-Hexen-1-ol | 36. Phenylethyl alcohol |
| 11. Isoamyl acetate | 24. Hexenal propylene glycol acetal | 37. 2-Hexenoic acid |
| 12. Valeraldehyde diethyl acetal | 25. Linalool oxide | 38. Triacetin |
| 13. Methyl caproate | 26. Hexenal propylene glycol acetal | 39. Decalactone |

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