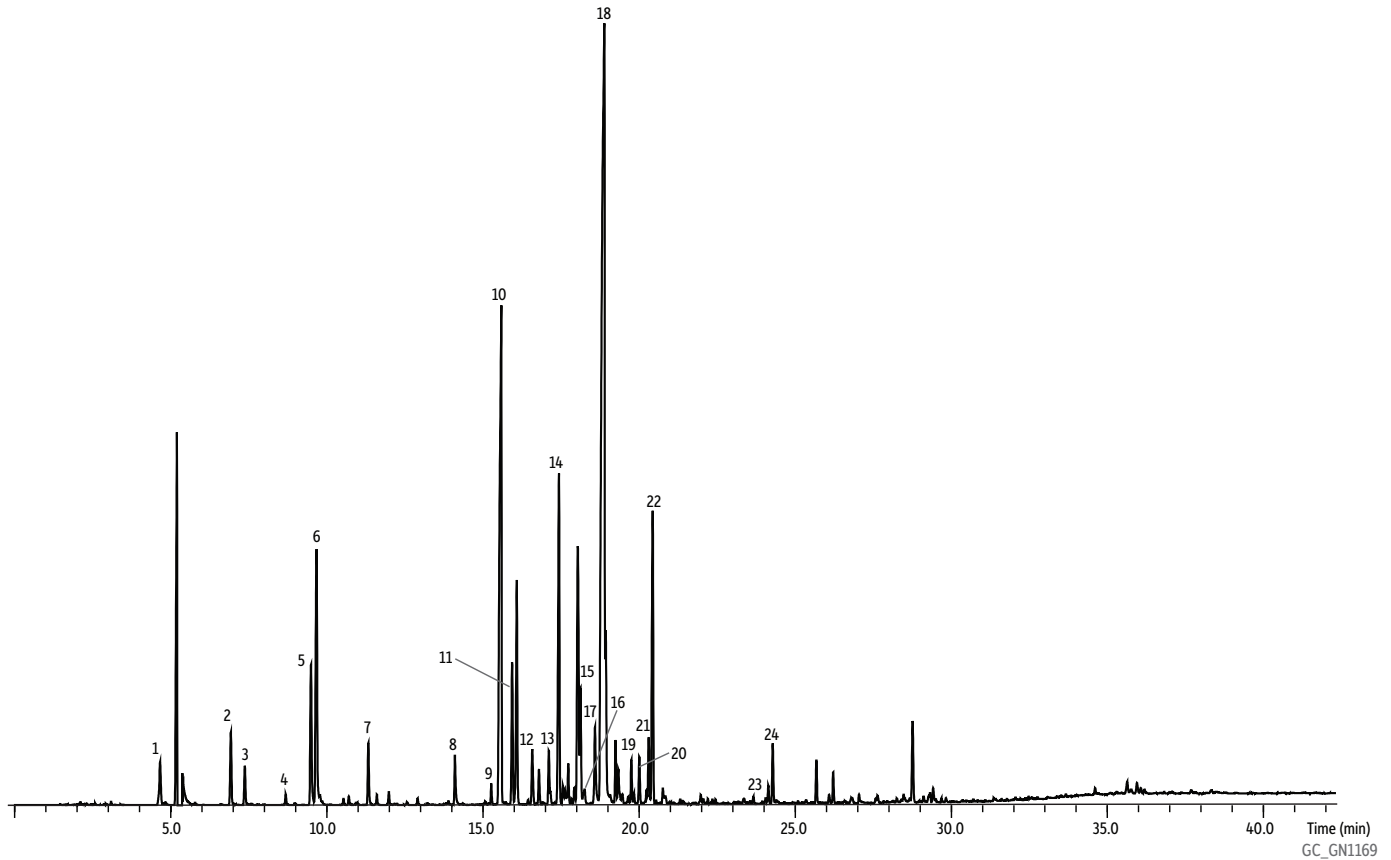


# Commercial Spearmint Oil on Stabilwax-MS

Peaks	Retention Time (min)	Peaks	Retention Time (min)
1. $\alpha$ -Pinene	4.66	13. Linalool	17.11
2. $\beta$ -Pinene	6.92	14. Menthyl acetate	17.44
3. Sabinene	7.37	15. 4-Terpineol	18.12
4. Myrcene	8.68	16. Dihydrocarvone	18.26
5. Limonene	9.49	17. Neoisomenthol	18.59
6. 1,8-Cineole	9.67	18. Menthol*	18.88
7. Cymene	11.33	19. Terpineol	19.76
8. 3-Octanol	14.10	20. Germacrene D	20.01
9. 1-Octen-3-ol	15.26	21. Piperitone	20.31
10. Menthone	15.59	22. Carvone	20.44
11. Menthofuran	15.94	23. Jasmine	23.66
12. $\beta$ -Bourbonene	16.58	24. Caryophyllene oxide	24.28

\* High signal suggests adulteration or misbranding.



**Column** Stabilwax-MS, 30 m, 0.25 mm ID, 0.25  $\mu$ m (cat.# 10673)  
**Sample** Commercial spearmint oil  
**Conc.:** Neat  
**Injection**  
**Inj. Vol.:** 1  $\mu$ L split (split ratio 150:1)  
**Liner:** Premium 3.5 mm ID single taper w/wool (cat.# 23322)  
**Inj. Temp.:** 250 °C  
**Oven**  
**Oven Temp.:** 45 °C (hold 5 min) to 250 °C at 7 °C/min (hold 10 min)  
**Carrier Gas** He, constant linear velocity  
**Linear Velocity:** 36 cm/sec  
**Detector** MS  
**Mode:** Scan  
**Scan Program:**

Group	Start Time (min)	Scan Range (amu)	Scan Rate (scans/sec)
1	0	40-550	3.3

**Transfer Line**  
**Temp.:** 260 °C  
**Analyzer Type:** Quadrupole  
**Source Temp.:** 250 °C  
**Electron Energy:** 70 eV  
**Ionization Mode:** EI  
**Instrument** Shimadzu 2010 GC & QP2010+ MS