

ALUMINUM CAN Analysis

Volatile Compounds from Can Coatings

Polymer coated aluminum and steel cans are used throughout the world for packaging foods and beverages. It is known that the different coatings and curing processes used can impact the food products in contact with these coatings. However, testing the quality of these coatings and their potential impact on product quality has been a slow, laborious process until now.

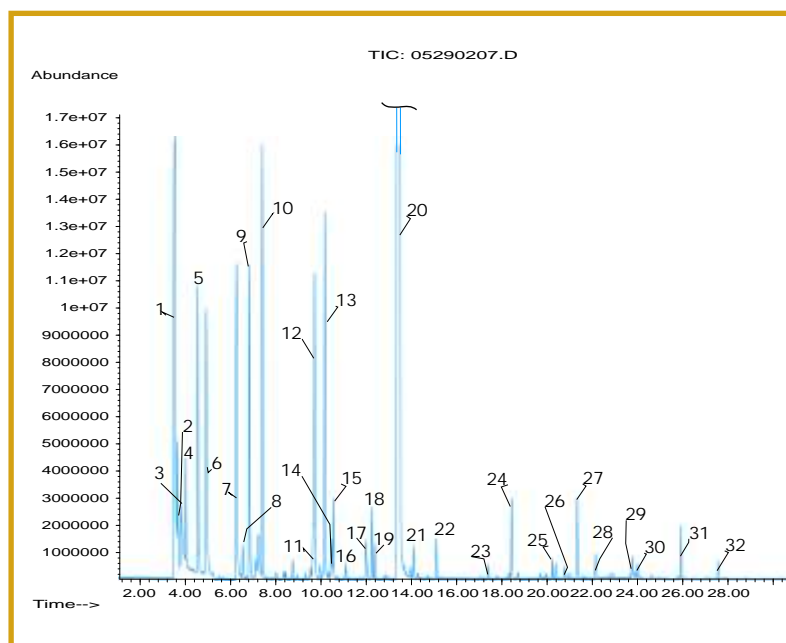
Using a gas-tight sampling fitting, 150cc's of gas can be sampled from an empty, sealed container into the Entech 7100A Preconcentrator to quantify low level impurities that have outgassed from the internal coating. The large volume preconcentration boosts the signal of a GC detector 150-fold over loop injection analysis. The entire process is automated so that a larger, statistically relevant number of samples can be analyzed. Eliminating the errors introduced by manual sample preparation produces reproducible data that allows even small differences in film quality to be detected.



Up to 21 containers, 3" in Dia. or less can be sequentially analyzed.



30-20160 Can Gas Sampler attaches to any size can for sampling the interior volume.



Inlet: 7100A/7032A
 Configurations: A, B (Pg. 57)
 Sample Size: 150cc
 Matrix Management: MP&T - M1-GB, M2-Tenax
 Column: HP1, 60m, 0.32mm ID, 1um film
 Carrier: He, 1.5 ccm constant flow
 Oven Temp: 35°C 5 min, 6°C/min to 150°C
 15°C/min to 220°C, 4 min hold
 GCMS: Agilent 6890/5973N
 MS Operation: 33-270 amu, 3.1Hz, EI, EM=0 Rel.
 Tune: BFB

Compounds:

- | | |
|---------------------|----------------------|
| 1. CO ₂ | 17. Isobutyl Alcohol |
| 2. Propane/ Propene | 18. IS 2 |
| 3. Formaldehyde | 19. 2-Ethylacrolein |
| 4. Isobutene | 20. 1-Butanol |
| 5. Acetaldehyde | 21. Butyl Formate |
| 6. Methanol | 22. Toluene |
| 7. Ethanol | 23. Hexanal |
| 8. Propanal | 24. IS 3 |
| 9. Acetone | 25. 3-Heptanone |
| 10. Recovery Spike | 26. Heptanal |
| 11. Cyclohexane | 27. Surrogate 1 |
| 12. Butanal | 28. 2-Ethylhexanal |
| 13. 2-Butanone | 29. Octanal |
| 14. IS 1 | 30. Column Artifact |
| 15. Heptane | 31. Nonanal |
| 16. Benzene | 32. Decanal |