



FAMES Fatty Acid Methyl Esters: Mass Spectral Database

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DVD

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DESCRIPTION

Fatty acids are important compounds in food analysis, since they are sample specific. They can be used as markers or their profile can be used as a fingerprint (e.g. bacteria fatty acids) or to reveal fraud (e.g. seed oil added to olive oil). In GC, fatty acids are analyzed after derivatization to methyl esters (FAMES). *FAMES* is a library of 240 spectra and structures of **fatty acid methyl esters**, including their Linear Retention Index and calculated Kovats Retention Index.

The database contains linear retention index data, registered using an alkane mixture on an apolar column and using also a FAMES and a FAEs (**fatty acid ethyl esters**) mixture on a polar column. The addition of the retention index data enables more reliable compound matching and identification of unknowns.

While other methods such as LC-MSMS can be used, when using such a highly selective method, technicians can only detect what they are looking for, while when performing broader TIC screening using GC/MS, no information is lost. Applications include building FAMES profiles of target bacteria (e.g. *pseudomonas aeruginosa*).

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Each record contains the mass spectrum, searchable structure, chemical information, and LRI retention data.

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Records indexed by name, molecular weight, and retention time

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Highly controlled: Measured on a single instrument in controlled conditions

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Quality samples sourced from leading suppliers and manufacturers

Available in six manufacturer formats for use with most common mass spectrometry applications:

- ACD/Labs MS Manager
- Agilent ChemStation
- NIST MS Search
- PerkinElmer TurboMass
- ThermoFisher Spectral ID
- Waters MassLynx

A version in the Shimadzu GCMSsolution format is available directly from Shimadzu.

Data was acquired on a GCMS QP2010 Plus (Shimadzu), Autosampler AOC-20i (Shimadzu), split/splitless injector inlet, Supelcowax 30 m x 0.25 mm x 0.25 μ m (Supelco), Helium in constant linear velocity mode (35cm/s) carrier gas, with an oven temperature of 50 oC to 280 oC (or 350 oC) at 3oC/min. Ion source temperature 220 oC, interface temperature 250 oC, scan range 50-550 u, EI 70 eV.

Compound coverage can be searched at www.compoundsearch.com.

ABOUT THE AUTHOR

Professor Dr. Luigi Mondello is a prominent figure in the flavors and fragrances research industry as the author of Mass Spectra of Pesticides with Retention Indices, Flavors and Fragrances of Natural and Synthetic Compounds, and FAMES Fatty Acid Methyl Esters: Mass Spectral Database, as well as the Editor of the *Journal of Separation Science* published by John Wiley & Sons and Editor in Chief of the *Journal of Essential Oil Research* published by Taylor & Francis. He received a degree in Chemistry from the University of Messina, Italy in 1991 and is now a Full Professor of Analytical Chemistry in the Department of Chemistry Science, Biological Science, Pharmaceutical Science and Environmental Science for the University. Prof. Mondello is currently the author of 292 scientific papers, 63 book chapters, and 25 reviews. His research interests include chromatography techniques and the

advancement of coupled techniques such as LC-GC-MS, GC-GC, GCxGC, LCxLC, LCxGC and their applications in the study of natural and synthetic complex matrices.

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