

Chemical Fingerprinting (ChemFing)



Correct identification and quantification of sources behind soil pollution can in many cases be important for risk evaluation and liability purposes. Source apportionment of hydrocarbon pollutions in soil has until now been based on manual examinations of chromatograms and experience. A brand new analytical tool based on multivariate statistical data analysis allows us to not only identify the sources behind a given pollutions but also to quantify the relative amount of the different sources in a reproducible and objective way.



Source apportionment

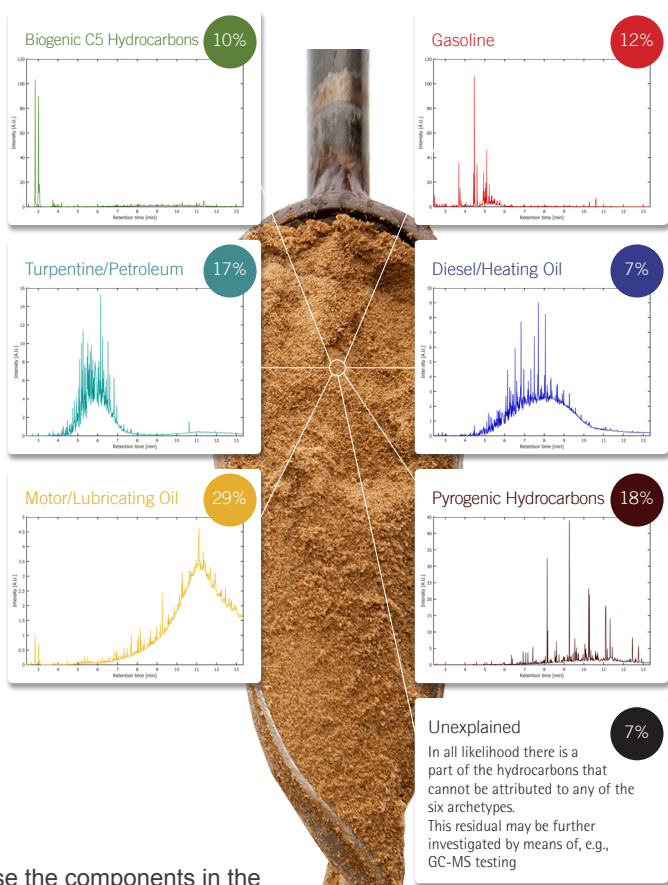
Eurofins has together with University of Copenhagen developed a software tool that enables objective data analysis of chromatograms. The method is based on multivariate statistical analysis and uses the exact same laboratory analytical methods as the normally used eg. GC FID and GC MS.

By this method a FID complex chromatogram can be split by objective methods into contributions from different achetypes.

The following achetypes are included in the model:

- Gasoline
- Turpentine/petroleum
- Diesel/heating oil.
- Lubrications oil/asphalt
- Pyrogenic sources and
- C5-biogenic compounds.

The method also returns the residuals - in this case the components in the pollution that does not fit any of the archetypes. With the help of this it is possible to focus additional and subsequent analysis on the components in the samples besides the normal hydrocarbon types.



ChemFing offers:

- Identification of hydrocarbon sources based on objective and reproducible methods
- Identification and quantification of achetypes in complex mixtures
- Identification and fingerprints of components outside the archetype range (residuals)
- 100% alignment to present standard analytical methods for analysis of hydrocarbon pollutions



About us
Eurofins Scientific is a global market leader in food, environment and pharmaceutical products testing as well as in the fields of agro-science, genomics, and pharmacology. With over 47,000 staff in 400 laboratories across 47 countries, Eurofins offers a portfolio of over 200,000 analytical methods.

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