

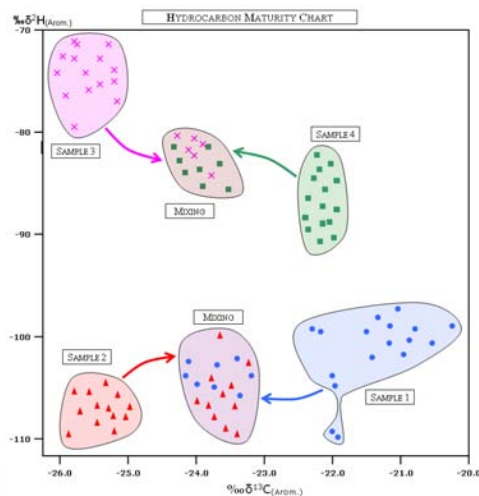
For assessing the commercial value of a reservoir, the explorationist must not only be aware of the location and volume of hydrocarbons in the rock but also of the grade of maturity that it has attained. In order to offer a holistic service approach, Corex offers organic geochemical data through a range of experienced subcontractors to help increase the accuracy of your forecasts.

Total organic carbon (TOC) determination is generally used as a first step to identify sediments rich in organic carbon. Generally TOC values greater than 0.5% for shales and 0.3% for carbonates are considered suitable for further analysis by Rock-Evaluation Pyrolysis.

Rock Evaluation Pyrolysis is conducted to determine the source rock potential in terms of thermal maturity, and hydrocarbon migration patterns.

Vitrinite reflectance describes the maturity grade of the organic matter (kerogen type). Along with a maceral analysis, the type of organic matter may be traced and help differentiate between in situ and migrated hydrocarbons.

A further option is the investigation by stable isotope analysis. For example using heavy hydrogen and carbon isotopes may trace biodegradation paths in hydrocarbons or differentiate between different sources of origin.



Fluid inclusions are small bubbles containing gas or pore fluids (<10µm) which have been trapped in minerals like quartz, feldspars and carbonate. Fluid inclusion analysis has many uses including comparison between original and present day hydrocarbon composition. The comparison is used to trace the paths the hydrocarbon has passed since its generation. Data may also be used for correlation purposes with other hydrocarbon sources.

The above graph shows how isotope data can be used to gain information on hydrocarbon source and provenance. Analysing heavy hydrogen and carbon isotopes ratios can act as a "finger-print" identifying each different hydrocarbon source quite accurately. Inferences about any mixing of differently sourced hydrocarbons can also be made as shown.

