

11. C_{29} diasteranes/ C_{29} $\alpha\alpha\alpha$ steranes + C_{29} $\alpha\beta\beta$ steranes

Source indicator. This parameter is used to characterise the oxidicity of depositional environments. High values (up to 10) indicate oxic conditions, low values (down to 0.1) indicate reducing environments.

12. C_{30} (hopanes + moretanes)/ C_{29} (steranes + diasteranes)

Source indicator. Triterpanes are believed to be of prokariotic (bacterial) origin, whereas steranes are derived from eukariotic organisms. This ratio reflects the preservation of primary organic matter derived from eukariots, relative to growth and preservation of bacteria in the sediment after deposition.

13. C_{15} drimane/ C_{16} homodrimane

Drimanes and homodrimanes are ubiquitous compounds most likely derived from microbial activity in sediments. The C_{15} drimane/ C_{16} homodrimane ratio is a useful parameter for correlation purposes in the low molecular weight region, especially for condensates which lack most conventional biomarkers. Drimanes are also useful to assess the degree of biodegradation as the removal of C_{15} to C_{16} bicyclics characterises an extensive level of biodegradation.

14. Rearranged/normal drimanes

Like parameter 13, this ratio can be used for correlation purposes in samples without conventional biomarkers, and to assess levels of biodegradation.

15. C_{15} alkylcyclohexane/ C_{16} homodrimane

Like parameters 13 and 14, this ratio is useful for correlation purposes.

2.3.5.2 GC/MS Analysis of Aromatics

The aromatic fraction or the oil to be analysed is first subjected to thin layer chromatography (TLC) or medium pressure liquid chromatography (MPLC), depending upon the analytical requirements.

1. Di- and tri- nuclear aromatic compounds are isolated by TLC. To effect this separation, the sample is applied to an alumina coated glass plate (0.6mm thickness). The plate is developed with hexane and the required band located using short wavelength UV light. The fraction is recovered by extraction and fractional distillation.

This aromatic fraction may be analysed by GC-FID, but GC/MS is recommended because of possible co-elution problems during GC.

Samples are analysed by GC/MS in the acquire mode scanning from 50 to 450 atomic mass units (amu).