

The composition of the extracts can also provide information about their levels of maturity and/or source type (LeTran et. al., 1974; Philippi, 1974). Generally, marine extracts have relatively low concentrations of saturated and NSO compounds at low levels of maturity, but these concentrations increase with increasing maturation. Terrestrially derived organic matter often has a low level of saturates and large amount of aromatic and NSO compounds, irrespective of the level of maturity.

Specific ratios are measured from solvent extraction and liquid chromatography data which give an indication of source type and maturity. EOM (mg)/TOC(g) can be used as a maturation indicator when plotted against depth for a given sedimentary sequence. Generally an EOM/TOC value of >100 indicates high maturity. If such a sample has a SAT (mg)/TOC (g) ratio <20, it is likely that the organic matter is gas prone. A value for SAT (mg)/TOC (g) >40 suggests an oil prone source type.

### 2.3.3 Capillary Gas Chromatography (GC)

C<sub>12</sub>+ gas chromatography is most commonly carried out on saturate fractions, but in certain instances it is used to examine whole extracts/oils, aromatic or branched/cyclic fractions. It is also used as a tool to identify contamination. The analyses are performed under the following conditions:

Instruments:	Hewlett Packard 5890 Gas Chromatography
Injector:	SGE OCI-3 on column
Column:	25m x 0.2mm ID BP-1
Injector Temp:	280°C
Detector Temp:	320°C
Column Temp:	45°C to 280°C at 4°/min
Carrier Gas:	hydrogen

Data are collected using an IBM compatible PC and DAPA scientific software.

#### 2.3.3.1 C<sub>12</sub>+ Saturate Gas Chromatography

Saturate GC results provide information pertaining to source type, maturity and depositional environment.

The n-alkane distribution from n-C<sub>12</sub> to n-C<sub>31</sub> is determined from the area under the peaks representing each of these n-alkanes. The profile can yield information about maturity and source type and is quantified in the C<sub>21</sub> + C<sub>22</sub>/C<sub>28</sub> + C<sub>29</sub> ratio and Carbon Preference Indices (CPI 1 and 2).