



## The Organic Geochemical Characteristics of Gümüşhacıköy Asphaltite Occurrences, (Amasya-Turkey)

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The asphaltites are exposed in the three different location (Gökçukur Plato, Kağnıcı and Saraycık Villages) in NW Gümüşhacıköy (Amasya). In this study, organic geochemical characteristics of the asphaltite occurrences were investigated by using GC, GC-MS and carbon isotope analysis.

The Saraycık asphaltite occurrences are found in the Eosen unit that consists of mainly sandstone, siltstone, claystone and limestone. The asphaltites are located in the joint systems of this unit and porosity of sandstone and siltstone. Kağnıcı asphaltite occurrences are found in agglomerates and tuffs of the Miocene age. The asphaltite occurrence in agglomerates and tuffs fill primary porosity and has an irregular and patchy distribution. Gökçukur asphaltites are found in the ophiolitic melange of Cretaceous age. The asphaltite occurrences are located in joint systems of this formation.

The  $[U+F064]$   $^{13}C$  values of saturated and aromatic fractions from the asphaltites are similar but the aromatic fraction of Gökçukur asphaltite sample is enrichment in  $[U+F064]$   $^{13}C$  compared to the others. n-alkane, isoprenoid and aromatic fractions were almost completely depleted in the gas chromatograms of Saraycık and Kağnıcı asphaltite samples. n-alkanes and isoprenoids are recorded in low amount in gas chromatograms of Gökçukur asphaltites.

In all the asphaltite samples C27, C28, C29 sterane distribution are similar. Regarding the sterane abundances, there is a general ranking of  $C29 > C28 > C27$ . Iso-, normal- and dia-sterane abundances of Kağnıcı and Gökçukur asphaltites are ranked as normal->iso->diasterane. Iso-sterane contents of the Saraycık asphaltites are significantly greater and normal sterane abundance is lower than the others. Saraycık asphaltite sample has higher C22/C21, C26/C25 tricyclic terpane, C23 tricyclic terpane/(C23 tricyclic terpane+C30 hopane) and C29/C30 hopane ratios than the others. The high 20S/(20S+20R),  $[U+F062]$   $[U+F062]$   $[U+F02F]$   $[U+F028]$   $[U+F062]$   $[U+F062]$   $[U+F02B]$   $[U+F061]$   $[U+F061]$   $[U+F029]$  sterane, 22S/(22S+22R) homohopane and the low moretane/hopane ratios show that all the asphaltites are mature. Based on the available data, the asphaltites were suggested to be derived from the same source rock.