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COMPARISON OF HYDROCARBONS FORMED AT PYROLYSIS OF TURKISH TYPE I KEROGEN (GÖYNÜK) AND TYPE II KEROGEN (BEYPAZARI)

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Kerogen samples isolated from the Göynük and Beypazarı oil shales were pyrolyzed to study the effect of kerogen type on the rate of product evolution and composition of the pyrolysis products. Kerogens were isolated by successive treatment with HCl, HNO_3 and HF. A series of temperature-programmed pyrolysis operation was performed on kerogens of Göynük Type I (GKT I) and Beypazarı Type II (BKT II) oil shales. The operation of the experimental apparatus was investigated by establishing carbon balance. The degree of recovery of total organic carbon of the samples as organic compounds and solid residue was determined. The results show that the type of kerogen affected the conversion of organic matter into volatile hydrocarbons and transformation of carbon into the residue. BKT II yielded more aliphatic hydrocarbons, the ratios of n-paraffins to 1-olefins being higher and coking loss less, on a carbon unit basis, Yields of volatile hydrocarbons differ by kerogen type. It has been observed that mainly linear aliphatic hydrocarbons form at pyrolysis of GKT I, particularly in the range of C_1 to C_{15}, in contrast those to produced from BKT II. The share of branched hydrocarbons, dienes, aromatics, asphaltenes and preasphaltenes was higher in the pyrolysis products of BKT II.

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