

ORGANIC GEOCHEMISTRY CHARACTERISTIC OF KETONES FRACTION OF COAL TARAKAN, NORTH KALIMANTAN AND COAL SAWAHLUNTO, WEST SUMATERA

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ABSTRACT

Coal from Tarakan, North Kalimantan and coal from Sawahlunto, West Sumatera were analyzed to determine the character of the organic geochemistry. Coals were extracted Soxhlet with a mixture of diclorometane:methanol (93:7) as a solvent. The extracts were fractionated into aliphatic, aromatic, kotones, and polar fraction using column chromatography. Ketone fractions were analyzed by Gas Chromatography-Mass Spectrometry (GC-MS). Result of GC-MS analyzed in ketones fraction of Tarakan coal shown presence of cyclohexyl, methyl cyclohexyl ketones, and tricyclic terpane ketones. These compounds were expected formed by bacteria. Amyrenones were identified in the sample as a result of oxidation β -amyrin during diagenesis of Angyospermae higher plants. Analyzed of ketones fraction Sawahlunto coal shown presence of iso and anteiso-alkan-2-one, and isoprenoid ketones. These compound were expected formed by oxidation of α -chlorophil in the bacteria. Hopanoids ketone and cyclohexyl ketones shown coal formed from bacteria. Rank of Sawah Lonto coal lower than Tarakan coal because there are hopanoids ketone in the Sawahlunto coal. Hopanoids ketone can inhibit the process of coal maturation. The process of coal maturation can also inhibited if the compounds in coal bound with oxygen

Key words: Tarakan coal, Sawahlunto coal, biomarkers, ketones fraction, Gas Chromatography-Mass Spectrometry (GC-MS).