

## **LIQUEFACTION OF ESTONIAN KUKERSITE OIL SHALE KEROGEN WITH SELECTED SUPERHEATED SOLVENTS IN STATIC CONDITIONS**

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*Estonian kukersite oil shale kerogen was liquefied in an autoclave in unified liquefaction conditions in the presence of the following superheated solvents: benzene, diethyl ether, ethanol, n-hexane, dimethyl ketone and water. Different yields of liquid, solid and gaseous products were obtained. Particularly high yields of the liquid product were recorded when some solvents were chemically incorporated into the composition of the kerogen decomposition products. Liquid products soluble in benzene were characterized, irrespective of the solvent used for kerogen liquefaction, by significant content of bituminous fractions, typical constituents of thermobitumen but not typical of kukersite semicoking oil. Concentration of compounds separable by chromatographic methods, in particular, that of n-alkanes, alkenes, polycyclic aromatic hydrocarbons and phenols present in abundance in the composition of semicoking oil, is low. Contra versa to semicoking oil, long hydrocarbon chains C<sub>17</sub> to C<sub>24</sub> prevail over short C<sub>5</sub> to C<sub>12</sub> ones. Extent of kerogen and thermobitumen decomposition strongly depends on the type of solvent used for liquefaction. Both process efficiency and selectivity can be noticeably influenced by solvent selection, and not only thermosolvolytically but also chemically modified products can be produced.*

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