

## Composition of natural bitumens from the Ural-Volga region

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### Abstract

Natural bitumen (viscous, viscoplastic, and solid) cannot be extracted by methods commonly used in oil production, and it is usually a disregarded reserve of hydrocarbon resources. A sharp difference between the properties of Permian bitumens from the Ural-Volga Region and Carboniferous and Devonian oils in the fields of Tatarstan was demonstrated. This difference is caused by the predominance of asphaltenes and alcohol-benzene tars enriched in hydroxyl and ester oxygen in them; that is, natural bitumen in rocks, especially above the local basis of erosion, is a product of the deep biochemical oxidation and weathering of oils. Other mechanisms of the transformation of oils into natural bitumen in the deep layers of Devonian and Carboniferous sandstones were also reflected in the composition and properties natural bitumens. © 2014 Allerton Press, Inc.

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