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## Study on chemical properties of some bituminous materials

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Bitumen is a non-crystalline, black or dark brown material. It is found in nature in several forms, from the hard, easily crumbled bitumen in rock asphalt to the softer, more viscous material found in asphalt lakes and tar sands. The purpose of this research was to assess the chemical properties of two kinds of bitumen designed: Utah oil sand bitumen (UOSB) and Natural Lake Pitch (NLP). In this work, bituminous materials were characterized by elemental analysis, FTIR, TLC-FID, and <sup>1</sup>H-NMR techniques. Chemical analyses demonstrated that NLP differs significantly from representative UOSB, chiefly in hydrocarbon, heteroatomic, vanadium, and clay-mineral contents. In terms of SARA components (saturates, aromatics, resins, and asphaltenes), the main distinguishing feature was that UOSB comprises more saturates than NLP. These findings can improve the refining industries operation as a result of the better knowledge on the bitumen composition, as well as in the prediction of better operating conditions to obtain refined products with desired specifications and in quantities desirable to meet the market demands.

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