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## The integrated effect on properties and composition of high-paraffin oil sludge

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### Abstract

The study is devoted to the integrated effect of acoustic treatment and addition of an inhibitor on viscosity-temperature properties and n-alkane composition in high-paraffin oil sludge. Ultrasonic treatment for 1 minute and addition of the inhibitor at the concentration of 0.05 % wt. decrease viscosity by 10 times and pour point by 8 °C.

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### 1. Introduction

Due to depletion of light hydrocarbon reserves, oil companies have to develop deposits of high-paraffin oils with a positive pour point. A decrease in temperature of such oils is accompanied by formation of a dispersed phase with high-molecular n-alkanes of C<sub>18</sub>H<sub>38</sub>-C<sub>65</sub>H<sub>132</sub> composition. A spontaneous increase in viscosity of high-paraffin oil, up to loss of fluidity, is observed in the sol-gel temperature transition region. The resulting gel is of a solid structure formed by a three-dimensional grid of interconnected paraffin crystals and an occluded dispersion medium<sup>1</sup>.

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