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Green Surfactants (ILs) as advanced new screening aspects for EOR progress

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Investigating the suitability and efficiency of ionic liquids (ILs), as EOR chemicals for extra crude oil recovery, subsequent to primary production is, by at the present time, a talented and attractive economic process. This carried out process, based on selected chemicals, is conditioned with various properties. The use of non-toxic surfactants, beside other conditions such as reservoir environment is of main concern in that purpose. The led research is conducted with principal of screening method, where several ionic liquids were tested. The examination was with the considered chemicals in contact with Saudi Medium crude oil. Ammoeng 102 ILs was found to be the ionic liquid of choice based on its solubility, stability at wide range of temperature and its effectiveness in lowering interfacial tension with crude oil. Effect of Ammoeng 102 concentration, solution salinity and brine salts contents; pressure and temperature on ionic solution- crude oil IFT were investigated. During the

experiments, brine selected solutions were used as dilution phase for different concentrations of Ammoeng 102. Results at reservoir condition (2000 psig and 60°C) indicated that IFT values of Ammoeng 102 solutions decrease exponentially with concentration: Lower for higher salinity ionic solution and slightly polynomial increase with increasing CaCl₂ ratio in salts composition. Temperature and pressure show minor effect with linear IFT decrease with increasing temperature at constant pressure and linear increase with increasing pressure at constant temperature. In addition, effect of Ammoeng 102 solutions on crude asphaltene content were also investigated at different salinities, different ionic liquid concentrations and reservoir temperatures. Results indicate that Ammoeng 102 is capable of cracking the asphaltene and reducing its content in crude oil even when present in low concentrations

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