Adsorption of Surfactants IOS 1518, C25A, and T15 on Dolomite Powder in DI Water

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Surfactant-stabilized CO₂-water emulsions may be used to flush oil out of a reservoir. A surfactant with low adsorptivity on porous rock is necessary to reduce surfactant loss. The adsorptions of surfactants IOS 1518, C25A, and T15 in mg (surfactant)/m² (surface area) are tested in this study by preparing by weight a mixture of surfactant solution and dolomite powder, filtrating the mixture, and titrating the liquid by two-phase titration to determine residual surfactant concentration. Each surfactant will have a maximum/plateau adsorption, which occurs when further increase of surfactant concentration in the mixture does not result in increased adsorption. The purpose of this study is to identify surfactants with low plateau values. Further work will test the adsorptivities in conditions with higher temperatures, pressures, acidity or salinity in order to predict how the surfactant will perform in reservoir conditions.
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