

Asphaltene precipitation from crude oil

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Basic Asphaltene Models

There exists several theories and models regarding the nature of asphaltenes which are not completely similar and thus give rise to different ways of understanding the asphaltene phenomenon and its precipitation mechanisms.

Thermodynamic Model Vs Colloidal Model

The colloidal model

- based on the assumption that asphaltenes are solid particles colloidally suspended in crude oil and stabilized by the resin molecules

The true solution model

- based on the assumption that asphaltene precipitation process is thermodynamically reversible
- assumed that the asphaltene particles can be dispersed and stabilized in the oil
- asphaltene precipitation is treated as liquid-liquid or solid-liquid equilibria

Colloidal models