



Computer model to predict precipitation of heavy organics in petroleum

Technology Reference

CO08

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Key Word(s)

- heavy organics
- petroleum
- crude
- asphaltenes
- asphalts
- bitumens
- resins
- diamondoids
- paraffin wax
- model
- computer

Stage of Development

- The computer model is ready for use.
- Training users is possible, but must be done by arrangement with the Thermodynamics Research Laboratory at UIC.

Description

Production and processing of petroleum can be significantly affected by flocculation, deposition, and plugging of asphaltenes, asphalts, bitumens, resins, diamondoids, and paraffin/wax inside transfer conduits, and refinery components. The economic implications of such heavy organics depositions are tremendous. This computer model helps to predict "when" and "how much" heavy organics will precipitate under particular conditions. Furthermore, the model will help manage, minimize, or prevent such deposition.

Field of Application

Management of heavy organics deposition in crude oils.

Advantages

This computer model is the most comprehensive and detailed such model in existence. It is based on the macromolecular theory of polydisperse polymers and colloidal solutions, kinetics of aggregation and FRACTAL growth, electrokinetic transport phenomena, and phase behavior of multicomponent mixtures.

References

1. G. A. Mansoori, "Modeling and Prevention of Asphaltene and other Heavy Organics Deposition in Oil Wells," Proceedings of the 1994 SPE Formation Damage Symposium, Paper No. 27070, Society of Petroleum Engineers, Richardson, TX.
2. [Heavy Organic Deposition from Petroleum](#)

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