

Course Content

Title: Sulfuric Alkylation

Potential PDH: 16

Code: BTT086

Description:

With increased restrictions on gasoline quality and increased availability of LPG liquids, the value of alkylation and alkylate has never been higher. Alkylation economics have been such that even standalone alkylation units have been constructed. The strong outlook for alkylation has resulted in increased demands on alkylation units both in terms of rate and reliability. Sulfuric alkylation units present challenges in acid handling and management, corrosion control as well as controlling alkylation reactions. Understanding the tradeoffs between operating parameters and alkylate rate allows better optimization of the unit. This course also provides guides around unit monitoring, acid management, managing unit process hazards and unit optimization.

This seminar covers topics from alkylation chemistry and operating variables through reaction equipment and corrosion management. The program will include best practices around unit monitoring, process hazards management and unit optimization. The seminar is geared for both process engineers and plant operations with topics of interest for both. The session will also include a Q&A session to allow shared discussion on any topic of interest.

Outline:

Sulfuric Alky Overview 1

- Stratco Design
- Kellogg design
- Other technologies

Alkylation Chemistry 1

- C3, C4 and C5 Type

Main Operating Variables 2

- Olefin Flow
- iC4 Flow
- Acid strength
- Reactor Temp
- Acid/HC ratio

Main Equipment 2

- Feed Prep
- Stratco Reaction System
- Kellogg Reaction System
- Compressors
- Depropanizer/treating.
- Reactor effluent
- Fractionation
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Acid Management 1

Unit Monitoring 1

Unit Hazards 2

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- Acid Runaway
- Acid handling safety
- Process Hazard Review

Alkylation Economics 1

Unit Optimization 2

- Evaluating Optimization opportunities

Q&A Session 1