Sulfuric Alkylation

Potential PDH: 16

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
- Acid Runaway
- Acid handling safety
- Process Hazard Review

Alkylation Economics 1

Unit Optimization 2
- Evaluating Optimization opportunities

Q&A Session 1

Who Should Attend:

Subject Matter Expert (SME):

Herb Telidetzki is part of the Fluid Catalytic Cracking and Sulfuric Alkylation engineering specialists with Becht Engineering. Prior to joining Becht, Herb was the FCC and Alkylation SME for Tesoro Refining and Marketing. In this role Herb led the Sulfuric Alkylation technical team for 6 Sulfuric Alkylation units within Tesoro. This included development of unit safety standards, review of operating procedures, conducting detailed unit reviews for safety and unit opportunities. With improved alkylation margin developed several projects to increase unit capacity including treating upgrades, compressor upgrades general improvements. Herb was also involved in general troubleshooting on various issues including acid runaways, acid foaming, treating and corrosion issues. Herb has continued with Alkylation unit support within Becht including developing of the Becht Sulfuric Alkylation best practices, assist with troubleshooting alkylation issues, assisting with unit turnaround and developing opportunities.