

Fundamentals of Refinery Alkylation Technology

Syllabus - Day One

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|-----------|--|----------------------------|
| 1. | Introduction to Processing Industry | 8:00 AM – 9:30 AM |
| | A. Overview of the Chemical Processing Industry | |
| | B. Safety for the Chemical Processing Industry | |
| | Break | 9:30 AM – 9:50 AM |
| 2. | Refinery Overview | 9:50 AM – 11:45 AM |
| | A. Refinery Overview | |
| | B. The role of Alkylation in a modern Refinery | |
| | Lunch | 11:45 AM – 12:30 PM |
| 3. | Introduction to Alkylation Chemistry | 12:30 PM – 14:00 PM |
| 4. | Assessment Exercise | |

Day Two

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| 1. | Alkylation Process Theory | 8:00 AM – 9:30 AM |
| 2. | Technology Review | |
| | A. Horizontal Contactor | |
| | Break | 9:30 AM – 9:50 AM |
| 3. | Technology Review | 9:50 AM – 11:45 AM |
| | B. Stirred Contactor | |
| | Lunch | 11:45 AM – 12:30 PM |
| 4. | Alkylation Operations | 12:30 PM – 14:00 PM |
| | A. Refrigeration | |
| | B. Treating Sections | |
| 5. | Assessment Exercise | |

Day Three

- 1. Acid Catalyst Options** **08:00 AM – 09:30 AM**
 - A. Sulphric**
 - B. Hydrofluoric**

- 2. Alkylation Key Design Parameters**
 - A. Design of Process**
 - B. Revamp Guidelines**

- Break** **09:30 AM – 09:50 AM**

- 3. Unit Optimization** **09:50 AM – 11:30 AM**
 - A. Distillation Fundamentals**

- Lunch** **11:30 AM – 12:30 PM**
 - B. Distillation Fundamentals** **13:00 PM – 14:00 PM**

- 4. Assessment Exercise**

Day Four

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| 1. | Unit Economics | 08:00 AM – 09:30 AM |
| | A. Operational Control Parameters | |
| | B. Acid Optimization | |
| | Break | 09:30 AM – 09:50 AM |
| 2. | Commissioning | 09:50 AM – 11:30 AM |
| | A. Safe Start Up | |
| | B. Safe Shut Down | |
| | C. Trouble Shooting | |
| | Lunch | 11:30 AM – 12:30 PM |
| 3. | Auxiliary Equipment | 12:30 PM – 14:00 PM |
| 4. | Assessment Exercise | |
| 5. | Conclusions | |