DUBAI-UAE **20-24 Apr 2026**

Catalyst Material Handling: Loading, Unloading, Oxidation, Reduction & Techniques

Why Choose this Training Course?

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using one of our states of-the-art simulators. This course is designed to provide participants with a detailed and up-to-date overview oncatalyst material handling, loading, unloading, oxidation, reduction and technique. Itcovers the preparation of catalyst change plan; executing the catalyst project efficientlyand safely; the catalyst changes operation main requirement; the work in inert and toxic atmospheres plus hot and hostile environments; the reactor cooling utilizing aproprietary liquid nitrogen system; the unloading and loading of catalyst under inert or normal atmospheres; the dense phase loading systems; and the innovative, purpose built-equipment ensuring low catalyst attrition rate. Further, the course also covers the catalyst sampling and particle measurement; the vacuum unloading with closed loopnitrogen re-circulation; the catalyst transportation, storage & containment (un approved); the tubular reformer loadings using unidense? loading and conventional techniques; the pre-sulphiding (DMDS injection); the metals reclamation and disposalof materials; the shutdown planning, coordination and execution; the edge equipment;the modifications for catalytic reactors, vessels on a blinds to blinds? basis; and the confined space and inert/toxic entry operations.

During this interactive course, participants will learn the unloading of

catalyst under inert/toxic atmosphere; the screening of catalyst under continuous nitrogen purging; the loading by conventional and licensed loading technologies; the HSE requirement; the environment requirement; the catalyst change/replacement report; and the catalyst change learned lessons and case studies.

What are the Goals?

Upon the successful completion of this course, each participant will be able to: -

- Apply systematic techniques in handling, loading, unloading, oxidation andreduction of catalyst material handling
- Prepare catalyst change plan and execute catalyst projects efficiently and safety with minimal delays from fusing, minimal catalyst attrition and dust control systems
- Identify catalyst change operation main requirement including pre-commissioningof reactors and vessels
- Determine work in inert and toxic atmospheres in hot and hostile environments aswell as reactor cooling utilizing a proprietary liquid nitrogen system
- Unload and load catalyst under inert or normal atmospheres and dense phaseloading systems
- Use dense phase loading system in transferring catalyst directly from grade toreactor man way without using cranes and hoppers
- Describe innovative and purpose build-equipment ensuring low catalyst attritionrate and perform catalyst sampling and particle measurement
- Employ vacuum unloading with closed loop nitrogen re-circulation and catalysttransportation, storage and containment

- Use tubular reformer loadings using unidense loading and conventional techniques
- Perform pre-sulphhiding, metals reclamation, disposal of materials, shutdownplanning, coordination and execution
- Describe edge equipment, modification for catalyst reactors, vessels on a blinds-to-blinds basis, confined space and inert toxic entry operations
- Unload catalyst under inert/toxic atmosphere, screen catalyst under continuousnitrogen purging and apply loading by convention and licensed loading technologies
- Enumerate HSE requirement, environment requirement, catalystchange/replacement report and lesson learned

Who is this Training Course for?

This course covers systematic techniques of catalyst material handling for those whoare involved in loading, unloading, oxidation and reduction. This includes refinery, chemicals and petrochemical engineers, supervisors and operation staff.

How will this Training Course be Presented?

In addition to a set of slides and a training manual, a highly interactive instructor presentation of the most important concepts, procedures, and issues will be provided. Furthermore, thecourse will also use several interactive Workshops and Exercises. In addition, a selected number of highly appropriate Videos will be shown.

Course Outlines:

Day 1:

- Welcome & Introduction
- PRE-TEST
- Preparing Catalyst Change Plan
- Execute Catalyst Project Efficiently & Safely
  - Minimal Delays from Fusing.
  - Minimal Catalyst Attrition.
  - Dust Control Systems.

- Catalyst Change Operation Main Requirement
  - Pre-Commissioning of Reactors & Vessels

- Work in Inert & Toxic Atmospheres Plus Hot & Hostile Environments
- Case Study & Related Video
- Recap

Day 2:

- Reactor Cooling Utilizing a Proprietary Liquid Nitrogen System
- Unloading & Loading of Catalyst Under Inert or Normal Atmospheres
- Dense Phase Loading Systems
  - Transfer of Catalyst Directly from Grade to Reactor Man Way, Without the Useof Cranes & Hoppers

- Innovative, Purpose Built-Equipment Ensuring Low Catalyst Attrition Rate
- Case Study & Related Video
- Recap

Day 3:

- Catalyst Sampling & Particle Measurement
- Vacuum Unloading with Closed Loop Nitrogen Re-Circulation
- Catalyst Transportation, Storage & Containment (UN approved)
  - Catalyst Loading of Reactors Using UOP® Dense Loading & ConventionalTechniques
- Tubular Reformer Loadings using Unidense® Loading & Conventional Techniques
- Pre-Sulphiding (DMDS Injection)
- Case Study & Related Video
- Recap

Day 4:

- Metals Reclamation & Disposal of Materials
- Shutdown Planning, Coordination & Execution
- Edge Equipment
  - Life Support Systems.
  - Vacuum Unloading.
  - Screening Equipment.
  - Modular Equipment.

- Modifications for Catalytic Reactors, Vessels Etc. on a Blinds to Blinds'

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- Basis
- Confined Space & Inert/Toxic Entry Operations
- Case Study & Related Video
- Recap

Day 5:

- Unloading of Catalyst Under Inert/Toxic Atmosphere
- Screening of Catalyst Under Continuous Nitrogen Purging
- Loading by Conventional & Licensed Loading Technologies
- HSE Requirement
- Environment Requirement
- Catalyst Change/Replacement Report
- Catalyst Change Learned Lessons
- Course Conclusion
- POST-TEST

Course Completion Certificate

On successful completion of the Training Course, the participants will be awarded with a 5M International Consultancy & Training Company Certificate.

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Training Course Prices:

Number of Participants	Course Price
1 participant	KWD 1450.000
2 participants	KWD 1400.000
3 participants	KWD 1350.000
4 participants	KWD 1300.000
5 participants	KWD 1250.000
6 and above participants	KWD 1200.000

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