

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Amine Gas Sweetening& Sulphur Recovery

Code	City	hotel	Start	End	price	Language - Hours
OG-667SA	Dammam	Hotel Meeting Room	2027-09-19	2027-09-23	12950 SR	En - 25

The Course

The removal of acidic components (primarily H2S and CO2) from hydrocarbon streams can be broadly categorized as those depending on chemical reaction, or adsorption.

Processes employing each of these techniques are described. The principle process stream is the removal of the acid gases by counter flowing contact with an amine solution, commonly known as Amine Gas Sweetening.

The acidic components removed are termed acid gas streams (containing H2S,) and may be flared, incinerated, or converted to elemental sulphur in a Sulphur Recovery Unit. Various Sulphur Recovery processes (primarily The Modified Claus Process) are discussed.

The Goals

Participants attending this programme will:

- Demonstrate an understanding of Amine sweetening and Sulphur Recovery technologies.
- Grasp an explanation of the key features of gas treating
- Discuss the thermodynamics of gas processing
- Identify the main process steps
- Evaluate, monitor, and troubleshoot gas treating operations

The Delegates

The course is specifically designed to be of substantial benefit to personnel within the Oil and Gas Industries such as:

- Technologists,
- Mechanical engineers,
- Inspection engineers
- Maintenance or project engineers.
- Operations personnel

It is designed for both technical and non-technical personnel as well as operational staff at professional level employed in refineries, petrochemical, and oil and gas process industries.

It will serve as an introduction to acid gas removal and sulphur recovery technology for those who are unfamiliar with the subject and will also assist those who need the ability to progress to a detailed knowledge of the gas processing technologies.

The Process

Amine Gas Sweetening and Sulphur Recovery is a hands on, stimulating learning experience. The programme will be highly interactive, with opportunities to advance your opinions and ideas. Participation is encouraged in a supportive environment.

To ensure the concepts introduced during the programme are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, simulations and group work.

The Benefits

The knowledge gained in this seminar will:

- Enable the delegate to develop a proactive operating regime within the organization

- Allow accurate troubleshooting practices to be applied to the gas processing and H2S removal processes.
- Enable the delegates to optimize the safe operation of Amine and H2S units.
- Give the delegates' confidence to carry out operational supervision of the Units.
- Provide a basis for decision making regarding optimization of gas treatment and sulphur recovery units

The Results

Delegates will acquire the knowledge and skills necessary to understand the key elements of Amine processes and operation and to apply this knowledge effectively to improve overall unit plant efficiency. This will enhance their competence and performance level and making additional value added contributions to their organizations.

- Understanding of Amine Gas Processing Units' operating and maintenance techniques.
- Familiarization of Sulphur Recovery process operating, and design, considerations
- Ability to put in place measures to maximize efficient operation.
- Improve process optimization techniques
- Interface with other gas processing units.

The Course Content

Day One

Gas Sweetening

- General Considerations and Safety
- Types of Contaminants
- Gas specifications
- Heating Value

- Sulphur Content
- Water Content
- Commercial Gases
- Ethane. Propane LPG

Day Two

Alkanolamine Processes

- Process Selection and Classification
- Chemistry of Amine Gas Sweetening
- Operating Problems
- Selective Sweetening Systems
- Process Flow and General Design Criteria / Guidelines
- MEA
- DEA
- MDEA
- DGA
- DIPA
- Formulated Solvents
- Sterically Hindered Amines

Day Three

Amine System Design

- Design Procedures for Amine Systems:
- amine absorber
- amine circulation rates
- flash drum
- amine reboiler
- amine stripper

- overhead condenser and reflux accumulator
- rich/lean amine exchanger
- amine cooler
- amine solution purification
- materials of construction
- General Operating Problems in Amine Processes:
- corrosion
- solution degradation
- foaming
- amine reclaiming
- filtration
- foam inhibitors
- corrosion inhibitors
- General Considerations for Amine Processes:
- inlet scrubbing
- amine losses
- filtration
- amine-amine heat exchanger
- amine regeneration

Day Four

Sulphur Recovery

- Claus Process Considerations and Modifications
- Typical PFD – 3 Stage
- Process Considerations
- Mechanical Considerations
- Instrumentation
- Tail Gas Handling
- Incineration
- Clean-up

- SO2 Recovery Process
- H2S Recovery Process
- Direct Oxidation Process
- Liquid Redox

Day Five

- The EUROCLAUS Concept
- SCOT
- Claus Process Calculations and Exercises
- Sulfur Product Specifications
- Sulfur Storage and Handling
- Safety and Environmental Considerations
- Sulfur Recovery
- Troubleshooting: what can go wrong
- Course review and evaluation

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

Our Success Partners

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