

TRAINING TITLE

AMINE TREATING AND SOUR WATER STRIPPING

Training Duration

5 days

Training Venue and Dates

ME364	Amine Treating and Sour Water Stripping	5	10-14 Feb. 2025	\$5,500	DUBAI, UAE
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees

- **\$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch**

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

This course provides a detailed understanding of the processes of amine treating and sour water stripping, which are commonly used in the oil and gas industry for gas sweetening and wastewater treatment. Amine treating is used to remove hydrogen sulfide (H₂S) and carbon dioxide (CO₂) from natural gas and refinery gas streams, while sour water stripping is applied to treat sour water containing dissolved H₂S and ammonia. Participants will learn the principles, equipment, operating procedures, and troubleshooting techniques associated with these processes. The course will also emphasize the importance of safety, environmental considerations, and process optimization in these critical operations.

TRAINING OBJECTIVES www.definettraining.com

By the end of this course, participants will be able to:

- Understand the basic principles of amine treating and sour water stripping processes.
- Learn how amine units work to remove H₂S and CO₂ from gas streams.
- Gain knowledge of sour water stripping units and how they treat sour water from refinery operations.
- Learn about the types of amines used in treating and their characteristics.
- Understand the design, equipment, and operating parameters for amine treating and sour water stripping systems.

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- Develop skills to troubleshoot common issues in amine treating and sour water stripping processes.
- Explore process optimization techniques for improving efficiency and safety.
- Understand the environmental and safety considerations in amine treating and sour water stripping operations.

WHO SHOULD ATTEND?

- Process engineers and operators working in the oil, gas, and petrochemical industries.
- Maintenance personnel involved in the operation and upkeep of amine treating and sour water stripping systems.
- Environmental health and safety professionals responsible for monitoring emissions and water quality.
- Engineers and technicians involved in the design, installation, and optimization of amine and sour water treatment systems.
- Students or professionals seeking to deepen their understanding of gas sweetening and sour water treatment processes.

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

COURSE PROGRAM:

Day 1: Introduction to Amine Treating and Sour Water Stripping

- Overview of gas sweetening and sour water treatment processes.
- Understanding the role of amine treatment in removing H₂S and CO₂.
- Sour water stripping: Definition, importance, and purpose.

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- Key components of amine treating systems: Contactors, absorbers, regenerators, and pumps.
- The chemistry of amine treating: Reactions with H₂S and CO₂.
- Sour water composition and the role of stripping in ammonia and H₂S removal.

Day 2: Amine Treating Process and System Design

- Types of amines used in gas sweetening (e.g., monoethanolamine, diethanolamine, methyl diethanolamine).
- Amine treating process flow: Gas and amine contact, absorption, and regeneration.
- Design considerations for amine units: Contactors, absorber towers, and stripper columns.
- Operating parameters: Temperature, pressure, and flow rate control.
- Process equipment: Pumps, heat exchangers, and reboilers.
- Troubleshooting common issues in amine units (e.g., foaming, amine degradation).

Day 3: Sour Water Stripping Process and System Design

- Overview of sour water composition: Presence of H₂S, NH₃, and other contaminants.
- The role of sour water stripping: Removing H₂S and ammonia from wastewater.
- Process flow of sour water stripping: Stripping towers, steam injection, and water treatment.
- Equipment involved in sour water stripping: Strippers, steam injectors, and condensers.
- Operating parameters for sour water stripping: Temperature, pressure, and steam rate.
- Troubleshooting sour water stripping units: Scaling, corrosion, and equipment failures.

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Day 4: Process Optimization and Troubleshooting Techniques

- Process optimization strategies for amine treating and sour water stripping.
- Amine solution management: Proper circulation and regeneration techniques.
- Monitoring and controlling key parameters: Pressure, temperature, flow rates, and amine concentration.
- Preventing and addressing common operational problems: Amine loss, degradation, and contaminants.

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- Troubleshooting sour water stripping systems: Ammonia removal efficiency, scaling, and fouling.
- Advanced techniques for improving process efficiency and reducing operational costs.

Day 5: Safety, Environmental Considerations, and Best Practices

- Health, safety, and environmental challenges in amine treating and sour water stripping operations.
- Handling hazardous materials: Amine solutions, H₂S, and ammonia.
- Managing emissions and wastewater discharge: Compliance with environmental regulations.
- Best practices for amine and sour water system operation and maintenance.
- Safety protocols: Emergency response, leaks, and gas detection.
- Final review of key concepts and best practices for effective process management.



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NOTE:

Pre-& Post Tests will be conducted.

Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.

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