

TRAINING TITLE

PROCESS CHEMICALS SIGNIFICANCE AND SPECIFICATIONS

Training Duration

5 day

Training Venue and Dates

Ref. No. PE116	Process Chemicals Significance and specifications	5	15-19 Sep 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 Consultants Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

Process chemicals play a vital role in ensuring the safe, efficient, and environmentally responsible extraction, processing, and transportation of oil and gas. These chemicals are used throughout the entire lifecycle of oil and gas production—from upstream exploration and production to midstream transportation and downstream refining. Proper selection, application, and specification of these chemicals are essential for optimizing operations, minimizing risks, and meeting regulatory requirements.

The "Process Chemicals Significance and Specifications" course is a comprehensive 5-day program designed to provide professionals in the oil and gas industry with an in-depth understanding of the significance, selection, and specifications of various process chemicals. Participants will gain the knowledge necessary to choose the right chemicals for specific applications, ensure safety and environmental compliance, and enhance operational efficiency.

TRAINING OBJECTIVES

By the end of the course, participants will be able to understand

- Equip you with critical knowledge of the various chemicals used in oil and gas operations, including their functions, specifications, and application methods.

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- Provide insights into chemical selection criteria based on factors such as safety, cost, performance, and environmental impact.
- Enable you to understand and interpret chemical specifications, ensuring that chemicals meet industry standards and operational requirements.
- Enhance your ability to ensure safety and compliance in handling, storing, and disposing of chemicals in line with industry regulations.
- Help you optimize chemical processes for maximum efficiency, while minimizing risks and environmental impact.

WHO SHOULD ATTEND?

This course is ideal for:

- **Process engineers** and **chemical engineers** working in upstream, midstream, and downstream operations.
- **Operations engineers** and **technicians** involved in chemical treatment and process optimization.
- **Procurement specialists** responsible for sourcing chemicals and ensuring they meet operational and safety requirements.
- **Health, safety, and environmental professionals** ensuring safe chemical usage and compliance with regulations.
- **Maintenance engineers** who manage equipment exposed to chemicals and require knowledge of chemical interaction and corrosion prevention.

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

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COURSE PROGRAM:

Day 1: Introduction to Process Chemicals in the Oil and Gas Industry

- Overview of the Oil and Gas Industry and the Role of Process Chemicals
- Types of Process Chemicals: Corrosion Inhibitors, Demulsifiers, Solvents, Biocides, and More
- Importance of Chemical Selection in the Entire Oil and Gas Production Cycle
- Functions of Process Chemicals in Different Stages: Exploration, Production, Refining, and Transportation
- Chemical Engineering Principles: Interactions Between Chemicals and Hydrocarbon Streams
- Health, Safety, and Environmental Concerns in Chemical Usage
- Case Study: Application of Process Chemicals in an Oil Production Facility

Day 2: Chemical Specifications and Standards

- Understanding Chemical Specifications: Purity, Concentration, and Impurities
- Industry Standards and Regulatory Compliance: ISO, API, ASTM, and Local Regulations
- How to Interpret Chemical Data Sheets and Technical Specifications
- Specifying Process Chemicals for Different Applications: Criteria for Selection
- Environmental and Safety Specifications: Toxicity, Biodegradability, and Handling Requirements
- Group Discussion: Challenges in Defining and Meeting Chemical Specifications in Oil and Gas

Day 3: Key Process Chemicals and Their Applications

- Corrosion Inhibitors: Types, Applications, and Performance Criteria
- Scale Inhibitors and Hydrate Preventers: Role in Flow Assurance and Pipeline Operations
- Demulsifiers: Applications in Separation and Oil-Water Emulsions
- Biocides and Microbial Control: Preventing Biofouling and Corrosion
- Solvents and Surfactants: Uses in Cleaning, Separation, and Enhanced Oil Recovery
- Case Study: Optimizing Chemical Treatment Programs for Enhanced Recovery in an Oilfield

Day 4: Chemical Handling, Storage, and Safety

- Best Practices for Chemical Handling: Safe Transport, Storage, and Mixing
- Safety Protocols: Personal Protective Equipment (PPE), Emergency Response, and Spill Management
- Chemical Dosage and Injection Systems: Equipment and Best Practices

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- Risk Management: Hazardous Chemical Inventory and Management Systems
- Safety Data Sheets (SDS) and Labeling Requirements
- Case Study: Chemical Spill Management and Emergency Response in an Offshore Facility

Day 5: Chemical Optimization and Troubleshooting

- Chemical Optimization in Oil and Gas Operations: Efficiency, Cost, and Performance
- Troubleshooting Chemical Processes: Identifying and Addressing Chemical Failures in Operations
- Process Monitoring and Control: Ensuring Chemical Effectiveness and Minimizing Environmental Impact
- Advances in Chemical Technologies: Green Chemistry, Bio-based Chemicals, and Automation
- Designing a Chemical Management Plan for a Real-World Oil and Gas Facility
- Course Wrap-Up: Key Learnings, Q&A, and Certification

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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