TRAINING TITLE

Chemical Selection and Testing

Training Duration

5 day

Training Venue and Dates

Ref. No. PE076	**Chemical Selection and Testing**	**5**	**08-12 Sep. 2025**	**$5,500**	**ABU DHABI, UAE**

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

Chemicals play a critical role in the oil and gas industry, from exploration and drilling to production, refining, and transportation. Choosing the right chemicals and performing thorough testing are essential steps in ensuring the efficiency, safety, and sustainability of operations. This 5-day course will provide participants with a solid understanding of the principles and practices involved in the selection, testing, and application of chemicals in the oil and gas industry.

TRAINING OBJECTIVES

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

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

1. Understand the different types of chemicals used in oil and gas operations and their roles in various processes.
2. Follow a systematic approach for selecting chemicals based on operational requirements, performance, and safety.
3. Use appropriate testing methods to evaluate the performance of chemicals in oil and gas operations.
4. Identify and mitigate the environmental and safety risks associated with chemical use.

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5. Ensure regulatory compliance and create effective chemical management plans.
6. Address specialized applications of chemicals, including enhanced oil recovery (EOR), fracking, and refinery processes.

WHO SHOULD ATTEND?

This course is designed for professionals working in the oil and gas industry who are involved in chemical selection, testing, and application, including:

- **Process Engineers and Technicians**
- **Production Operators and Supervisors**
- **Chemists and Laboratory Technicians**
- **Maintenance Engineers**
- **HSE (Health, Safety, and Environmental) Professionals**
- **Procurement and Supply Chain Managers**
- **Regulatory Compliance Officers**
- **R&D Engineers and Specialists**

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 Chemicals in Oil and Gas Operations

- **Overview of chemical usage in the oil and gas industry: upstream, midstream, and downstream.**
- **Types of chemicals commonly used in oil and gas operations: drilling fluids, production chemicals, corrosion inhibitors, and water treatment chemicals.**
- **Importance of chemical selection in optimizing production, enhancing safety, and reducing environmental impact.**

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- Chemical properties and classifications: physical and chemical properties, reactivity, and toxicity.
- Criteria for selecting chemicals based on operational requirements, cost, and environmental considerations.
- Case study: The impact of improper chemical selection on oil and gas operations.

Day 2: Chemical Selection Process and Criteria

- Detailed process of chemical selection: identifying needs, conducting tests, and evaluating alternatives.
- Operational factors influencing chemical choice: temperature, pressure, pH, salinity, and chemical interactions.
- Chemical compatibility: how to evaluate and ensure compatibility with existing systems and equipment.
- Performance-based selection criteria: efficiency, effectiveness, cost-effectiveness, and environmental compliance.
- Safety considerations in chemical selection: toxicity, flammability, handling, and storage.
- Reviewing case studies to determine the best chemical selection for specific operational challenges.

Day 3: Chemical Testing and Performance Evaluation

- Overview of chemical testing methods: laboratory tests, field trials, and simulation testing.
- Key performance indicators (KPIs) for testing chemicals in oil and gas operations: stability, solubility, reactivity, and corrosion inhibition.
- Testing methods for common chemicals: corrosion inhibitors, demulsifiers, scale inhibitors, and surfactants.
- Evaluating the effectiveness of chemical treatments in real-world conditions: simulations vs. field conditions.
- conducting basic tests on common chemicals used in the industry.
- Interpreting chemical testing data and making recommendations for chemical treatments.

Day 4: Chemical Regulatory Compliance and Environmental Considerations

- Overview of regulatory standards for chemicals in the oil and gas industry: local, national, and international regulations.
- Environmental considerations: minimizing toxicity, waste disposal, and chemical spill response.
- Compliance with industry standards: ISO, REACH, OSHA, and EPA regulations.

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- **Developing a chemical management plan: selection, testing, storage, and disposal.**
- **Case studies on chemical spills and environmental impacts in oil and gas operations.**
- **Creating a compliance checklist for chemical selection, testing, and usage.**

Day 5: Chemical Selection for Specialized Oil and Gas Applications

- **Chemical selection for specialized applications: enhanced oil recovery (EOR), fracking, and refinery operations.**
- **Customizing chemical treatments for specific challenges: paraffin control, asphaltene deposition, and hydrate prevention.**
- **Advanced testing techniques for specialized chemicals.**
- **Emerging trends in chemical development: biodegradable and eco-friendly chemicals.**
- **Future challenges in chemical selection and testing: automation, AI, and data-driven decision-making.**
- **Developing a chemical selection and testing plan for a specific oil and gas operation.**
- **Course review, Q&A, and certification distribution.**

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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