MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

PRODUCTION CHEMISTRY – USE AND APPLICATION OF SPECIALITY CHEMICALS FOR THE OIL AND GAS INDUSTRY

"Enhancing Production Efficiency and Asset Integrity through Smart Chemical Solutions"

Schedule

Date	Venue	Fees (Face-to-Face)
07 – 11 Sep 2026	London – UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Production chemistry plays a vital role in maintaining flow assurance, controlling corrosion, preventing scaling, and optimizing hydrocarbon recovery across upstream oil and gas operations. The effective use of specialty chemicals—tailored to specific field conditions—can significantly reduce operational risks and enhance production efficiency.

This intensive 5-day course equips participants with the knowledge and practical skills required to select, evaluate, and apply production chemicals such as demulsifiers, scale inhibitors, corrosion inhibitors, and biocides. Through real-world field examples and guided workshops, delegates will develop a strong foundation in production chemistry strategies for both onshore and offshore environments.

Objectives

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

- Understand the roles and functions of key production chemicals in oilfield operations
- Select and apply the right chemicals based on fluid properties and operational conditions
- Evaluate chemical performance using laboratory and field-testing techniques
- Mitigate common flow assurance issues such as scale, wax, emulsion, and hydrate formation
- Integrate chemical treatment programs with operational and HSE requirements

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Why Attend

- Gain practical insight into the science and application of specialty oilfield chemicals
- Improve decision-making related to chemical selection and dosing strategies
- Learn how to troubleshoot field production issues using chemical solutions
- Stay current on environmental regulations and chemical safety practices
- Reduce production losses, equipment failures, and unplanned shutdowns

Target Audience

This program is designed for:

- Production and operations engineers
- Chemical and process engineers in upstream oil & gas
- Flow assurance and integrity specialists
- Laboratory and field chemists
- HSE, QA/QC, and chemical supply professionals

Individual Benefits

Key competencies that will be developed include:

- Technical understanding of production chemicals and their mechanisms
- Ability to assess chemical compatibility and environmental impact
- Skills in chemical selection, testing, and performance optimization
- Familiarity with troubleshooting flow and integrity problems using chemical treatments
- Knowledge of monitoring, dosing, and compliance techniques

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved field productivity through optimal chemical applications
- Reduced operational risk from scale, corrosion, wax, and emulsions
- Lower chemical costs through better selection and performance tracking
- Enhanced chemical safety and regulatory compliance
- Improved collaboration between field operations and chemical suppliers

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – In-depth coverage of production chemistry concepts, chemical functions, and deployment methods
- Case Studies – Field-based problems and their chemical treatment solutions
- Workshops – Interactive activities involving chemical selection, lab analysis interpretation, and troubleshooting
- Peer Exchange – Collaborative discussions on chemical program management and vendor evaluation
- Tools – Chemical screening templates, performance tracking sheets, and risk assessment checklists

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Course Outline

DETAILED 5-DAY COURSE OUTLINE

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Fundamentals of Production Chemistry

- Module 1: Introduction to Production Chemistry (07:30 – 09:30) • Scope and importance of production chemistry in upstream operations • Overview of specialty chemical types and functions • Influence of reservoir and produced fluid properties on chemical needs
- Module 2: Fluid Characterization and Sampling (09:45 – 11:15) • Properties of crude oil, water, and gas phases • Sampling protocols and analysis techniques • Identifying flow assurance risks from fluid composition
- Module 3: Chemical Compatibility and Safety (11:30 – 01:00) • Chemical interactions and incompatibility risks • Handling, storage, and MSDS review • Regulatory and HSE considerations
- Module 4: Workshop – Fluid Analysis Review (02:00 – 03:30) • Case-based fluid property analysis • Identifying potential production challenges • Chemical treatment brainstorming

Day 2: Scale and Corrosion Management

- Module 1: Scale Formation and Inhibitors (07:30 – 09:30) • Causes of inorganic scale: $CaCO_3$, $BaSO_4$, $SrSO_4$ • Thermodynamics and kinetics of scale deposition • Scale inhibitor chemistries and selection
- Module 2: Corrosion Mechanisms and Control (09:45 – 11:15) • CO_2, H_2S, and oxygen-related corrosion • Material selection and corrosion monitoring • Types of corrosion inhibitors and their application
- Module 3: Monitoring and Treatment Techniques (11:30 – 01:00) • Real-time corrosion/scale monitoring tools • Dosing systems, injection pumps, and skid setups • Interpretation of field data and trend analysis
- Module 4: Workshop – Inhibitor Selection Case Study (02:00 – 03:30) • Field scenario with scaling and corrosion risks • Designing a chemical program • Group discussion on risks and mitigation

Day 3: Emulsions, Wax, and Asphaltene Control

- Module 1: Emulsion Formation and Demulsifiers (07:30 – 09:30) • Emulsion types, stability factors, and impacts • Mechanism of demulsification • Lab and field testing of demulsifier performance
- Module 2: Wax and Asphaltene Precipitation (09:45 – 11:15) • Temperature and pressure effects on deposition • Wax crystal inhibitors and dispersants • Solvent flushing and pigging integration
- Module 3: Hydrate Prevention Strategies (11:30 – 01:00) • Formation of gas hydrates in multiphase systems • Use of kinetic and thermodynamic hydrate inhibitors • Subsea flow assurance strategies
- Module 4: Workshop – Emulsion Troubleshooting (02:00 – 03:30) • Diagnosing emulsion issues using field data • Demulsifier selection and performance tracking • Group recommendations for treatment optimization

Day 4: Biocides, Antifoams, and Other Additives

- Module 1: Microbial Control and Biocides (07:30 – 09:30) • SRBs and microbiologically influenced corrosion (MIC) • Biocide selection and application protocols • Biofilm removal and monitoring
- Module 2: Foam Formation and Antifoaming Agents (09:45 – 11:15) • Sources of foam and operational impact • Mechanism and types of antifoams • Performance testing and evaluation
- Module 3: Other Specialty Additives (11:30 – 01:00) • Drag reducers, oxygen scavengers, H_2S scavengers • Treatment for paraffin, scale-softening, and flow enhancers • Combined product formulations
- Module 4: Workshop – Chemical Selection Matrix (02:00 – 03:30) • Prioritizing treatment needs by function • Evaluating chemical compatibility • Program design exercise

Day 5: Chemical Program Management and Optimization

- Module 1: Designing a Chemical Treatment Program (07:30 – 09:30) • Aligning chemical strategies with field operations • Dosing calculations and frequency planning • Lifecycle cost and performance tradeoffs
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Module 2: Field Implementation and Monitoring (09:45 – 11:15) • Chemical injection systems and automation • Verification and adjustment of dosage rates • Managing vendor performance and service contracts

- Module 3: Final Review and Emerging Technologies (11:30 – 01:00) • Review of key chemical functions and design logic • New chemistries, green chemicals, and digital dosing tools • Best practices and lessons learned
- Module 4: Final Assessment and Wrap-Up (02:00 – 03:30) • Knowledge check • Group discussion and Q&A • Certification and closing remarks

Certification

Participants will receive a Certificate of Completion in Production Chemistry – Use and Application of Specialty Chemicals for the Oil and Gas Industry, validating their expertise in the selection, application, and management of oilfield chemicals to improve production performance and asset integrity.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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