BLACKBIRD FOR TRAINING

Evaluation of Chemicals for Control of Bacteria (Biocide Activity NACE Standard Test Method TM0194-2014)



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Introduction

This course is designed to provide participants with a comprehensive understanding of biocide evaluation techniques used in industrial systems, following the NACE Standard TM0194-2014.
The training covers the fundamental principles, laboratory methods, and interpretation of results for assessing chemical biocides.
The course focuses on microbial control in oil and gas systems, water treatment facilities, and other industrial environments.
Participants will gain insights into microbiologically influenced corrosion MIC, biofilm formation, and the performance of different biocides.
Emphasis is placed on applying the NACE TM0194-2014 standard method and translating laboratory data to field applications.

Course Objectives

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

- Understand the importance of microbial control in industrial systems.
- Learn the principles of biocide activity and microbiological testing.
- Apply the NACE TM0194-2014 standard method for evaluating biocides.
- Interpret laboratory results and assess biocide efficacy.
- Develop and optimize biocide treatment programs to ensure effective microbial control.

Course Outlines

Day 1: Introduction to Microbiologically Influenced Corrosion MIC

- Overview of MIC in industrial systems.
- Common microorganisms involved SRB, APB, etc..
- Impact of MIC on materials and operations.
- Detection methods and indicators of MIC.
- Introduction to chemical biocides as control agents.



Day 2: Principles of Biocide Activity

- Classification and types of biocides.
- Mode of action of chemical biocides.
- Factors affecting biocide efficacy.
- Biocide compatibility with system materials.
- Environmental and safety considerations.

Day 3: Overview of NACE TM0194-2014 Standard

- Purpose and scope of the NACE TM0194-2014 standard.
- Terminologies and definitions.
- Types of laboratory tests described.
- Requirements for laboratory setup.
- Safety and quality control measures.

Day 4: Sample Collection and Microbial Enumeration

- Proper sample collection techniques.
- Media and conditions for microbial growth.
- Culturing SRB, APB, and other microbes.
- Enumeration methods: MPN and plating.
- Identification of contamination and data logging.

Day 5: Preparing Biocide Test Systems

- Designing lab test systems per NACE TM0194.
- Static vs dynamic test setups.
- Inoculation procedures.
- Control setups and blanks.
- Initial baseline data recording.

Day 6: Conducting the Kill-Time Test

- Introduction to kill-time contact time testing.
- Determining appropriate contact times.
- Sampling and sub-culturing.
- Measuring log reductions in microbial populations.
- Analyzing biocide performance.



Day 7: Minimum Inhibitory Concentration MIC Tests

- Understanding MIC and its relevance.
- Setup of MIC tests under NACE guidelines.
- Data interpretation and microbial regrowth.
- Comparative analysis of different biocides.
- Troubleshooting anomalies.

Day 8: Biofilm Assessment and Biocide Penetration

- Understanding biofilms and their resistance.
- Biofilm formation in lab settings.
- Techniques to evaluate biofilm biocide penetration.
- Interpretation of results and efficacy metrics.
- Cleaning vs disinfecting biocide activity.

Day 9: Data Analysis and Reporting

- Statistical methods for test result evaluation.
- Documentation and NACE-compliant reporting.
- Interpreting test results for field application.
- Case studies of biocide evaluation.
- Common errors and corrective actions.

Day 10: Field Applications and Program Optimization

- Translating lab data to field implementation.
- Designing biocide treatment programs.
- Continuous vs intermittent dosing strategies.
- Monitoring and evaluation protocols.
- Final review, assessment, and course evaluation.

Why Attend this Course: Wins & Losses!

- Master the application of the NACE TM0194-2014 standard for evaluating chemical biocides.
- Learn best practices for controlling microbial growth in oil and gas systems, water treatment, and other industrial environments.
- Gain practical experience in laboratory techniques, data interpretation, and program optimization.
- Improve decision-making and enhance the efficacy of your biocide treatment programs.



Conclusion

The Evaluation of Chemicals for Control of Bacteria Biocide Activity - NACE Standard Test Method TM0194-2014 course delivers a practical and comprehensive training experience.
Participants will acquire the knowledge and technical skills necessary to ensure effective biocide activity, reduce MIC, and optimize treatment programs in industrial settings.

This certification empowers you to apply the NACE TM0194-2014 standard with confidence, improving safety, reliability, and system performance.

