



Methyl Mercury Analysis Training Course

1 – 5 February 2027
Rome (Italy)





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Ref: 15423_307386 **Date:** 1 – 5 February 2027 **Location:** Rome (Italy) **Fees:** 7200 Euro

Introduction:

Understanding the complexities and methodologies of mercury analysis is crucial in chemical engineering analysis. The Methyl Mercury Analysis training course offers an in-depth exploration of various mercury analysis methods, including the intricacies of methyl mercury analysis. Mercury, particularly in its methylated form, poses significant environmental and health risks, necessitating precise and accurate measurement techniques.

The methyl mercury analysis course delves into several advanced mercury analysis systems, providing participants with an understanding of total and direct mercury analysis. Among the methods covered, cold vapor atomic absorption spectroscopy CVAAS and cold vapor atomic fluorescence spectroscopy CVAFS are highlighted for their sensitivity and precision in detecting mercury levels.

This methyl mercury analysis training examines Inductively Coupled Plasma Optical Emission Spectroscopy ICP OES and Inductively Coupled Plasma Mass Spectrometry ICP MS, both pivotal in mercury analysis by ICP. Participants will also gain proficiency in mercury analysis by AAS atomic absorption spectroscopy, enhancing their capability to conduct thorough chemical engineering analyses.

Participants in this methyl mercury analysis course will emphasize the significance of understanding chemical engineering analysis and provide a robust introduction to the principles governing this field. Attendees will have the knowledge and skills to perform methyl mercury analysis using state-of-the-art techniques and methodologies, ensuring accurate and reliable results in various applications. It is designed to elevate their proficiency in mercury analysis to new heights.

Targeted Groups:

- Environmental Scientists.
- Analytical Chemists.
- Chemical Engineers.
- Environmental Health and Safety Professionals.
- Laboratory Technicians.
- Water Quality Analysts.
- Regulatory Compliance Officers.
- Environmental Consultants.
- Industrial Hygienists.
- Academic Researchers in Environmental Science.
- Public Health Officials.
- Environmental Monitoring Specialists.

Course Objectives:

At the end of this methyl mercury analysis course, the participants will be able to:

- Understand the principles of mercury analysis.
- Learn various mercury analysis methods.
- Operate advanced mercury analysis systems.
- Conduct direct mercury analysis accurately.
- Perform total mercury analysis effectively.
- Master CVAAS mercury analysis techniques.
- Utilize CVAFS mercury analysis procedures.
- Apply ICP OES mercury analysis methods.
- Execute mercury analysis by ICP MS.
- Implement mercury analysis by AAS.
- Understand methyl mercury analysis methods.
- Conduct thorough methyl mercury analysis.
- Gain insights into chemical engineering analysis.
- Comprehend what is a chemical engineering analysis.
- Build a foundation with an introduction to chemical engineering analysis.

Targeted Competencies:

At the end of this methyl mercury analysis training, the participant's competencies will:

- Proficiency in mercury analysis methods.
- Expertise in methyl mercury analysis.
- Operation of advanced mercury analysis systems.
- Conducting direct mercury analysis.
- Performing total mercury analysis.
- Mastery of CVAAS mercury analysis techniques.
- Skill in CVAFS mercury analysis procedures.
- Competence in ICP OES mercury analysis.
- Application of mercury analysis by ICP MS.
- Knowledge of mercury analysis by AAS.
- Understanding of methyl mercury analysis methods.
- Ability to execute chemical engineering analysis.
- Comprehension of what a chemical engineering analysis is.
- Solid foundation in the introduction to chemical engineering analysis.

Course Content:

Unit 1: Introduction to Mercury Analysis

- Overview of mercury and its environmental impact.
- Importance of accurate mercury analysis.
- Introduction to various mercury analysis methods.
- Fundamentals of mercury analysis systems.
- Understanding direct mercury analysis.
- Importance of total mercury analysis.

Unit 2: CVAAS and CVAFS Mercury Analysis

- Principles of Cold Vapor Atomic Absorption Spectroscopy CVAAS.
- Techniques and applications of CVAAS mercury analysis.
- Principles of Cold Vapor Atomic Fluorescence Spectroscopy CVAFS.
- Techniques and applications of CVAFS mercury analysis.
- Comparing CVAAS and CVAFS for different scenarios.
- Practical exercises on CVAAS and CVAFS.

Unit 3: ICP OES and ICP MS Mercury Analysis

- Introduction to Inductively Coupled Plasma Optical Emission Spectroscopy ICP OES.
- Techniques for ICP OES mercury analysis.
- Introduction to Inductively Coupled Plasma Mass Spectrometry ICP MS.
- Techniques for mercury analysis by ICP MS.
- Advantages and limitations of ICP OES and ICP MS.
- Hands-on training with ICP OES and ICP MS systems.

Unit 4: Mercury Analysis by AAS

- Fundamentals of Atomic Absorption Spectroscopy AAS.
- Methods for mercury analysis by AAS.
- Practical applications of AAS in mercury detection.
- Calibration and validation of AAS instruments.
- Troubleshooting common issues in AAS mercury analysis.
- Real-world examples of AAS mercury analysis.

Unit 5: Methyl Mercury Analysis Techniques

- Understanding methyl mercury and its toxicity.
- Specific methods for methyl mercury analysis.
- Sample preparation for methyl mercury analysis.
- Analyzing methyl mercury in various matrices.
- Quality control in methyl mercury analysis.
- Case studies on methyl mercury analysis.

Unit 6: Chemical Engineering Analysis in Mercury Studies

- What is a chemical engineering analysis?
- Introduction to chemical engineering analysis principles.
- Applying chemical engineering analysis to mercury studies.
- Case studies in chemical engineering analysis for mercury.
- Techniques for improving mercury analysis accuracy.
- Integrating chemical engineering analysis in environmental studies.

Unit 7: Practical Applications and Advanced Topics

- Real-world applications of mercury analysis in various industries.
- Advanced topics in mercury analysis methods.
- Developing efficient mercury analysis systems.
- Future trends in mercury analysis technology.
- Environmental regulations and compliance for mercury analysis.
- Comprehensive review and final project on mercury analysis.