



AL167: Petroleum Products and Biofuels Analysis

Training Description:

This intensive 5-day course provides a comprehensive overview of the analysis of petroleum products and biofuels. Participants will gain a thorough understanding of the key properties and characteristics of various petroleum products, including gasoline, diesel, jet fuel, and lubricants. They will explore the critical role these properties play in engine performance, emissions, and fuel efficiency. Additionally, the course will delve into the analysis of biofuels, such as biodiesel and ethanol, and how their properties compare to their petroleum counterparts. Participants will learn about the feedstocks used to produce biofuels and the environmental benefits associated with their use. The course will also cover the challenges faced in biofuel production and integration with existing fuel infrastructure.

In addition, this course aims to qualify participants in the application of test methods for petroleum and petroleum products according to standards established by leading organizations. These organizations include the American Society for Testing and Materials (ASTM) in the United States, the Institute of Petroleum (IP) located in London, United Kingdom, the Association Française de Normalisation (AFNOR) headquartered in Paris, France, the Deutsches Institut für Normung (DIN) based in Germany, the Japanese Industrial Standards (JIS) with headquarters in Tokyo, Japan, and the International Organization for Standardization (ISO) situated in Geneva, Switzerland. These esteemed organizations have made significant contributions to the development of standardized test methods for the analysis of petroleum products.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Identify and explain the key properties and characteristics of various petroleum products and biofuels.
- ✓ Understand the different types of fuel analysis methods and their applications.
- ✓ Gain practical knowledge of standard test methods for petroleum products and biofuels.
- ✓ Analyze and interpret data obtained through various analytical techniques.
- ✓ Compare and contrast the properties of petroleum products and biofuels.
- ✓ Discuss the future of fuel analysis and emerging trends.

Training Designed for:

This course is designed for professionals working in the following fields:

- Petroleum refining
- Fuel quality control
- Biofuel production
- Chemical engineering
- Environmental science
- Quality assurance/control
- Regulatory agencies

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

❖ Introduction to Petroleum Products

- Overview of the petroleum refining process
- Classification of petroleum products: gasoline, diesel, jet fuel, lubricants, etc.
- Key properties of petroleum products: octane number, cetane number, viscosity, flash point, etc.
- Importance of fuel quality control

DAY TWO:

❖ Introduction to Biofuels

- Types of biofuels: biodiesel, ethanol, biogas, etc.
- Feedstocks for biofuel production
- Environmental benefits of using biofuels
- Challenges associated with biofuel production and use
- Comparison of biofuels with petroleum products

DAY THREE:

❖ Standardized Test Methods for Petroleum Products

- Focus: Qualifying participants in applying test methods according to leading organizations.
- Introduction to the importance of standardized test methods for petroleum product analysis.
- Overview of standards established by:
 - American Society for Testing and Materials (ASTM) in the United States
 - Institute of Petroleum (IP) located in London, United Kingdom
 - Association Française de Normalisation (AFNOR) headquartered in Paris, France
 - Deutsches Institut für Normung (DIN) based in Germany
 - Japanese Industrial Standards (JIS) with headquarters in Tokyo, Japan
 - International Organization for Standardization (ISO) situated in Geneva, Switzerland
- Highlighting the significant contributions of these organizations to developing standardized test methods.

DAY FOUR:

❖ Applying Standardized Test Methods to Petroleum Products

- In-depth exploration of selected test methods for key petroleum product properties, referencing relevant standards from leading organizations (e.g., ASTM D86 for distillation, ASTM D92 for flash point).
- Hands-on demonstrations (if applicable) or detailed explanations of test procedures for various properties.
- Emphasis on proper data collection and interpretation based on standardized methods.

DAY FIVE:

❖ Biofuel Analysis and Future Trends

- Standardized test methods for biofuels according to leading organizations (similar to Day 3).

- Analysis of specific biofuels like biodiesel (FAME content) and ethanol (water content).
- Determination of biofuel blend ratios with petroleum products.
- Emerging analytical techniques for biofuel analysis.
- Impact of environmental regulations on fuel specifications and future trends in fuel analysis.
- Advancements in analytical instrumentation and the role of automation.
- Sustainability considerations in fuel production and analysis.

❖ Course Conclusion

❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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