SIEMENS

Online Instructor-led Training

Total Sulfur Application - Vapor Samples

General Information

Course Code: PIA-PAOILMAXTSA
Length: 15 Hours

Audience

This course is intended for individuals responsible for routine maintenance and calibration of the Maxum Gas Chromatograph Total Sulfur Application measuring vapor samples such as flare gas.

Prerequisites

- Maxum Operation with GCP Level 1

Profile

2.5 CEUs (Continuing Education Credits)

The course covers operation, setup, validation and calibration of the Maxum Gas Chromatograph Total Sulfur Application. A live, instructor led, on-line course delivered in 3 hour learning modules through an innovative web application. Access to fully functional Gas Chromatograph Portal (GCP) workstation software will be provided to the student through a cloud based application. Students are encouraged to complete assigned lab exercises during and after each session to reinforce the learning modules throughout the week. A professional Siemens instructor will also be available to answer student questions outside of scheduled class times.

This course uses interactive presentations and discussions on the four key areas of this application - multiple range dilution system, FID combustion to convert Sulfurs to SO2, SO2 chromatograph application, the FPD detector and validation setup. Course includes hands on exercises in an off-line database using GCP workstation software. Contact the Siemens Registrar for site specific customization.

Objectives

Upon completion of this course, the student shall be able to:

- Understand the basic operation and maintenance of the FID and FPD.
- Adjust pressures and timing for the sample dilution system.
- Setup FID combustion for Sulfur conversions
- Setup and Calibrate the SO2 analytical Method.
- Setup sequences and validation for multiple sample gases.

Topics

1. Introduction to Total Sulfur Application
   a. Managing wide Detector Range
   b. Total Sulfur Conversion
   c. Chromatography
   d. Review hardware locations
   e. Class application vs. customized (H20, H2S, non-standard ranges)
   f. Sample Systems and Shelters
2. FPD Detector
   a. Detector Theory
   b. Fuel Gas Flow Setup
   c. Lighting the flame
   d. PMT
   e. Calibration Setup
3. SO2 Analytical Method
   a. Columns and Valves
   b. Flow setup
   c. Backflush setup
   d. Adjust Retention Times
   e. Calibration
4. FID Combustion System
   a. Conversion of Total Sulfur to SO2
   b. FID Operation
   c. Fuel Gas Flow Setup
   d. Lighting the flame
   e. Adjust Signal Level
5. Sample Dilution Operation
   a. Overview
   b. Stage Setup
   c. Adjust EPC pressures and times
   d. Valve Time Adjustment
   e. Changing ranges
6. Validation of Multiple Sample Gases
   a. Review Standard Validation Sequences
   b. Achieving Validation within time limits
   c. Activate a Validation Sequence
   d. Modify a Validation Sequence
   e. Add a Validation Sequence
7. Maintenance Planning
   a. Validation
   b. Calibration
   c. Monitoring detector noise levels
   d. Filter and Membrane Maintenance
   e. Monitoring Sample System Pressures, temperatures and flows.

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