



PCE194

Natural Gas Processing, Gas Sweetening and Sulphur Recovery

Course Introduction:

This course emphasizes process selection, practical operating issues, technical fundamentals, and integration of the sweetening facilities into the overall scheme of gas processing. Sulfur recovery and tail gas processes are also covered including standard Claus configurations, SuperClaus®, EuroClaus®, SCOT® etc. Special design and operation topics such as trace sulfur compound handling and the importance of H₂S:CO₂ ratio is covered. Related topics such as liquid product treating, corrosion, materials selection and NACE requirements will also be reviewed.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Evaluation and selection of processes to remove acid gases (H₂S, CO₂, COS, CS₂, mercaptans, etc) from gas and NGLs
- ✓ The advantages and disadvantages of available gas treating technology and processes
- ✓ How to estimate solvent circulation rates, energy requirements and equipment sizes
- ✓ Recognize and evaluate solutions to common problems
- ✓ Sulfur recovery technologies, including an overview of the Claus Sulfur process
- ✓ How to select the proper sulfur recovery process given differing process conditions

Who Should Attend?

This course is intended for all production and processing personnel involved with natural gas treating and sulfur recovery requiring an understanding of the principles of these process operations. This course is for facilities engineers, process engineers, operations personnel, field supervisors and others who select, design, install, evaluate or operate gas sweetening and sulfur recovery facilities.

Course Outline:

Day 1:

Introduction and Overview

- Gas Specifications and Process Selection Criteria
- Basic Principles and Important Conversions

Amines

- Amine Types, Process Overview and Applications
- Operating Parameters
- Operating Problems
 - Foaming

- Corrosion
- Degradation

Day 2:

Sulfinol Processes

Flexsorb

Carbonate Processes

- Type and Process Overview
- Operating Parameters
- Operating Problems
- Calculations

Physical Absorption Processes

- Applications
- Absorption Theory Principles

Day 3:

Physical Absorption Processes (continued)

- Water
- Selexol
- Other Physical Solvents Overview
 - Fluor Solvent
 - Propylene Solvent
 - Rectisol/Purisol, Others

Selective Treating

- MDEA
- Selexol

Metallurgical Issues

- Material Selection for Sour Gas Processing

Day 4:

Other Technologies/New Development

- Membranes
- Ryan-Holmes/Fractionation Processes
- Other Emerging Technologies
- Combination Processes and others

Solid Bed and Non-Regenerable Processes

- Iron Sponge
- Molecular Sieve
- Zinc Oxide
- Other Processes

Sulphur Recovery

- Claus Process
 - Process Overview
 - Operating Parameters
 - Simulation
 - Operating Problems
 - Effect of CO₂
- Liquid Oxidation Processes
 - LOCAT/SulFerox
 - Stretford
 - Others

Day 5:

Tail Gas

- SCOT
- CBA/Sulreen/MCRC/Others

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods

- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

المركز العالمي للتدريب والتطوير
International Centre For Training & Development