

## Refinery Safety Overview Syllabus

**Time:** 8 hours

**Maximum Class Size:** 20

**Expiration: 3 Years**

**Prerequisites:** None

**Course Description:** Working safety in a refinery is the primary goal of the Refinery Safety Overview course. This 8-hour awareness-level class addresses the safety principles associated with working in a facility where many hazards are present. This course focuses on these topics: Personnel Requirements for Refineries, Hazard Communication, Emergency Action Plans, Toxicology, Personal Protective Equipment for working in a refinery, Respiratory Protection, Hearing Safety, Lockout/Tagout, Confined Space, Prevention of Heat Illness, Refinery Safe Work Practices, Refinery Process Overview and Process Safety Management, Hazard Management/Risk Tolerance, Stop-Work Authority, and Permitting Practices.

**Potential Course Hazards:** Silica, H<sub>2</sub>S, Chemical exposure, Confined Space, Covid 19 and its Variants.

### Physical requirements:

- Able to perform work using a respirator.
- Able to work in high heat areas.
- Ability to push, pull, lift 60- 80lbs.
- Able to climb ladder steps.

### Goals/Objectives/Student Learning Outcomes:

Upon completion of this 8-hour course, the participant will be able to:

1. Describe 3 – 4 methods to avoid Heat Illness
2. List 3 – 5 personal requirements for working in a refinery
3. Describe 1 – 2 employer requirements found in the Haz Com Standard
4. Explain the acronym: SDS
5. Explain the number of required sections in an SDS
6. Describe at least one way to know what PPE is required when working with or around asbestos, benzene, and H<sub>2</sub>S
7. Describe at least one health hazard associated with asbestos, lead, benzene, H<sub>2</sub>S
8. List the elements that must be included in an Emergency Action Plan (EAP)
9. Describe what Process Safety Management is and why it was created.
10. List 4 – 6 basic PPE items every refinery worker must have
11. Describe the Action Level, and PEL level for Hearing Safety

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12. Describe 1 – 2 requirements found in the Respiratory Protection Standard
13. Explain the difference between LOTO, and Block Out
14. Define the term Authorized Employee with regards to LOTO
15. Identify the three characteristics of a confined space
16. List 2 – 3 atmospheric hazards found in confined spaces
17. List 2 – 3 physical hazards found in confined spaces
18. Describe 2 – 3 Safe Work Practices that are specific to refineries
19. Learn the basics of *Permit to Work*
20. Explain the meaning of *Stop Work Authority*

### Standards Addressed

- OSHA 29 CFR 1926.28: Personal Protective Equipment
- General Industry Safety Order 5189.1: Process Safety Management for Oil Refineries
- General Industry Safety Order 3314: Control of Hazardous Energy

### Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

### Textbooks/Readings/Training Materials

- *LTS Refinery Safety Overview Student Handout Packet*
- *LTS Refinery Safety Overview Student Handout Packet Instructor Version*
- *IT1: Cal/OSHA Heat Illness Video*
- *IT2: Sample Refinery Process Overview Handout*
- *IT3: Process Safety Management Video*
- *IT4: Noise Induced Hearing Loss Video*
- *IT5: SDS Samples Packet -or-*
  - *IT6: SDS Sample Lead Metal*
  - *IT7: SDS Sample Asbestos, Chrysotile*
  - *IT8: SDS Sample Crude Oil Sweet*
  - *IT9: SDS Sample Hydrogen Sulfide*
  - *IT10: SDS Sample Benzene*
  - *IT11: SDS Sample Crude Oil*

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- IT12: *Refinery Process Safety Overview Video*
- IT13: *OSHA Hazard Communication Standard: Safety Data Sheets*
- IT14: *OSHA Hazard Communication Standard: Labels and Pictograms*
- Samples of PPE used in a refinery: Safety harnesses, correct and incorrect lanyards
- Flipchart
- Dry erase markers
- Blank paper
- Pens

**Personal Protective Equipment:** None necessary for classroom training

### Course Requirements

To receive credit for the course, participants must:

- Be present for full eight hours
- Participate in all classroom exercises

### Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment

### Assessment and Grading

To receive credit for the course, participants must:

- Exit exam are graded pass/fail and must be passed with a score of 80% or above.

### Safety

Failure to maintain and use PPE may result in dismissal from the course.