
Fuel Cell Standards

XIV Hydrogen Safety and PPE

XIV.b Hydrogen Personal Safety

Overview:

Classroom and lab topics

- Basic properties of hydrogen
- Hydrogen flame characteristics
- Safe work practices using hydrogen
- Fire and explosion risk factors
- High pressure risk factors
- Hydrogen passive and active detection
- Signage and safety perimeters

Description:

When performing maintenance, service, or diagnostic on hydrogen fuel cell systems, Students will need to practice personal hydrogen safety. Students also need to understand the properties of hydrogen including, dispersion, flammability, flame emissivity and hydrogen detection to ensure a safe working environment.

Outcome (Goal):

Students interfacing with hydrogen fuel cell systems need a rigorous understanding and be able to articulate hydrogen properties and safety considerations. Students will also be required to use approved hydrogen safety protocols to setup and maintain a safe work environment



Objectives:

Students shall be able to:

1. Explain the basic properties of hydrogen
 2. Describe hydrogen flame characteristics
 3. Use safe work practices
 4. Summarize fire and explosion risk factors
 5. Explain high pressure risk factors
 6. Articulate hydrogen passive and active detection
 7. Define signage and safety perimeters
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Tasks:

Students will

1. Demonstrate properties of hydrogen using hydrogen fuel cell models
 2. Demonstrate hydrogen flame characteristics using hydrogen model electrolyzer
 3. Demonstrate the use of safe hydrogen work practices to set up and maintain a work area using signage and an appropriate safety perimeter
 4. Evaluate the work area for risk factors
 5. Explain high pressure risk factors
 6. Summarize the differences between passive and active hydrogen detection
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