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# **RESPIRATORY PROTECTION AWARENESS TRAINING**

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# Topics

- Awareness of OSHA and Purdue Policy
- Use Determination and Evaluation
- Types of Respirators

# OSHA Respiratory Protection Standard – 29 CFR 1910.134

- Prevent contamination and occupational disease by using engineering controls
- When engineering controls are not feasible, use appropriate respirators and establish a respiratory protection program

# Is Respiratory Protection Necessary?

- Hazard Assessment

- Evaluate:

- The nature of the hazard and work operation or process
    - Physical and chemical properties of the contaminant
    - Potential exposure levels (through sampling)

- These factors can be utilized to determine if respiratory protection is needed and, if needed, can help determine the type of respirator

# Types of Respirators

- Two Major Classifications of Respirators:
  - Air Purifying Respirators
  - Atmosphere Supplying Respirators

# Air Purifying Respirators

- Utilize filters, canisters, or cartridges to remove contaminants (particulates, gases, and/or vapors) from the atmosphere
- Types include:
  - Dust or Particulate Respirators (N95)
  - Half Mask or Full-face Respirators
  - Powered Air-Purifying Respirators (PAPR)

# Air-Purifying Respirators



N-95 Mask



Full-Face Respirator



Powered Air Purifying Respirator (PAPR)

# Atmosphere Supplying Respirators

- These respirators provide breathing air (Class D) from a source independent of the surrounding atmosphere.
- Types include:
  - Supplied Air Respirators (SAR) or Air-Line Respirators
  - Self-Contained Breathing Apparatus (SCBA)



# Atmosphere Supplying Respirators



Self Contained Breathing Apparatus (SCBA)



Supplied Air or Airline Respirator

# Steps for Entering the RPP (Mandatory Use)

- Hazard Assessment
- Medical Evaluation
- Purchase
- Respirator Fit Test
- Use

# Medical Evaluation

- Performed prior to wearing a respirator.
- Include a medical history questionnaire, physical examination, and spirometry.
- Following the medical evaluation EHS will receive a written recommendation regarding the employee's ability to wear a respirator from a physician.

# Fit Tests

- The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.
- Two Major Types of Fit Tests:
  - Qualitative
  - Quantitative

# Qualitative Fit Test

- A subjective method that relies on response to a sensation (taste, irritation, smell)
- Different chemicals can be used
  - Saccharin
  - Bitrex™
  - Isoamyl Acetate (banana oil)



# Quantitative Fit Test

- Objective method that utilizes instrumentation to measure faceseal leakage and generates a numerical fit factor.



# Important Policy Points

- Only respiratory protective equipment approved by NIOSH shall be purchased or utilized.
- Negative pressure respirators shall not be worn when conditions (beard, side burns, glasses) prevent a good face seal.
- Departments bear the cost of respirators
- When employees voluntarily choose to wear N95 respirators (dust masks or filtering facepieces) they must read and sign Appendix VIII of the written program.

# Proper Donning of Respirator

- 1) Place the respirator over your nose and mouth
- 2) Pull the bottom strap over your head until it rests below the ears at the back of your neck
- 3) Pull the strap over your head until it rests on the crown of your head above your ears
- 4) Without removing the respirator, adjust the straps until the respirator is secure. To tighten the respirator, gently pull the ends of both straps
- 5) Using both hands starting at the top, press down on all sides of the respirator where it touches your face to ensure a tight seal



# Questions?

- If you need help.... Please contact EHS

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