

Mount Holyoke College

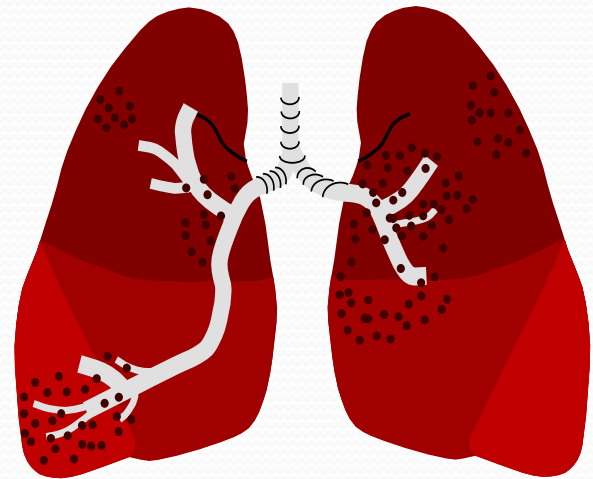
**Respirator Use and Care**

# Respiratory Protection Program

- Medical Evaluation
  - Questionnaire
  - Exams
- Fit Testing
  - Annual
  - Size and brand specific
  - Clean Shaven
- Training
  - Choosing a respirator
  - Inspection
  - Donning
  - Cleaning and storage
- Workplace Surveillance
  - Engineering controls
  - Other Personal Protective Equipment
  - Other hazards

# Respiratory Hazards

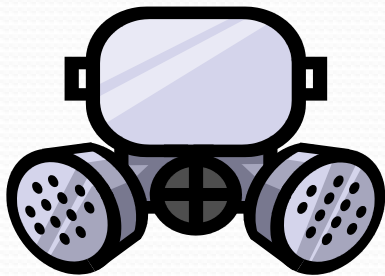
- Toxic
  - Dusts, fumes, and mists
  - Gases and vapors
  - Based on OSHA PELs
- Oxygen deficiency
- Immediately Dangerous to Life and Health (IDLH)



# Types of Respirators

## AIR PURIFYING

- Dust Mask
- Half Face
- Full Face
- Powered air-purifying respirator



## SUPPLIED AIR

- Self-contained breathing apparatus (SCBA)
- Air-line



# Air Purifying Respirator Limitations

- For gases and vapors chemical must have warning properties
- Oxygen level in atmosphere must be between 19.5% and 21%
- Cannot be used in IDLH atmospheres
- Will only work with correct filters or cartridges
- Limited contaminant concentrations

Limited contaminant concentrations

## General Protection Factors (PF)

|           |     |
|-----------|-----|
| Dust      | 5   |
| Half Face | 10  |
| Full Face | 50  |
| PAPR      | 100 |

## Maximum Use Concentrations (MUC)

OSHA PEL x PF = MUC

# Particulate Respirators

- **Filter Efficiency**

- 95%
- 99%
- 99.97%

- **Oil Resistance**

- N (not resistant)
- R (resistant)
- P (oil proof)



# Respirator Cartridges

- P100 Filter (particulates)
- Organic Vapor
- Organic Vapor/Acid Gas
- Acid Gas
- Ammonia/Methylamine
- Multi-Contaminant
- Metallic Mercury/Chlorine
- Pre-filters



# Cartridge Service Life

Depends on:

- Contaminant concentration
- Breathing Rate
- Humidity
- Temperature

Replace when:

- Breathing becomes difficult
- Contaminant breakthrough
- Visible deterioration
- After 8 hours of use
- At least monthly



# Donning

- **Inspection**
- **Negative pressure test:** cover cartridges and inhale for 10 seconds; face piece should collapse slightly
- **Positive pressure test:** cover the exhalation valve and exhale gently; a slight positive pressure should build up in the mask
- If any air movement is detected the test failed, you must refit the mask and start again



# Inspection

- Check face piece for damage and pliability
- Check straps for damage and elasticity
- Check filters for deterioration, dirt
- Check valves for tears and pliability
- Confirm correct filter type



# Storage

- Stored in sealed container
- Away from contaminants
- Away from heat, cold, and moisture



# Cleaning

- Remove cartridges, filters, valves and straps
- Wash face-piece and accessories (not cartridges)
- Rinse with clean water
- Air dry or wipe with clean cloth
- Inspect and reassemble



# PortaCount Fit Testing

- Quantitative
- Measures microscopic particles outside and inside mask
- Exercises
- No facial hair around seal
- No smoking 1 hour before test



# Questions

- Ask your supervisor
- Contact Environmental Health & Safety
  - [env-health-safety@mtholyoke.edu](mailto:env-health-safety@mtholyoke.edu)
  - 538-2529