



Personal Protective Equipment Respiratory Protection

OTCO 2019

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OSHA Office of Training and Education



Agenda

- ▶ OSHA Requirements
- ▶ How respirators work
- ▶ Using them correctly
- ▶ Safety Rules
- ▶ Quiz



29 CFR 1910.134

OSHA says...

- ▶ Assign to individuals
- ▶ Clean between uses
- ▶ Storage
- ▶ Inspection
- ▶ Monitor the wearer
- ▶ Fit
- ▶ Fit test



Respiratory Hazards

Toxic Atmospheres

- ▶ Gases
- ▶ Vapors
- ▶ Mists
- ▶ Smoke
- ▶ Fumes
- ▶ Dusts

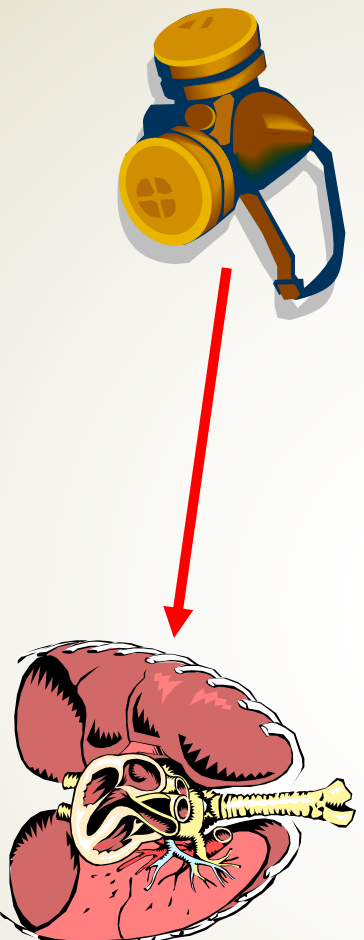
Oxygen Deficiency

- ▶ <19.5% oxygen



How Dust Masks and Cartridge Respirators Work

- ▶ Keep dust and chemicals out of your lungs.
- ▶ Air is sucked through the cartridge.
- ▶ The cartridge traps the contaminants.





Dust Masks

- ▶ Filter the Air
- ▶ Discard when dirty or hard to breathe through





Air Purifying Respirators

- ▶ Purify the air
- ▶ Keep them clean
- ▶ Store them right





Supplied Air

- ▶ Extensive training
- ▶ Physically fit
- ▶ For high or unknown concentrations or chemicals





Assigned Protection Factor

APF	Respirator
5	Filtering facepiece (single use dust)
10	Half-facepiece respirator with vapor cartridge or filter
50	Full-facepiece respirator with vapor cartridge or filter
1 000	Full-facepiece supplied air respirator operated in pressure-demand mode.
1 000 to 10,000	Full-facepiece self-contained breathing apparatus operated in pressure-demand mode





OSHA rules for Voluntary Respirator Use 29 CFR 1910.134 Appendix D





Fact 1

- ▶ Respirators are an effective method of protection against designated hazards when properly selected and worn.

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Fact 2

- ▶ Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers.

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Fact 3

- ▶ However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker.





Fact 4

- ▶ Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards.

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Fact 5

- ▶ If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

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You should do the following:



1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.





You should do the following:

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

NIOSH

 **OSHA**[®]



You should do the following:

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.



A green arrow pointing to the right, containing a white icon of a hand holding a green box with a white cross, symbolizing safety or health.

You should do the following:

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.



Safety Rule No. 1

- ▶ Make sure it fits and you are fit
- ▶ A doctor can disqualify anyone from wearing a respirator





Safety Rule No. 2

- ▶ Read SDS
- ▶ Match the hazard and the cartridge



<http://www.cdc.gov/nasdl/docs/d000801-d000900/d000894/d000894.html>



Safety Rule No. 3

- ▶ Don't use cartridge respirators
- ▶ In heavy contamination
- ▶ When chemical has no warning properties
- ▶ Oxygen deficiency
- ▶ Carbon monoxide





Safety Rule No. 4

- ▶ No hair across seal surface
- ▶ No beards
- ▶ No bangs
- ▶ Keep clean-shaven
- ▶ Facial hair - OK for positive pressure loose fitting hoods





Safety Rule No. 5

- ▶ Clean, inspect each time worn, then
- ▶ Do seal check



What is he checking?

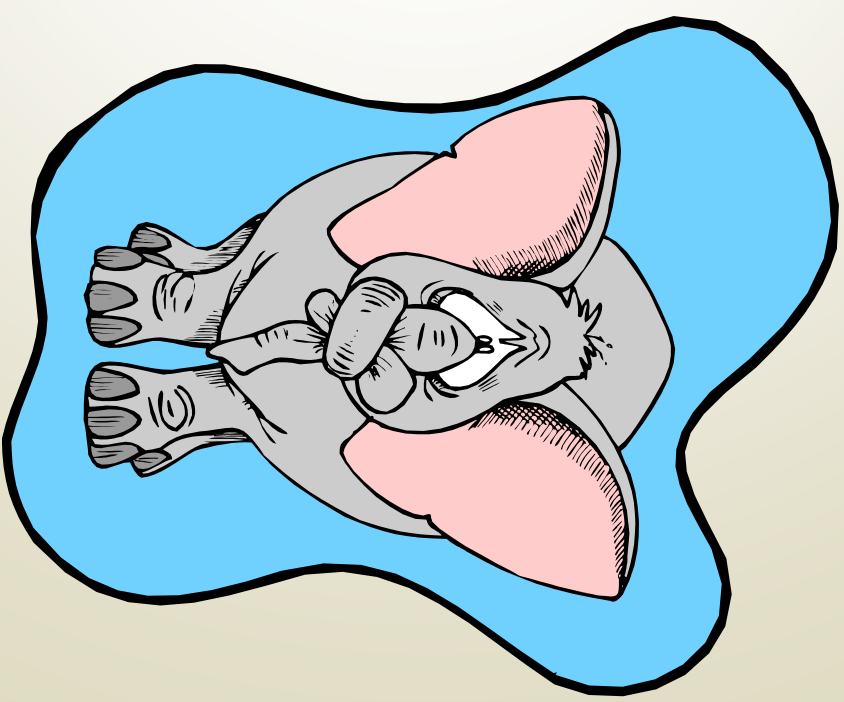


And this check?



Safety Rule No. 6

- ▶ If you smell or taste a contaminant, **GET OUT** of area and replace filters!





Safety Rule No. 7

- ▶ Inspect
- ▶ Keep it clean
- ▶ Wash with warm, soapy water
- ▶ Dry thoroughly
- ▶ Disinfect with non-alcohol wipes





Safety Rule No. 8

- ▶ Store dry and seal in plastic bag
- ▶ Store contaminated filters
SEPARATELY
- ▶ Away from
 - ▶ Dust
 - ▶ Contamination
 - ▶ Sunlight
 - ▶ Temperature extremes
 - ▶ Excessive moisture
 - ▶ Chemicals





Remember

- ▶ Know the hazard and concentration
- ▶ Make sure it fits
- ▶ Physical demands on the wearer



Quiz



My employer can forbid me to wear a respirator.

True or False?

False



A respirator can create a hazard to the wearer.

True or False? True



If I want to voluntarily wear a dust mask, OSHA requires that I have a medical examination.

True or False?

False



After a medical examination, a physician can disqualify me from voluntarily wearing a dust mask.

True or False? True

Which respirator provides the most protection?



1. Dust
Mask



2. Half
Mask



3. Full
Face



4. SCBA

Which respirator is easiest to breathe through?



1. Dust
Mask



2. Half
Mask



3. Full
Face



4. SCBA

Which respirator should be used if I have no idea about the air contaminant?



1. Dust
Mask



2. Half
Mask



3. Full
Face



4. SCBA

Which respirator should be used when the air is contaminated with a chlorine gas cloud?



1. Dust
Mask



2. Half
Mask



3. Full
Face



4. SCBA

Which respirator can be used when you have a low oxygen concentration?



1. Dust
Mast



2. Half
Mask



3. Full
Face



4. SCBA

Which respirators protect you from dust only?



1. Dust
Mask



2. Half
Mask



3. Full
Face



4. SCBA



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