



# Respirators-N95

## COVID-19

The Department of Safety and Professional Services

March 27, 2020

# Objectives



Train the Trainer –use the Notes view  
to see the included commentary



Provide information on N95 or  
similar type respirators



Written respiratory protection program



Medical Evaluation - questionnaire



Training



Fit Testing



Seal check (Fit check) before each use

Respirators  
Require:

# Written Program

- Include selection, medical fitness, maintenance, training, fit testing, use, program evaluation, etc.
- Why? To ensure the respirator wearer is safely using the proper respirator and has a written resource for reference.
- The program evaluation facet allows for continuous improvements or changes to be made, as necessary, to maintain a protective program.
- [Template Written Respiratory Protection Program](#) provides a basic template that needs to be modified to reflect your program/practices

# Recordkeeping



Retains records of medical evaluations



Retains fit testing records



Retains a copy of the current respiratory protection program



Provides access to the above records by affected employees and government agencies

# Medical Evaluation- Questionnaire

- Employees need to be medically cleared to wear respirators prior to use
- Respirators restrict breathing which can put a strain on your heart or lungs and can also cause claustrophobia for some people
- A physician or other licensed health care professional operating within the scope of his/her practice needs to medically evaluate employees to determine under what conditions they can safely wear respirators.
- Employees are required to complete OSHA's [Respirator Medical Evaluation Questionnaire](#) found in Appendix C of 29 CFR 1910.134

# Training

- Why the respirator is necessary
- Consequences of improper fit, use or maintenance
- Limitations and capabilities of the respirator
- How to inspect, put on, remove, use and check the seals of the respirator
- Maintenance and storage procedures
- General requirements of the Respiratory Protection standard
- Medical signs and symptoms that may limit or prevent effective use of the respirator
- Workplace specific training
- Training prior to employee use of a respirator

## **Retraining as specified below:**

- Annually
- Upon changes in workplace conditions that affect respirator use
- When knowledge and skills for respirator use are not retained by the employee
- Whenever retraining appears necessary to ensure safe respirator use

[OSHA "Respiratory Protection in General Industry"](#), 10-minute video that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees

# Respiratory Protection

- Protects against inhalation of harmful materials
  - Protection is based on the type of respirator selected and the type of cartridges/filters if applicable
  - Protection is also based on the respirator being worn as instructed by the manufacturer
    - Initial fit testing to ensure ability to obtain a face “seal”
    - User seal check (fit check) every time before use to ensure a face seal
- Tight fitting respirators require the user to be clean shaven for the area where the respirator forms a seal; facial hair and hair styles must not interfere with the respirator sealing area and/or inhalation or exhalation valves if applicable



# Respirator vs. Mask



**N95 Respirator**

## Respirator - N95

- Evaluated, tested and approved by NIOSH
- Reduces wearer's exposure to particles including small particle aerosols and large droplets
- Tight fitting face seal
- Fit testing required
- User seal check required each time respirator is put on
- Filters out at least 95% of airborne particles including large and small particles
- When properly fitted and worn, minimal leakage occurs around respirator edges when user inhales
- Single use, or replacement if damaged, deformed or soiled



**Surgical Mask**

## Mask

- Cleared by the U.S. Food and Drug Administration
- Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions.
- Loose-fitting
- No fit test required
- No user seal check required
- Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection
- Leakage occurs around the edge of the mask when the user inhales
- Disposable

# Particulate Respirator Options

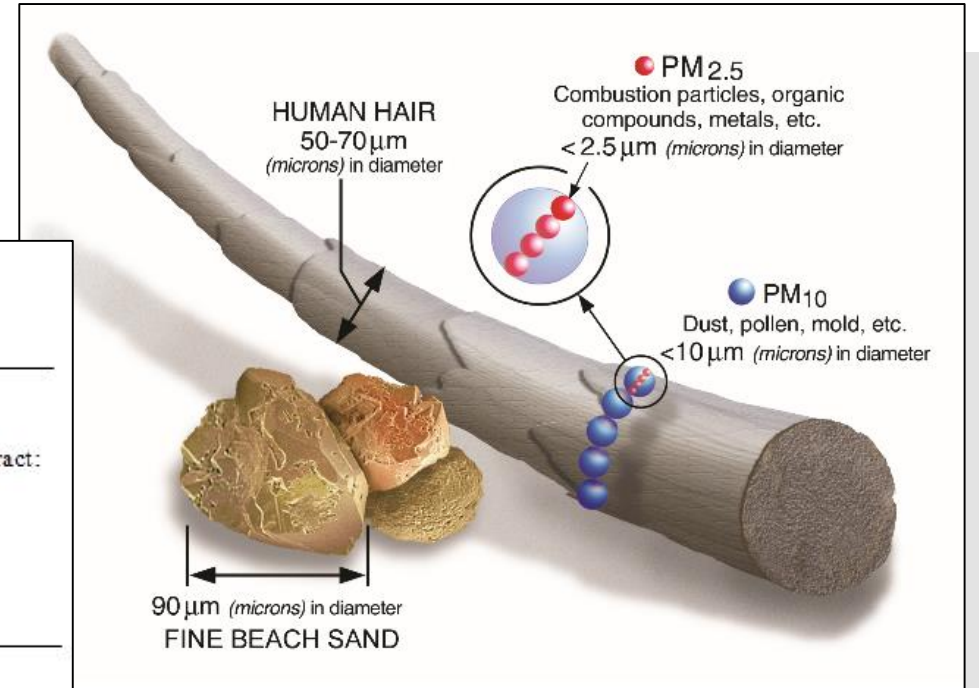
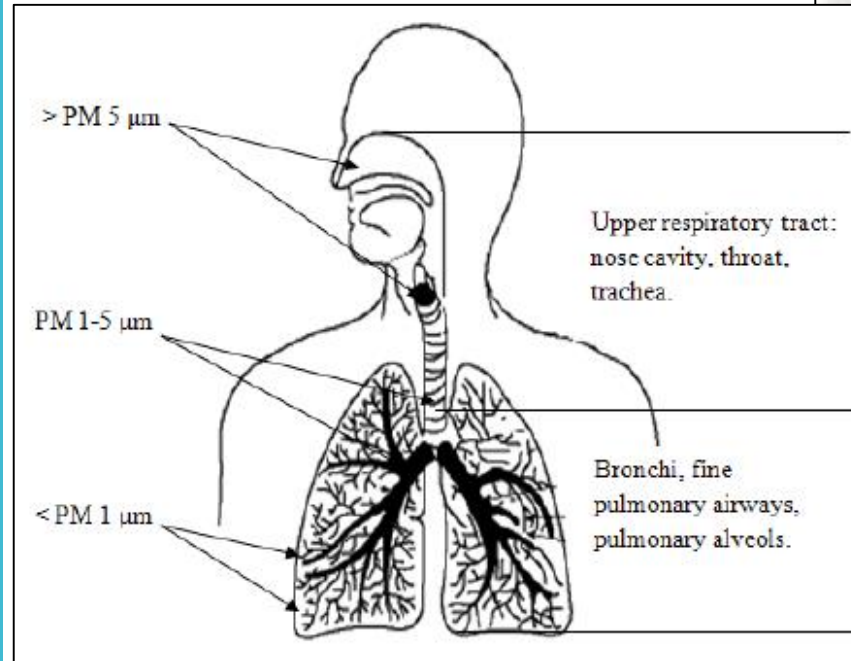
Percentage of 0.3  $\mu\text{m}$   
airborne particles  
filtered out

- 95
- 99
- 100

Resistance to Oil

- **N** – not resistant to oil
- **R** – somewhat resistant to oil
- **P** – strongly resistant to oil

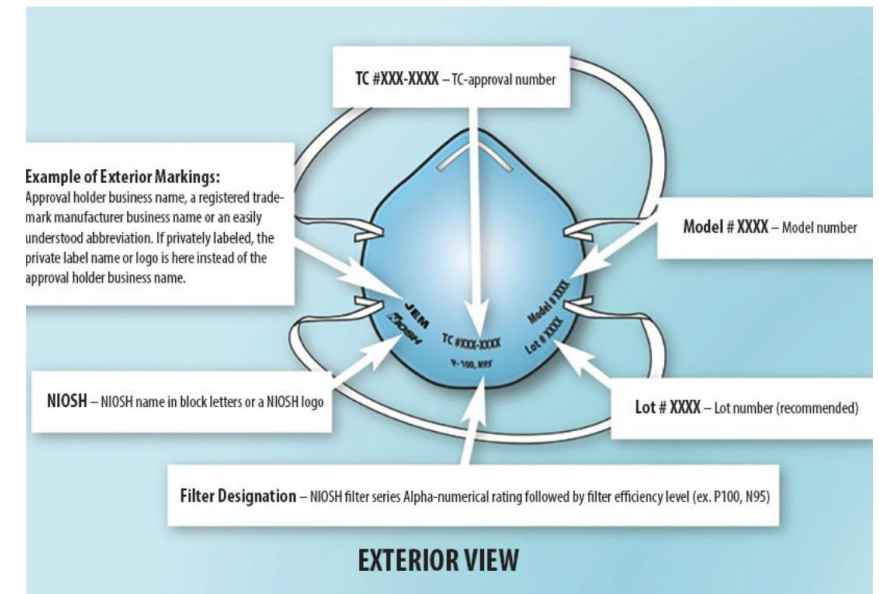
0.3  $\mu\text{m}$ ??



Particles ranging from 0.3 to 0.9 micron present the greatest health concern because they are small enough to get past the tiny hairs that line our breathing passages and are too large to be easily exhaled.

# Respirators:

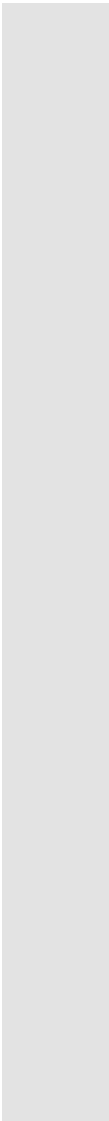
- Must be NIOSH certified,
  - Due to shortages, some alternative certifications are being referenced by NIOSH
- Beware of fraudulent respirators





## Key Points About Respirators

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- Put on before potential incident
  - Must be clean shaven, nothing to interfere with the seal
  - Remove and discard carefully, contaminated PPE is a source of exposure to you
  - Immediately wash your hands and/or body parts as applicable to your situation
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## Key Points, cont.

- Use the same model/size respirator that you have been fit tested for
- Follow Manufacturer's instructions for putting on
- Perform a user seal check (fit check) EVERY TIME you put on the respirator
  - The respirator manufacturer's instructions will tell you how to perform this check

**Fitting Instructions: Must be followed each time respirator is worn.**



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.
2. Position the respirator under your chin with the nosepiece up. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears. Make certain hair, facial hair, jewelry and clothing are not between your face and the respirator as they will interfere with fit.
3. Place your fingertips from both hands at the top of the metal nosepiece. Using two hands, mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece.  
**⚠️** Pinching the nosepiece using one hand may result in improper fit and less effective respirator performance (Use two hands).
4. Perform a User Seal Check. To check the respirator-to-face seal, place both hands completely over the respirator and exhale. Be careful not to disturb the position of the respirator. If air leaks around nose, readjust the nosepiece as described in step 3. If air leaks around the respirator edges, adjust position of straps and make certain respirator edges fit snugly against the face. **If you CANNOT achieve a proper seal, DO NOT enter the contaminated area. See your supervisor.**

# 3M

## Health Care Particulate Respirator and Surgical Mask 1860/1860S

### *User Instructions*

**IMPORTANT:** Keep these *User Instructions* for reference.

### **⚠️ WARNING**

This respirator helps protect against certain particulate contaminants but does not eliminate exposure to or the risk of contracting any disease or infection. **Misuse may result in sickness or death.** For proper use, see supervisor, or *User Instructions*, or call 3M Health Care Helpline at 1-800-228-3957. In Canada, call 3M Helpline at 1-800-563-2921.

# Respirator Fit Test vs. User Seal Check

## Fit Testing Is Performed:

- After medical clearance and training
- Before respirator is used in the field
- Annually
- Whenever:
  - Weight gain/loss
  - Facial scarring
  - Dental changes
  - Cosmetic surgery

## User Seal Check (Fit Check) Is Performed By The User

- Every time respirator is worn
  - The respirator manufacturer's instructions will tell you how to perform this check

[OSHA Respiratory Fit Testing](#), 12-minute video on fit testing that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees



- OSHA Protocols must be used, [§1910.134 Appendix A](#)
- Qualitative and Quantitative methods

Fit Testing

# Examples of Qualitative Fit Testing Products

- [3M Quick Reference Guide: Qualitative Fit Testing](#), if you are using another brand of a fit testing kit, you must refer to that manufacturer's fit testing kit instructions
- [Moldex Qualitative Fit Test Kit](#)

# Removing Your Personal Protective Equipment (PPE)

## Contaminated and Clean Areas of PPE

### Contaminated – Outside Front

- Areas of PPE that have or are likely to have been in contact with body sites, materials or environmental surfaces where the infectious organism may reside

### Clean - Inside

- Areas of PPE that are not likely to have been in contact with the harmful agent

## Example Order of Removing PPE

1. Coveralls
2. Gloves  
**Wash Hands**
3. Face Shield/Eye Protection
4. Respirator  
**Wash Hands**



Outside of area



Ensure that hand washing facilities are available at point of removal

If you are wearing your PPE in the field, bring a bag with you to place your used PPE into for later proper disposal

## If Hand Washing Facilities Are Not Available

- If soap and water are not readily available and illicit drugs or other chemical substances are NOT suspected to be present, use an alcohol-based hand sanitizer with at least 60% alcohol

## Removing Respirator

- DO NOT TOUCH the front of the respirator – it may be contaminated



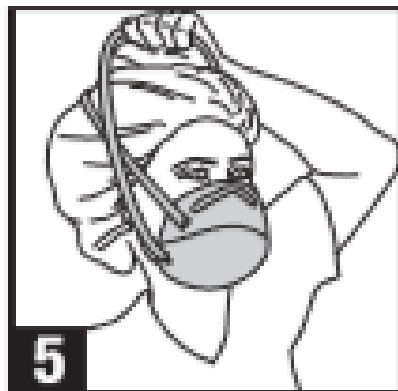


## Removing Respirator, cont.

- Without touching the respirator - Remove by pulling the bottom strap over the back of your head, followed by the top strap
- Discard respirator
- **WASH YOUR HANDS**



## Removal Instructions:



1. Without touching the respirator, *slowly* lift the bottom strap from around your neck up and over your head. Then lift off the top strap. Store or discard according to your facility's infection control policy. Dispose of used product in accordance with applicable regulations.

## Storage Conditions and Shelf Life:

Before use, store respirators in the original packaging, away from contaminated areas, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals. When stored in original packaging between temperatures from -4°F (-20°C) to +86°F (+30°C) and not exceeding 80% RH, the product may be used until the date specified on packaging located next to the "Use by Date" symbol.

# Hand Hygiene

- Perform hand hygiene immediately after removing PPE
  - If hands become visibly contaminated during PPE removal, wash hands before continuing to remove PPE
- You keep on hearing about hand hygiene because it's such an important step

# Resources

- [CDC/NIOSH - Understanding the Difference Between Surgical Masks and N95 Respirators](#)
- [CDC/NIOSH - Required Labeling of NIOSH-Approved N95 Filtering Facepiece Respirators](#)
- [Respiratory Protection Checklists](#), provides checklists for the different aspects of a respiratory protection program
- [OSHA "Respiratory Protection in General Industry"](#), 10-minute video that can be used to provide basic respiratory protection training – [workplace specific training must also be provided to employees](#)
- [OSHA Respiratory Fit Testing](#), 12-minute video on fit testing that can be used to provide basic respiratory protection training – [workplace specific training must also be provided to employees](#)
- [OSHA's Respiratory Protection Safety and Health Topics](#) web page has additional training videos and general guidance on respiratory protection

# Questions?

[DSPSSBHealthandSafetyTech@wi.gov](mailto:DSPSSBHealthandSafetyTech@wi.gov)

Or contact your District Occupational Safety and Health Inspector:

[Public Sector District Safety Inspectors](#)

