DIY Respiratory Protection Program

Easier, Cheaper, Faster!
Many Respirator Uses

- Mix or apply fertilizers and pesticides
- Working with paints or solvents
- Cleaning grain bins, corn silage, silos
- Handling moldy hay or grain
- Working in confined animal facilities
- Cleaning up bird or rodent droppings
- Asbestos, Silica and Lead
Respirator Rule Violations

• 71% of respirator violations were for:
  • No written respirator program.
  • No medical evaluations.
  • Employees not fit tested.
  • No training/maintenance
• Barriers to finding providers for medical clearances.
• Two separate visits for medical clearance and fit test
• Time… it may take a week or more to schedule appointments.
• Expensive-the exam + fit is $130 to $260 per user
• OSHA-three to six violations for lack of elements
• Reduces personal or company liability

WHY should I do this?
<table>
<thead>
<tr>
<th>Vendor</th>
<th>City</th>
<th>Total Cost of M/C and Fit testing</th>
<th>Questionnaire review</th>
<th>Spirometry</th>
<th>Medical exam</th>
<th>Fit test</th>
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<td>Norco</td>
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<td>Dr. Fulper/Health Options</td>
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<td>Bend</td>
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<td>$25</td>
<td>$90</td>
<td>$120w/ ?air</td>
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<td>$69</td>
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<td>The Dalles</td>
<td>$142-$197</td>
<td>$12</td>
<td>$55</td>
<td>$80</td>
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</table>
- Program- free customizable program
- Medical Clearance- $28 online
- Fit test- $4
- Training-time

- Estimate 4 to 6 hours for research and implementing the entire program elements.

DIY Cost $32/person
Elements of the Program

- Develop a written program;
- Assign a program administrator;
- Prepare work site-specific procedures;
- Select respirators based on the hazard(s) and the required protection;
- Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;
- Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators,
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.
The program must describe how to do the following:

- **Choose the right respirator for the hazardous environment or task.**
- **Provide medical evaluations for employees who will use respirators.**
- **Fit test employees who use tight-fitting respirators.**
- **Train employees to use respirators properly and recognize respiratory hazards.**
- **Ensure that respirators are properly cleaned, maintained, and stored.**
- **Establish a schedule for changing filters, cartridges, and canisters.**
- **Periodically review the program’s effectiveness.**

If you want a template for your respiratory protection program, just insert the CD that accompanies this publication and fill in the blanks to create a customized program that meets the needs of your workplace.

**Written Program** - It’s like a pesticide label, it is a guide for what and how to do it.
Write your program...

• http://www.orosha.org/publications/forms.html

For Division 4/Agricultural employers:

Customizable written respiratory protection program for employees required to wear respirators during normal work operations

Customizable written respiratory protection program for employees who choose to wear respirators

Medical evaluation questionnaire in English or Spanish
Elements of the Program

- Develop a written program;
- Assign a program administrator;
- **Prepare work site-specific procedures**;
- Select respirators based on the hazard(s) and the required protection;
- Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;
- Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators,
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.
Decide what are you using a Respirator for?

- Mix or apply fertilizers and pesticides
- Working with paints or solvents
- Cleaning grain bins, corn silage, silos
- Handling moldy hay or grain
- Working in confined animal facilities
- Cleaning up bird or rodent droppings
- Asbestos, Silica and Lead
Types of Respirators
• Supplied Air
• Tanks-compressors-
• Used in low oxygen or highly toxic environments

• Such as fumigants, confined spaces, clear coat paint

Respirator types
Respirator types

- Filters-Air purifying
- Used to filter: Dust, Vapors, Fume, Pesticides, Oils, Biological agents
• Paper filter-P/N-100’s

• Airborne Dust from field work, peat moss, lime, fertilizers, molds, animal droppings,

• Asbestos & Lead

Respirator Filter Selection
• Apply dry fertilizers
• Working with latex spray paints
• Cleaning grain bins, corn silage, silos
• Handling moldy hay or grain
• Working in confined animal facilities
• Cleaning up bird or rodent droppings
• Asbestos, Silica and Lead

Paper-Think Dust!
Filter Selections for VAPORS-PESTICIDES-GASES

- Black-Organic Vapor, paint, solvents, pesticides
- Green- Ammonia gas
- Yellow-Chlorine
- READ INSERT!!!
<table>
<thead>
<tr>
<th>Part No. 46000375</th>
<th>NIOSH Part No. 7583P100</th>
<th>NORTH Made in U.S.A.</th>
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1. PROTECTION

<table>
<thead>
<tr>
<th>P100 - Particulate Filter (99.97% filter efficiency level) effective against all particulate aerosols.</th>
<th>P95 - Particulate Filter (99% filter efficiency level) effective against all particulate aerosols.</th>
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<table>
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<tr>
<th>OV - Organic vapor</th>
<th>HC - Hydrogen chloride</th>
<th>CD - Chlorine dioxide</th>
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<tbody>
<tr>
<td>SD - Sulfur dioxide</td>
<td>CL - Chloride</td>
<td>HF - Hydrogen fluoride</td>
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2. CAUTIONS AND LIMITATIONS

- A - Not for use in atmospheres containing less than 19.5 percent oxygen.
- B - Not for use in atmospheres immediately dangerous to life or health.
- C - Do not exceed maximum use concentrations established by regulatory standards.
- H - Follow established cartridge and canister change schedules or observe ESU to ensure that cartridges and canisters are replaced before breakthrough occurs.
- I - Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.
- J - Failure to properly use and maintain this product could result in injury or death.
- K - The Occupational Safety and Health Administration regulations require gas-proof goggles to be worn with this respirator when used against formaldehyde.
- L - Follow the manufacturer's User's instructions for changing cartridges, canister and/or filters.
- M - All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.
- N - Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- O - Refer to users instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
- P - NIOSH does not evaluate respirators for use as surgical masks.
- S - Special or critical users instructions and/or specific use limitations apply. Refer to instruction manual before donning.
• A NIOSH approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A.

When and what filter do I use for pesticides? The label is the law!

• Tombstone Label
  Loveland Products, Inc.
When do you change?

- Breathing difficult (filters clogged)
- Break though smells-solvents
- Physical damage
- Manufacturer’s recommendations or pesticide label (more frequent)
- For Pesticides- if no instructions on label, discard at the end of the day.
Elements of the Program

- Develop a written program;
- Assign a program administrator;
- Prepare work site-specific procedures;
- Select respirators based on the hazard(s) and the required protection;
- **Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;**
- Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators;
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.
- Internet exam based sites
- Local occupational clinic
- Some hospitals

Medical Evaluations
- Initial use and as needed.
- For all types of respirators—even for voluntary use

Chose a medical provider
Online Respirator Medical Evaluations

3M facilitates a convenient method for employers to obtain medical evaluation of respirator wearers as required by the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

New Customers - 2 Free Evaluations*
Sign up, take the questionnaire, and get instant results with the 3M Online Respirator Medical Evaluation Service. It costs only $28 per person – and, there’s no minimum order or hidden costs. For a limited time, first time accounts can get 2 evaluations at no cost so you can see how convenient it is!

Get Started Today:

http://www.respexam.com
3M has 2 Free Evals!!!
• Local doctor will assess only the concern of online Dr.
• Offer a non-respirator use job to this employee.
• Do not hire the employee for this job.
• Evaluation reduces your liability for un-fit employees.

What if they don't pass?
- Develop a written program;
- Assign a program administrator;
- Prepare work site-specific procedures;
- Select respirators based on the hazard(s) and the required protection;
- Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;
- **Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;**
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators,
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.
Hooded test kit
Bitrex Respirator Fit Test Kit

The Bitrex® Fit Test Kit offers qualitative OSHA-compliant fit testing for disposable and reusable dust and mist respirators. Bitrex creates an unmistakable bitter taste that indicates break through in the respirator fit. Bitrex has been found safer than saccharin tests while producing identical results. Disposable glass ampules make pouring solution into nebulizers easier and reduces the chance of contamination.

Features:

- For testing the facepiece-to-face seal
- Fast, easy method for performing qualitative fit testing
- Use with any particulate respirator or any gas/vapor respirator with particulate prefilter
- Helps satisfy respiratory program requirements
- Can be used during respirator training programs
- Helps meet administrative respiratory protection training program regulations as specified in OSHA 29 CFR 1910.134
Respirator fit testing is accomplished in three simple steps with VeriFit Irritant Smoke Generators:

(1) Bend the smoke generator to break the enclosed ampoule.
(2) Remove cap.
(3) Wait 5 seconds and compress bellows.
Fit Testing Procedures
How often do you need to fit-test?

- Initially
- Annually
- Another type, style, model or make
Fit Test Demonstration
Selecting the right respirator

• Try on a couple masks for a rough fit.
• Look at chin and nose—is there a gap, is there enough room to wear safety glasses?
• No facial hair on sealing surfaces.
• Can they talk, breathe comfortably?
• Can they move face side to side, up and down without losing a seal?
• Positive and negative fit check.
What the rule says:

5. Irritant Smoke (Stannic Chloride) Protocol
   - This qualitative fit test uses a person’s response to the irritating chemicals released in the “smoke” produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.
   - (a) General Requirements and Precautions
     - (1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).
     - (2) Only stannic chloride smoke tubes shall be used for this protocol.
     - (3) No form of test enclosure or hood for the test subject shall be used.
     - (4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject’s exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.
     - (5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

What the rule means:

1. Use particulate respirators for test – NOT Organic Vapor
2. Smoke is irritating- tester stay back from smoke.
3. Go easy on the smoke when testing the wearer for sensitivity.
4. Stop as soon as they smell the smoke.
4. Use in a well ventilated but not windy area or room.

Fit testing
Irritant Smoke Fit Test Procedure

(1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the faceseal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask.

The operator shall gradually make two more passes around the perimeter of the mask, moving to within 6 inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in section I.A.14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of 6 inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.

(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.

• Have the person don the respirator.
• Have the person close their eyes
• Pass the smoke around the seal of the mask a couple revolutions.
• Follow the test procedures on Appendix A
• If they smell smoke, re-fit mask or try another size. Start over.
• After passing the test procedures- remove mask and see if they react to the smoke, if yes, the fit test is passed!
Fit Test Procedure

- Normal breathing
- Deep breathing
- Turning head side to side
- Raise head up and down
- Talking-read the rainbow passage/poem
- Bending over or jog in place
- If smoke is detected-adjust mask or try another size or brand.
- Check face seal, tighten straps.
- Test is passed when no odor is detected.
Free instruction/videos
# Respirator Fit Test Record

**Date:**

Fit testing conducted in compliance with OSHA Standard 1910.134(F). [ ]

If other local, state or federal regulations apply (such as MSHA), you may list them here:

**Name of Fit Tester:**

**Signature:**

**Type of OSHA accepted fit test protocol used:**
- [ ] (Qualitative): Saccharin
- [ ] (Qualitative): Bitrex™
- [ ] (Qualitative): Isoamyl Acetate
- [ ] (Qualitative): Irritant Smoke

- [ ] (Quantitative): Portacount Model #: 
- [ ] Occupational Health Dynamic Model #: 

<table>
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<tr>
<th>Name (please print)</th>
<th>Signature</th>
<th>Respirator Fit Tested (Make, Model, Style, Size)</th>
<th>Fit Test Pass</th>
<th>Fit Test Fail</th>
<th>Could not be fit tested due to:</th>
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</table>
Respiratory Fit Test  Date: 

Name: ID#: 

Company: 

was successfully fit tested in:

Manuf.: Model: S M L QLFT/QNFT
Manuf.: Model: S M L QLFT/QNFT
Manuf.: Model: S M L QLFT/QNFT

Fit Tester: 

You must be fit tested at least annually and if you change to a different respirator model. Conduct a User Seal Check each time the respirator is put on.

Prueba de ajuste del respirador  Fecha

Nombre Documento

Compañía 

Ha cumplido satisfactoriamente con el test de ajuste del respirador

Marca Modelo S M L Pr. Cual./Pr. Cuant.
Marca Modelo S M L Pr. Cual./Pr. Cuant.
Marca Modelo S M L Pr. Cual./Pr. Cuant.

Responsable del test 

Usted debe realizar la prueba de ajuste por lo menos una vez al año y además si cambia el modelo de respirador. Haga la verificación de ajuste cada vez que se lo coloque.

Wallet cards-for field use
Elements of the Program

- Develop a written program;
- Assign a program administrator;
- Prepare work site-specific procedures;
- Select respirators based on the hazard(s) and the required protection;
- Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;
- Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
- **Train employees on the usage, fit, maintenance, cleaning, and storage of respirators,**
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.
Training

- This respiratory protection program
- The Oregon OSHA respiratory protection standard, 1910.134
- Respiratory hazards and their health effects
- Selection and use of respirators
- Limitations of respirators
- How to put on respirators and perform user seal checks
- Fit testing
- Emergency procedures
- Maintenance and storage
- Medical signs and symptoms that limit the use of respirators
Fit check before each use!

- Positive pressure check: Put hand over exhalation valve and **exhale** gently. If there is pressure in the mask, it’s a good fit.
Fit check before each use!

- **Negative pressure check:** Cover cartridges with hands, *inhale* gently, and hold breath for 10 seconds. If the facepiece exhibits no leakage, the respirator fits properly.

- **Facial hair does not allow a respirator to seal!**
Cleaning Respirators

What the rule says:

1. Procedures for Cleaning Respirators
   A. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
   B. Wash components in warm (43 degrees C. [110 degrees F.] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
   C. Rinse components thoroughly in clean, warm (43 degrees C. [110 degrees F.] maximum), preferably running water. Drain.
   D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for 2 minutes in one of the following:
      1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 degrees C. (110 degrees F.); or,  
      2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45 percent alcohol) to one liter of water at 43 degrees C. (110 degrees F.); or,  
      3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
   E. Rinse components thoroughly in clean, warm (43 degrees C. [110 degrees F.] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
   F. Components should be hand-dried with a clean lint-free cloth or air-dried.

What the rule means:

- Take apart respirator
- Dispose filters
- Wash in warm water with a disinfecting cleaner.
- Rinse in clean warm water
- Hand dry and reassemble respirator
- Test it for function
- Store in a closed container
• Develop a written program;
• Assign a program administrator;
• Prepare work site-specific procedures;
• Select respirators based on the hazard(s) and the required protection;
• Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, (3) when required by the responses to the questionnaire, a follow-up medical examination;
• Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
• Train employees on the usage, fit, maintenance, cleaning, and storage of respirators,
• Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
• Perform periodic program evaluation to ensure effectiveness.
Provide replacement respirators
Provide replacement filters
Provide a place to clean respirator
Provide clean area to store respirators and supply's
Retrain annually on use and fit test.

Program support
Any Questions?
The air you breathe

Oregon OSHA’s respiratory protection guide for agricultural employers
Leilani Monson, RN
Oregon OSHA- Bend
541-388-6066
Leilani.monson@oregon.gov