

Sample Respiratory Program Template

Written Respiratory Protection Program Template & Guide



Sample Respiratory Program Template

Introduction

Respirators are used to protect employees from inhaling hazardous chemicals in the air. These chemicals can be in the form of gases, vapors, mists or dust. If you provide respirators to your employees to protect them from airborne chemical hazards, you must have a written respiratory protection program. The written program must spell out how you do the following at your workplace:

- How the proper respirators for the particular hazards are selected and issued (include a list of respirators used),
- When and how respirators will be used in routine work activities, infrequent activities, and foreseeable emergencies such as spill response, rescue or escape situations,
- How medical evaluations of respirator wearers is provided,
- How respirator fit-testing is done,
- How respirators in use are cleaned, stored, inspected and repaired or discarded,
- How sufficient high purity air is provided for air-supplied respirators (if you use them),
- How employees are trained about respiratory hazards at your workplace,
- How employees are trained on the proper use of the respirators used at your workplace,
- How you evaluate the effectiveness of your respiratory program.

The answers to the above “how” questions will depend on the unique conditions at your workplace. The information must be specific and reflect what you actually do or require to be done, not just what seems like the right thing to do. It must describe actual conditions and actions at your workplace.

To provide proper protection, respirators must be the right type, must be worn correctly at all times, and must be maintained properly. They are prone to leakage, depend on the correct behavior of individual employees and may require much maintenance and management oversight. This is why they are considered as a last resort to protect employees from airborne chemical hazards.

It is often more protective, less trouble, and even cheaper to eliminate or reduce the respiratory hazard through various ways like exhaust ventilation, changes in process, or enclosure of the process. Sometimes the use of a hazardous chemical itself can be eliminated. But, when there is no alternative, a respirator program must be implemented

Sample Respiratory Program Template

to protect your employees from adverse health effects of exposure to chemicals in the air above their permissible exposure limits.

Respirators are typically used in three different situations – routine or regular exposure to processes or activities involving chemicals, infrequent, but predictable occasions where there is chemical exposure, or emergencies where there is a chemical leak or spill. The written respiratory program must address all these situations if they occur or could occur at your facilities.

If you allow employees to wear respirators (either their own or those you provide), but don't require their use, see the Rule requirements on voluntary use of respirators.

NM Environmental Department OSHA requires that you designate one person as the "program administrator" who is responsible for the whole program. This person should be reasonably knowledgeable about chemical exposure, respirators and their uses and limitations and will need to keep track of respirator fit-testing, use, storage, cleaning and maintenance. Don't give this job to an untrained or unmotivated employee.

The following sample respirator program will meet the WISHA requirements for a written program if all the blanks are filled in and it reflects actual practices at your worksite.

By clicking on [underlined blue text](#), you can jump to the page containing the form or information indicated.

This sample respirator program can be edited on a computer. By filling in required information indicated in (red) in parenthesis or by the grey bar next to a line _____ and printing the sample program, you will be stating the actual practices and procedures at your workplace. Be sure to read the complete sample and make sure what is stated is what you actually do. Some attached forms must be filled in by hand.

Sample Respiratory Program Template

Respiratory Protection Program for (name of your company)

Our respirator program administrator is _____

Our administrator's duties are to oversee the development of the respiratory program and, make sure it is carried out at the workplace. The administrator will also evaluate the program regularly to make sure procedures are followed, respirator use is monitored and respirators continue to provide adequate protection when job conditions change.

Selection Of Respirators

We have evaluated our use of chemicals at this facility and found respirators must be used by employees in the following locations or positions or doing the following duties, tasks or activities:

Employee position or activity	Chemicals or products used	NIOSH approved respirators assigned	When used (routinely, infrequently, or in emergencies)

We selected these respirators based on the following information: [*optional: attach air sampling results that show where respirators are required*]

Sample Respiratory Program Template

Medical Evaluations

Every employee of this company who must wear a respirator will be provided with a medical evaluation before they are allowed to use the respirator. Our first step is to give the attached medical questionnaire to those employees. Employees are required to fill out the questionnaire in private and send or give them to (**name of your medical provider who will evaluate the questionnaire**). Our non-readers or non-English-reading employees will be assisted by (**name of person not in management**). Completed questionnaires are confidential and will be sent directly to medical provider without review by management.

If the medical questionnaire indicates to our medical provider that a further medical exam is required, this will be provided at no cost to our employees by (**name of medical provider doing medical exam**) We will get a recommendation from this medical provider on whether or not the employee is medically able to wear a respirator.

Additional medical evaluations will be done in the following situations:

- our medical provider recommends it,
- our respirator program administrator decides it is needed,
- an employee shows signs of breathing difficulty,
- changes in work conditions that increase employee physical stress (such as high temperatures or greater physical exertion).

Respirator Fit-testing

All employees who wear tight-fitting respirators will be fit-tested before using their respirator or given a new one. Fit-testing will be repeated annually. Fit-testing will also be done when a different respirator facepiece is chosen, when there is a physical change in an employee's face that would affect fit, or when our employees or medical provider notify us that the fit is unacceptable. No beards are allowed on wearers of tight-fitting respirators. Fit-testing is not required for loose-fitting, positive pressure (supplied air helmet or hood style) respirators. We do fit-testing using one or more of the following fit-testing protocols (*circle protocol you use*) or quantitative fit-testing instrument (*fill in*):

Irritant smoke protocol

Banana Oil (isoamyl acetate) protocol

Bitrex protocol

Saccharin protocol

The quantitative fit-testing instrument we use is:

Note: respirator vendors usually sell these instruments. While expensive, they can simplify fit-testing.

Sample Respiratory Program Template

Note: Click on the protocols above to view the several acceptable fit-testing procedures that come directly from the respiratory protection standard. It is your choice which procedure or fit-testing equipment to use. Some respirator vendors or occupational health clinics may do fit-testing for you.

Documentation of our fit-testing results is attached (or is kept at the following location)

[Click here](#) for a sample fit-test record form.

Our respirators will be checked for proper sealing by the user whenever the respirator is first put on, using the attached seal check procedures:

[Click here](#) for seal check procedures.

Respirator storage, cleaning, maintenance and repair

Our non-disposable respirators will be stored in the following clean locations:

Respirators will be cleaned and sanitized every (_____) days or whenever they are visibly dirty. (does not apply to paper dust masks which are disposed daily). Respirators will be cleaned according to the attached instructions (either the manufacturers instructions or the Respirators Rule cleaning procedures.)

For Rule-specified respirator cleaning procedures where you don't have manufacturers instructions, [click here](#).

All respirators will be inspected before and after every use and during cleaning. In addition, emergency respirators and self-contained tank-type supplied air respirators in storage will be inspected monthly.

Respirators will be inspected for damage, deterioration or improper functioning and repaired or replaced as needed. Repairs and adjustments are done by _____ who is trained in respirator maintenance and repair. Supplied air respirators will be checked for proper functioning of regulator and warning devices and amount of air in tanks where used.

When supplied air respirators are used, any needed repairs or adjustments will be done by the manufacturer or technician trained by the manufacturer. Our supplied air respirators are maintained and repaired by _____

On respirators with vapor or gas cartridges, the cartridges will be regularly replaced on the following schedule:

Check with respirator vendor for recommended replacement schedule for each brand and type of respirator.

Sample Respiratory Program Template

Type of respirator cartridge	Location or job duties	Chemicals in use	Replacement schedule

Respirator Use

The Program Administrator will monitor the work area in order to be aware of changing conditions where employees are using respirators.

Employees will not be allowed to wear respirators with tight-fitting facepieces if they have facial hair (e.g., stubble, bangs) absence of normally worn dentures, facial deformities (e.g., scars, deep skin creases, prominent cheekbones), or other facial features that interfere with the facepiece seal or valve function. Jewelry or headgear that projects under the facepiece seal is also not allowed.

If corrective glasses or other personal protective equipment is worn, it will not interfere with the seal of the facepiece to the face.

Note: Full-facepiece respirators can be provided with corrective glasses since corrective lenses can be mounted inside a full-facepiece respirator. Contact lenses can also be used with full facepiece respirators if they do not cause any problems for the employee.

A seal check will be performed every time a tight-fitting respirator is put on.

The program administrator will make sure that the NIOSH labels and color-coding on respirator filters and cartridges remain readable and intact during use.

Employees will leave the area where respirators are required for any of the following reasons:

- to replace filters or cartridges,
- when they smell or taste a chemical inside the respirator,
- when they notice a change in breathing resistance
- to adjust their respirator,
- to wash their faces or respirator,

Sample Respiratory Program Template

- if they become ill,
- if they experience dizziness, nausea, weakness, breathing difficulty, coughing, sneezing vomiting, fever or chills.

Respirator Training

Training is done by _____ before employees wear their respirators and annually thereafter as long as they wear respirators. Our supervisors or crew bosses who wear respirators or supervise employees who do, will also be trained on the same schedule.

Additional training will also be done when an employee uses a different type of respirator or workplace conditions affecting respiratory hazards or respirator use have changed.

Training will cover the following topics:

- Why the respirator is necessary,
- The respirator's capabilities and limitations,
- How improper fit, use or maintenance can make the respirator ineffective,
- How to properly inspect, put on, seal check, use, and remove the respirator,
- How to clean, repair and store the respirator or get it done by someone else,
- How to use a respirator in an emergency situation or when it fails,
- Medical symptoms that may limit or prevent respirator use,
- Our obligations under the Respirators Rule.

Our training program is attached.

[Click here](#) for sample respirator training record form.

Respiratory Program Evaluation

We evaluate our respiratory program for effectiveness by doing the following steps:

1. Checking results of fit-test results and health provider evaluations.
2. Talking with employees who wear respirators about their respirators – how they fit, do they feel they are adequately protecting them, do they notice any difficulties in breathing while wearing them, do they notice any odors while wearing them, etc.
3. Periodically checking employee job duties for changes in chemical exposure.
4. Periodically checking maintenance and storage of respirators.
5. Periodically checking how employees use their respirators.
6. Other _____

Sample Respiratory Program Template

Recordkeeping

The following records will be kept:

- A copy of this completed respirator program

- Employees' latest fit-testing results

- Employee training records

- Written recommendations from our medical provider

The records will be kept at the following location: _____

Employees will have access to these records.

End of Sample Program

The following pages are informational pages or forms you can use as attachments to the sample program. Links to these are provided in the sample program.

Sample Respiratory Program Template

How to Select the Correct Respirator

The type and brands of respirators vary widely ranging from simple dust masks to supplied air respirators like the kind firemen wear. Following is description of the main types of respirators. Note that all styles are not acceptable for protection against airborne viruses.



Dust Masks (filtering facepieces)

These simple, two-strap disposable dust masks are designed only for dusts. They are not as protective as other respirators, but do an adequate job in many cases, unless the dust is really toxic or copious. Don't confuse these two-strap masks with the less protective one-strap dust mask designed only for pollen or non-toxic dust.



Half-Face Air-Purifying Respirator

These respirators are sometimes called “half-face” or “half-mask” respirators since they cover just the nose and mouth. They have removable cartridges that filter out either dust, chemicals or both. Selecting the correct cartridges is essential since they are designed for particular types of chemicals or dust. A reputable respirator vendor can assist you in selecting the correct cartridges. These cartridges are typically removable and sometimes interchangeable.

Sample Respiratory Program Template

Cartridges are available for solvents, ammonia, chlorine, acids and other chemicals. The cartridges must be changed out or replaced periodically, especially for chemicals, since they can absorb only so much contaminant before breakthrough occurs. A few cartridges are equipped with end-of-service indicators that show when a cartridge should be replaced. Most cartridges don't have this indicator and you must develop a change-out schedule to prevent breakthrough. The change-out schedule is based on the chemical concentration, physical work effort, temperature and humidity. Many respirator manufacturers have cartridge change schedule calculators available on the Internet.



Full-Face Air-Purifying Respirator

In some situations, you may need or want to use full-face respirators. This type of respirator is used when the air contaminant irritates the eyes. They also provide somewhat higher protection to the lungs since they tend to fit tighter and are less prone to leaking. These respirators also have replaceable cartridges that must be changed on a regular basis as described above for half-face respirators.

Sample Respiratory Program Template



Powered Air Purifying Respirator (PAPR)

Powered Air Purifying Respirators have a battery pack that draws air through replaceable cartridges and blows into a full facepiece, helmet or hood. These respirators are often more comfortable in hot weather and some can provide more protection, depending on the type. The cartridges must be changed regularly as describe for half-face respirators above.



Airline Respirator



Tank-type respirator (SCBA)

Supplied Air Respirators and Self-Contained Breathing Apparatus (SCBA)

In a few situations, you may need to provide a supplied air respirator to your employees. These situations include large chemical spills or leaks, entering a confined space where there is lack of oxygen or high levels of air contaminants, or working around extremely toxic chemicals. They may also be necessary working at hazardous waste sites, during sandblasting or in some spray painting operations. "Supplied air," means that clean air is provided by means of an air hose from a compressor or a pressurized air tank.

Sample Respiratory Program Template

Supplied air respirators are required when a respiratory hazard is considered “immediately dangerous to life or health” (also called “IDLH”). Respiratory hazards are classified as IDLH as follows:

- There is a lack of oxygen (less than 19.5% oxygen)
- There is too much oxygen (more than 23.5% - a fire hazard)
- You know there are toxic chemicals in the air, but you don’t know how much
- The amount of chemical in the air is known or expected to be above the IDLH level for that chemical. See the [NIOSH Pocket Guide to Chemical Hazards](#) for chemical IDLH levels.

Levels of chemicals above IDLH can occur in confined spaces, or enclosed spaces where there is little or no ventilation.



Emergency Escape Respirators

Emergency escape respirators, as the name implies, can only be used for one thing – to escape or exit from a room or building in an emergency, usually a large chemical release, leak or spill, or when a supplied air respirator fails or runs out of air. An escape respirator is typically a small bottle or tank of air connected to a facepiece that supplies 5-10 minutes of air. Some supplied air respirators will have an auxiliary bottle of air for escape that connects to the existing facepiece.

How do you decide which type of respirator to select? First, it must be the correct type for the air contaminant. Second, it must fit properly. Third, it must provide adequate protection for the amount of chemical in the air. The more

Sample Respiratory Program Template

toxic or more concentrated the chemical is in the air, the higher the level of protection the respirator must provide.

Different respirators provide different protection. Depending on the amount of chemical in the air, you may need to use a respirator that provides more protection. Respirators are rated by their "assigned protection factor" (APF) which is a number between 10 and 10,000. The higher the number, the greater the protection. A respirator with a protection factor of 10 will provide adequate protection to levels of the chemical in the air 10 times the safe limit of that chemical. See Table 5 below.

Sample Respiratory Program Template

Table 5 Assigned Protection Factors (APF) for Respirator Types	
If the respirator is a(n)	Then the APF is
Air-purifying respirator with a: <ul style="list-style-type: none"> • Quarter-mask • Half-facepiece. This category includes filtering facepiece and elastomeric facepiece • Full-facepiece 	5 10 50
Powered air-purifying respirator (PAPR) with a: <ul style="list-style-type: none"> • Loose-fitting facepiece • Half-facepiece • Full-facepiece • Hood or helmet <p>Note: PAPRs with helmets/hoods may receive an APF of 1000 only when you have evidence that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater. Such evidence must be provided by the respirator manufacturer. This level of performance can best be demonstrated by performing a workplace protection factor (WPF) or simulated workplace protection factor (SWPF) study or equivalent testing.</p>	25 50 1000 25/1000 (see note)
Air-line respirator with a: <ul style="list-style-type: none"> • Half-facepiece and designed to operate in demand mode • Loose-fitting facepiece and designed to operate in continuous flow mode • Half-facepiece and designed to operate in continuous-flow mode • Half-facepiece and designed to operate in pressure-demand or other positive-pressure mode • Full-facepiece and designed to operate in demand mode. • Full-facepiece and designed to operate in continuous-flow mode • Full-facepiece and designed to operate in pressure-demand or other positive-pressure mode. • Helmet or hood and designed to operate in continuous-flow mode <p>Note: Air-line respirators with helmets/hoods designed to operate in continuous-flow mode may receive an APF of 1000 when you have evidence that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater. Such evidence must be provided by the respirator manufacturer. This level of performance can best be demonstrated by performing a workplace protection factor (WPF) or simulated workplace protection factor (SWPF) study or equivalent testing.</p>	10 25 50 50 50 1000 1000 25/1000 (see note)
Self-contained breathing apparatus (SCBA) with a tight fitting: <ul style="list-style-type: none"> • Half-facepiece and designed to operate in demand mode • Full facepiece and designed to operate in demand mode • Full-facepiece and designed to operate in pressure-demand mode or other positive pressure mode (e.g. open/closed circuit) • Helmet or hood and designed to operate in demand mode • Helmet or hood and designed to operate in pressure-demand or other positive-pressure mode (e.g., open/closed circuit). 	10 50 10,000 50 10,000
Combination respirators: <ul style="list-style-type: none"> • When using a combination respirator, such as an air-line respirator with an air-purifying filter, you must make sure the APF is appropriate to the mode of operation in which the respirator is used. 	
Escape respirators: <ul style="list-style-type: none"> • APFs in this table do not apply to respirators used solely for escape. To select escape respirators, go to Step 8 of this section. 	

Sample Respiratory Program Template

Use **Table 6** below to select air-purifying respirators for particle, vapor, or gas contaminants.

Table 6
Requirements for Selecting Air-purifying Respirators

If the contaminant is a:	Then
<p>Gas or vapor</p> 	<p>Provide a respirator with canisters or cartridges equipped with a NIOSH-certified, end-of-service-life indicator (ESLI) (<i>note: there just a few of these</i>)</p> <p>or</p> <p>If a canister or cartridge with an ESLI is not available, develop a cartridge change schedule to make sure the canisters or cartridges are replaced before they are no longer effective (<i>note: most cartridge respirators fit in this category</i>)</p> <p>or</p> <p>Select an air-supplying respirator</p>
<p>Particle, such as a dust, spray, mist, fog, fume, or aerosol</p> 	<p>Select respirators with filters certified to be at least 95% efficient by NIOSH. For example, N95s, R99s, P100s, or High Efficiency Particulate Air filters (HEPA)</p> <p>Or</p> <p>You may select respirators NIOSH certified as “dust and mist,” “dust, fume, or mist,” or “pesticides.” You can only use these respirators if particles primarily have a mass median aerodynamic diameter of at least 2 micrometers <i>Note: These latter respirators are no longer sold for occupational use, but some employers may still be using them.</i></p>

Sample Respiratory Program Template

Sample Respirator Fit Test Record

Name: _____ Initials: _____

Type of qualitative/quantitative fit test used: _____

Name of test operator: _____ Initials: _____

Date: _____

Respirator Mfr./Model/Approval no. **Size** **Pass/Fail** **or** **Fit Factor**

Note: "Fit factor" is numerical result of quantitative fit test from instrument reading

1. _____ S M L P F _____

2. _____ S M L P F _____

3. _____ S M L P F _____

4. _____ S M L P F _____

Clean Shaven? Yes ___ No ___ (Fit-test cannot be done unless clean-shaven)

Medical Evaluation Completed? Yes ___ No ___

NOTES: _____

This record indicates that you have passed or failed a qualitative or quantitative fit test as shown above for the particular respirator(s) shown. Other types will not be used until fit tested.

Sample Respiratory Program Template

Sample Respirator Training Record

Employee Name (printed)

I certify that I have been trained in the use of the following respirator(s):

This training included the inspection procedures, fitting, maintenance and limitations of the above respirator(s). I understand how the respirator operates and provides protection. I further certify that I have heard the explanation of the respirator(s) as described above and I understand the instructions relevant to use, cleaning, disinfecting and the limitations of the respirator(s).

Employee Signature

Instructor Signature

Date

Sample Respiratory Program Template

Employer-Provided Information for Medical Evaluations

This form may be used by the employer to give to your medical provider, information on respirator use by your employees, but it is not a required form. You can also consult directly with your medical provider and discuss the information below.

You must also give the medical provider a copy of your written respiratory program and copy of the Respirators Rule

Specific Respirator Use Information

Employee Name: _____

Company name: _____

Employee job title: _____

Company Address: _____

Company contact person and phone

#: _____

1. Will the employee be wearing protective clothing and/or equipment (other than the respirator) when using the respirator?

Yes/No _____ If "Yes," describe protective clothing and/or equipment:

2. Will employee be working under hot conditions (temperature exceeding 77°F)?

Yes/No _____ If "Yes", describe nature of work and duration:

3. Will employee be working under humid conditions? Yes / No _____

4. Describe any special or hazardous conditions the employee could encounter when using the respirator (for example, confined spaces, life-threatening gases).

Sample Respiratory Program Template

Specific Respirator Use Information, Continued

Check Box	Respirator Type	Face / Head Cover Type (half or full face, helmet, or hood)	Frequency of Use (hours per day, week, or month)	Work Effort Light, Moderate, Heavy (see descriptions below)	Respirator Wt.
	Disposable facepiece particulate filter (N, R or P series)	1/2 facepiece			
	Mask with replaceable filter or cartridge				
	Mask with canister				
	Powered air-purifying respirator (PAPR)				
	Air line, continuous flow				
	Air line, negative pressure demand				
	Air line, positive pressure demand				
	SCBA, negative pressure demand	Full facepiece			
	SCBA, positive pressure demand	Full facepiece			

Work Effort Descriptions

Examples of a **light work effort** are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

Examples of **moderate work effort** are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

Examples of **heavy work effort** are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lb.).

Sample Respiratory Program Template

Seal Check Procedures

Table 21
User Seal Check Procedure

Important Information for Employees:

- You need to conduct a seal check each time you put your respirator on before you enter the respirator use area. The purpose of a seal check is to make sure your respirator (which has been previously fit tested by your employer) is properly positioned on your face to prevent leakage during use and to detect functional problems.
- The procedure below has 2 parts; a positive pressure check and a negative pressure check. You must complete both parts each time. It should only take a few seconds to perform, once you learn it.
 - If you can't pass both parts, your respirator is not functioning properly, see your supervisor for further instruction.

Positive Pressure Check:

1. Remove exhalation valve cover, if removable.
2. Cover the exhalation valve completely with the palm of your hand while exhaling gently to inflate the facepiece slightly.
3. The respirator facepiece should remain inflated (indicating a build-up of positive pressure and no outward leakage).
 - If you detect no leakage, replace the exhalation valve cover (if removed), and proceed to conduct the negative pressure check .
 - If you detect evidence of leakage, reposition the respirator (after removing and inspecting it), and try the positive pressure check again.

Negative Pressure Check:

4. Completely cover the inhalation opening(s) on the cartridges or canister with the palm(s) of your hands while inhaling gently to collapse the facepiece slightly.
 - If you can't use the palm(s) of your hands to effectively cover the inhalation openings on cartridges or canisters, you may use:
 - Filter seal(s) (if available)
 - or
 - Thin rubber gloves
5. Once the facepiece is collapsed, hold your breath for 10 seconds while keeping the inhalation openings covered.
6. The facepiece should remain slightly collapsed (indicating negative pressure and no inward leakage).
 - If you detect no evidence of leakage, the tightness of the facepiece is considered adequate, the procedure is completed, and you may now use the respirator.
 - If you detect leakage, reposition the respirator (after removing and inspecting it) and repeat both the positive and negative fit checks.

Sample Respiratory Program Template

Respirator Cleaning Procedures

Table 20	
Respirator Cleaning Procedure	
Step	Task
1.	<p>Remove filters, cartridges, canisters, speaking diaphragms, demand and pressure valve assemblies, hoses, or any components recommended by the manufacturer.</p> <ul style="list-style-type: none"> • Discard or repair any defective parts.
2.	<p>Wash components in warm (43°C [110°F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer.</p> <ul style="list-style-type: none"> • A stiff bristle (not wire) brush may be used to help remove the dirt. • If the detergent or cleaner doesn't contain a disinfecting agent, respirator components should be immersed for 2 minutes in one of the following: <ul style="list-style-type: none"> - A bleach solution (concentration of 50 parts per million of chlorine). Make this by adding approximately one milliliter of laundry bleach to one liter of water at 43°C (110°F) - A solution of iodine (50 parts per million iodine). Make this in 2 steps: <ul style="list-style-type: none"> • First, make a tincture of iodine by adding 6-8 grams of solid ammonium iodide and/or potassium iodide to 100 cc of 45% alcohol approximately. • Second, add 0.8 milliliters of the tincture to one liter of water at 43°C (110°F) to get the final solution. - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer
3.	<p>Rinse components thoroughly in clean, warm (43°C [110°F] maximum), preferably, running water.</p> <p>Note: The importance of thorough rinsing can't be overemphasized. Detergents or disinfectants that dry on facepieces could cause dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts, if not completely removed.</p>
4.	Drain components.
5.	Air-dry components or hand dry components with a clean, lint-free cloth.
6.	<p>Reassemble the facepiece components.</p> <ul style="list-style-type: none"> • Replace filters, cartridges, and canisters, if necessary (for testing)
7.	Test the respirator to make sure all components work properly.