

### User Seal Check for Respirators

When using tight-fitting respirators, perform a user seal check to ensure an adequate seal is achieved each time the respirator is put on. Either positive- and negative-pressure checks or the respirator manufacturer's recommended user seal check method will be used

- **Positive-Pressure Check:**
  - Close off the exhalation valve, and exhale gently into the facepiece.
  - The face fit is considered satisfactory if a slight positive pressure can be built-up inside the facepiece without any evidence of outward leakage of air at the seal.
  - For most respirators, this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
- **Negative-Pressure Check:**
  - Close off the inlet opening of the canister or cartridge(s) by covering it with the palm of the hand(s) or replacing the filter seal(s), inhale gently so the facepiece collapses slightly, and hold your breath for ten seconds.
  - If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.
  - The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand; in these instances, the test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove.

**Manufacturer's Recommended User Seal Check Procedures:** The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided it is demonstrated that the manufacturer's procedures are equally effective.



Positive-Pressure Check



Negative-Pressure Check

**Note:** User seal checks are not substitutes for qualitative or quantitative fit tests.

### Questions?

Contact Environmental Health and Safety at [ehs@northwestern.edu](mailto:ehs@northwestern.edu)

### Respirator Cleaning and Storage

Respirator users must store their respirators to protect from damage or deformation (especially of the face piece and exhalation valve), contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

Respirators will be cleaned per the following:

- **Personal respirators:** Clean and disinfect as often as necessary to maintain in a sanitary condition.
- **SCBAs:** Clean and disinfect after each use.
- **Respirators for Emergency Use:** Clean and disinfect after each use.

These may be substituted by the cleaning recommendations provided by the respirator manufacturer, provided they are as effective as those outlined below and ensure the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

- 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.
- Wash components in warm (110°F/43°C maximum) water with a mild detergent or cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
  - Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 110°F/43°C;
  - 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% alcohol) to one liter of water at 110°F/43°C; or
  - Other commercially-available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- Rinse components thoroughly in clean, warm (110°F/43°C 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.
- Components should be hand-dried with a clean, lint-free cloth or air-dried.
- Reassemble the facepiece, replacing filters, cartridges, and canisters where necessary.

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