Suggested Respirator Cleaning And Sanitation Procedures

Decide on the procedures needed based on how respirators are being used

Option 1: Cleaning for Single users: the same person uses the same respirator all the time. **NOTE:** this option should not be used if respirators are not marked with user names.
- Use Procedure 1 for basic cleaning of single user respirators.
- If desired or required, add Procedure 2 to sanitize single user respirators after cleaning.

Option 2: Cleaning for Multiple users: different persons will be sharing respirators.
- Use Procedure 3 to clean and sanitize respirators.

Note that Procedure 3 is equal to combining procedures 1 and 2.

Gather equipment and supplies

**Procedure 1**
- 2 buckets
- Warm water
- Thermometer
- Alcohol free wipes and or soft brush and sponge
- Neutral detergent - no lanolins or oils - (most dish detergents will work)
- Table or work surface

**Procedure 2**
- 2 buckets
- Warm water
- Thermometer
- Metric graduated cylinder for measuring small quantities
- Quaternary ammonia disinfectant OR hypochlorite (household
bleach) OR iodine solution OR other commercially available cleansers of disinfectant quality that are recommended by the respirator manufacturer
- Table or work surface

**Procedure 3**
- 4 buckets and the materials listed above for procedure 1 and 2.

**Description of Procedures**

**Procedure 1**
Generic Single User Cleaning Procedure (the same person uses the same respirator all the time). Cleaning can be done as often as required. Atmosphere supplying and emergency use respirators should be cleaned and sanitized after each use. **THE RESPIRATOR MUST BE CLEANED AND SANITIZED BEFORE IT CAN BE TRANSFERRED TO ANOTHER INDIVIDUAL.**
- Prepare 2 buckets (2 gal/7.5 L) of fresh warm water; follow sequence of use as described below.
- Do not use boiling or hot water. Water Temperature should be less than 110 F.
- Disassemble respirator, removing cartridges and/or filters and any external accessories such as communications, hoods, head harness (if possible) and eye lens outserts. Do not remove the valves because they are easy to lose.
- Bucket 1. Clean respirator and associated parts (excluding cartridges and/or filters) with alcohol free wipes, or by immersing in a warm water cleaning solution, scrubbing with a soft brush or sponge. Do not brush eye lenses. Use a neutral detergent cleaning solution that does not contain lanolin or oils.
- Bucket 2. Rinse in fresh, warm water. Running water is better than immersion if available. Thorough rinsing is important to keep detergents or disinfectants from drying on the respirator. [See OSHA 29CFR1910.134, Appendix B-2, running water for rinsing (if available) is preferred over immersion.]
- Replace cleaning solution and rinse water after approximately 20 respirators have been cleaned, or as needed.
- Allow the respirator to air dry in a non-contaminated environment. Do not dry with heaters or in sunlight. Respirators can be reassembled before or after drying.
- Prior to re-use, conduct checks as recommended by the manufacturer's manual to assure that the system is ready to be placed in operation. It is very important to check that the inhalation
and exhalation valves are in place prior to use.

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**Procedure 2**

**IF Sanitization is desired or required:**

- Clean respirator as described above. The final air drying step is not necessary.

- Prepare 2 buckets (2 gal/7.5L) of fresh warm water; follow sequence of use as described below.

- Do not use boiling or hot water. Water Temperature should be less than 110 F.

- Bucket 1. Disinfect respirator by immersing in a disinfectant water solution. A quaternary ammonia disinfectant (one packet per 2 gallons or per manufacturer's recommendation), or a hypochlorite (1 oz [30milliliters] household bleach in 2 gal [7.5 L] water) solution, or an aqueous solution of iodine (50ppm of iodine, made by adding 0.8 milliliters of tincture of iodine to one liter of water at 110 F) can be used.

- Bucket 2. Rinse in fresh, warm water. Thorough rinsing is important to keep detergents or disinfectants from drying on the respirator.

- Replace sanitizing solution and rinse water after approximately 20 respirators have been sanitized, or as needed.

- Allow the respirator to air dry in a non-contaminated environment. Do not dry with heaters or in sunlight.

- Prior to re-use, conduct checks as recommended by the manufacturer's manual to assure that the system is ready to be placed in operation. It is very important to check that the inhalation and exhalation valves are in place prior to use.

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**Procedure 3**

Respirator Cleaning and Sanitization Procedures

Generic Multiple User Cleaning and Sanitizing Procedure (different people use the same respirator). Atmosphere supplying and emergency use respirators should be cleaned and sanitized after each use. **THE RESPIRATOR MUST BE CLEANED AND SANITIZED BEFORE IT CAN BE TRANSFERRED TO ANOTHER INDIVIDUAL.**

- Prepare 4 buckets (2 gal/7.5 L) of fresh warm water; follow sequence of use as described below.

- Do not use boiling or hot water. Water Temperature should be less than 110 F.
Disassemble respirator, removing cartridges and/or filters and any external accessories such as communications, hoods, head harness (if possible) and eye lens outserts. Do not remove the valves because they are easy to lose.

Bucket 1. Clean respirator (excluding cartridges and/or filters) with alcohol free wipes, or by immersing in a warm water cleaning solution, scrubbing with a soft brush or sponge. Do not brush eye lenses. Use a neutral detergent cleaning solution that does not contain lanolin or oils.

Bucket 2. Rinse in fresh, warm water. Running water is better than immersion if available. Thorough rinsing is important to keep detergents or disinfectants from drying on the respirator. [See OSHA 29CFR1910.134, Appendix B-2, running water for rinsing (if available) is preferred over immersion.]

Bucket 3. Disinfect respirator by immersing in a disinfectant water solution. A quaternary ammonia disinfectant (one packet per 2 gallons or per manufacturer's recommendation), a hypochlorite (1 oz [30ml] household bleach in 2 gal [7.5 L] water) solution, or an aqueous solution of iodine (50 ppm of iodine, made by adding 0.8 ml of tincture of iodine to one liter of water at 110 F) can be used.

Other commercially available cleansers of equivalent disinfectant quality when used as directed can be used, if their use is recommended or approved by the respirator manufacturer [See 29 CFR910.134, Appendix B-2, Para I, D.3.]

Bucket 4. Rinse in fresh, warm water. Running water is better than immersion if available. Thorough rinsing is important to keep detergents or disinfectants from drying on the respirator. [See OSHA 29CFR1910.134, Appendix B-2, running water for rinsing (if available) is preferred over immersion.]

Replace cleaning solution, sanitizing solution, and rinse water after approximately 20 respirators have been sanitized, or as needed.

Allow the respirator to air dry in a non-contaminated environment. Do not dry with heaters or in sunlight. Respirators can be reassembled before or after drying.

Prior to re-use, conduct checks as recommended by the manufacturer's manual to assure that the system is ready to be placed in operation. It is very important to check that the inhalation and exhalation valves are in place prior to use.

**General notes**

- The process should always include these steps:
  - Cleaning ➤ Sanitizing ➤ Rinsing ➤ Drying ➤ Reassembly ➤ Inspection
  - Prior to Use
• Respirators can be divided up into batches of 20, as water and cleaning fluids will be changed after 20 respirators are cleaned.

• It is better to disassemble and clean one respirator at a time. Group respirators together by manufacturer if more than one will be disassembled at a time to avoid getting parts confused.

• Different respirator manufacturers market different cleaning and sanitizing solutions. Contact them for details regarding these products.

• Quaternary ammonia is a disinfectant that contains ammonia (NH₄) with additional surfactant (detergent) action. It is used as a disinfectant with cattle producers and animal health workers. It has a wide germicidal range, is non-corrosive, and is considered very effective for sanitizing cleaned surfaces.

• Other non-alkaline biodegradable disinfectants have been tested and are recommended by leading respirator manufacturers that are effective against HIV-1 (AIDS virus).

September 2001