



## **Respiratory Protection and SARS - Reusable Respirator and Powered Air Purifying Respirator (PAPR) Cleaning Instructions Frequently Asked Questions (FAQs)**

April 15, 2003

3M has received inquiries regarding reusable respirator and powered air purifying respirator (PAPR) cleaning instructions. The following are responses to the most commonly asked questions. It is important to note this FAQ is not a substitute for the guidance of the Centers For Disease Control and Prevention (CDC) and World Health Organization (WHO). Please consult their websites frequently for the most current information and infection control procedures regarding SARS.

CDC <http://www.cdc.gov/ncidod/sars/index.htm>

WHO <http://www.who.int/en/>

### **How can I clean and disinfect reusable respirators and PAPRs?**

Neither Centers for Disease Control and Prevention (CDC) nor the World Health Organization (WHO) have provided any recommendations for cleaning and disinfecting respirators. The CDC does, however, in its guidelines for ground emergency medical transport (April 4, 2003) and air medical transport (March 26, 2003) indicate patient care areas (surfaces likely to be directly contaminated during care of a SARS patient) should be cleaned with a U.S. Environmental Protection Agency (EPA)-registered disinfectant. Please also check with your local agencies for other nationally approved disinfectants.

Refer to the cleaning and sanitizing instructions for the specific facepiece or Powered Air Purifying Respirator (PAPR) unit and headgear used to identify the components that can be cleaned. For example, filters cannot be cleaned or disinfected and should be disposed. In some parts of the world 3M offers a U.S. EPA registered disinfectant the 3M™ Twist ‘n Fill™ 5L Quat, a low level hospital grade quaternary ammonium disinfectant cleaner that is effective against a broad spectrum of bacteria and is virucidal and fungicidal. Please note that its efficacy has not been demonstrated against the specific virus that causes SARS. Follow the label instructions regarding application and contact time. Per the Twist ‘n Fill 5L quat instructions, the treated surface (of the respirator) must remain wet for 10 minutes, in order to benefit from its action. As with any other disinfecting agent, ensure all components are thoroughly rinsed with fresh, warm water and thoroughly dried before use or storage.

Although it is common practice to use quaternary ammonia solutions to clean and sanitize respirator components, Twist ‘n Fill quat has not been tested for compatibility. It is important to follow the inspection procedures supplied with each facepiece or PAPR unit and headgear to determine any damage or deterioration of components and replace them as necessary.

### **Is the 3M™ Twist ‘n Fill™ 5L Quat an EPA registered disinfectant?**

Yes, it has a U.S. Environmental Protection Agency (EPA) Registration number of 6836-78-10350.

## **How do I clean and sanitize a reusable respirator?**

Follow the hygiene and infection control practices established by your employer for SARS; or follow the infection control procedures from the World Health Organization (WHO) at <http://www.who.int/csr/sars/infectioncontrol/en/>. Then follow the recommendations below. Cleaning is recommended after each use

1. Remove cartridges and/or filters
2. Clean facepiece (excluding filters and cartridges), with 3M™ Respirator Wipes 504 or 105 (not to be used as the only method of cleaning) or by immersing in warm, mild detergent cleaning solution, water temperature not to exceed 120°F (49°C) and scrub with soft brush until clean. Do not use cleaners containing lanolin or other oils. Machine cleaning may be utilized provided facepieces are held in a stationary position and temperatures do not exceed 120°F (49°C).
3. Sanitize facepiece by soaking in a solution of sodium hypochlorite (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is 3M™ Twist ‘n Fill™ 5L Quat. Follow product user instructions for Twist ‘n Fill 5L quat.
4. Rinse in fresh, warm water and air dry in non-contaminated atmosphere.
5. The cleaned respirator should be stored away from contaminated areas when not in use.

## **How do I clean and sanitize a 3M™ Powered Air Purifying Respirator (PAPR)?**

Follow the hygiene and infection control practices established by your employer for SARS; or follow the infection control procedures from the World Health Organization (WHO) at: <http://www.who.int/csr/sars/infectioncontrol/en/>. Then follow the recommendations below.

### **Cleaning and sanitizing the 3M™ GVP Powered Air Blower/Filtration Unit**

1. Disconnect breathing tube from any attached headgear.
2. Disconnect other end of breathing tube from GVP-100 PAPR assembly.
3. Remove the battery and blower assembly from the waist belt.
4. Clean all parts of the hood or helmet assembly with a sponge or soft cloth dampened with warm 120°F (49°C) water containing a mild detergent. Do not use detergents that contain lanolin or other oils. Refer to user instructions for cleaning details for the appropriate headgear.
5. Wipe components cleaned in Step 4 with a sponge or soft cloth dampened with clean warm 120°F (49°C) water.
6. Sanitize components by wiping with a sponge or soft cloth dampened with a hypochlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is 3M™ Twist ‘n Fill™ 5L Quat. Follow product user instructions for Twist ‘n Fill 5L quat.
7. Clean the remaining parts of the system as follows:  
Note: You should not use solvents to clean the motor/blower unit or battery case. Liquid solvents may chemically weaken the plastics. The following procedure is suggested for cleaning: Do not use detergents that contain lanolin or other oils.
8. Remove the filter cartridge from the blower assembly. Properly dispose of the used filter/cartridge. Do not attempt to clean the filter. Dispose of the filter/cartridge according to local regulations.

9. Wipe the battery pack with mild cleaning solution. Do not immerse the battery pack.
10. Clean the breathing tube by wiping down with a soft cloth dampened with a warm water and mild detergent solution followed by a wipe with a cloth dampened with clean water. Be careful not to let any of the cleaning solution enter into the hose. Air dry in uncontaminated atmosphere, temperature not to exceed 120°F (49°C).
11. Screw the blower plug and filter plug (GVP-115 consists of both plugs) into the motor blower unit.
12. With the plugs in place the unit can be rinsed with a mild cleaning solution or it can be placed in an equipment washer. Do not expose to cleaning or drying temperatures greater than 120° F (49° C).
13. Sanitize components by wiping with a sponge or soft cloth dampened with a hypo chlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is Twist ‘n Fill 5L quat. Follow product user instructions for Twist ‘n Fill 5L quat.
14. Reassemble unit as described in the GVP user instructions.

Please note that to the best of 3M’s knowledge, the efficacy of soap and water as well as sodium hypochlorite or Twist ‘n Fill 5L quat has not been demonstrated against the specific virus that causes SARS. Gloves should be worn and the inspection procedure followed per the instructions supplied with each facepiece or PAPR unit and headgear.

### **Cleaning and sanitizing the 3M™ Breathe Easy™ Turbo and 3M™ Jupiter™ Powered Air Blower/Filtration Unit**

1. Disconnect breathing tube from any attached headgear.
2. Disconnect other end of breathing tube from PAPR assembly.
3. Remove the battery and blower assembly from the waist belt.
4. Clean all parts of the hood or helmet assembly with a sponge or soft cloth dampened with warm 120°F (49°C) water containing a mild detergent. Do not use detergents that contain lanolin or other oils , gasoline (petrol), chlorinated degreasing fluids (such as trichloroethylene), organic solvents or abrasive cleaning agents.. Refer to user instructions for cleaning details for the appropriate headgear.
5. Wipe components cleaned in Step 4 with a sponge or soft cloth dampened with clean warm 120°F (49°C) water.
6. Sanitize components by wiping with a sponge or soft cloth dampened with a hypo chlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is 3M™ Twist ‘n Fill™ 5L Quat. Follow product user instructions for Twist ‘n Fill 5L quat.
7. Clean the remaining parts of the system as follows:
  - Note: You should not use solvents to clean the motor/blower unit or battery case. Liquid solvents may chemically weaken the plastics. The following procedure is suggested for cleaning: Do not use detergents that contain lanolin or other oils , gasoline (petrol), chlorinated degreasing fluids (such as trichloroethylene), organic solvents or abrasive cleaning agents..
8. Remove the filter cartridges from the blower assembly. Properly dispose of the used filter/cartridge. Do not attempt to clean the filter. Dispose of the filter/cartridge according to local regulations.
9. Wipe the battery pack with mild cleaning solution. Do not immerse the battery pack.

10. Cover both ends of the breathing tube. Clean the breathing tube by wiping down with a soft cloth dampened with a warm water and mild detergent solution followed by a wipe with a cloth dampened with clean water. Be careful not to let any of the cleaning solution enter into the hose. Air dry in uncontaminated atmosphere, temperature not to exceed 120°F (49°C).
11. Clean the Turbo PAPR Blower Unit by wiping down with a soft cloth dampened with a warm water and mild detergent solution followed by a wipe with a cloth dampened with clean water. Do not immerse the Turbo PAPR blower unit. Be careful not to let any of the cleaning solution enter into the Turbo PAPR Blower Unit. Air dry in uncontaminated atmosphere, temperature not to exceed 120°F (49°C).
12. Sanitize components by wiping with a sponge or soft cloth dampened with a hypochlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is Twist 'n Fill 5L quat. Follow product user instructions for Twist 'n Fill 5L quat.
13. Reassemble unit as described in the user instructions.

Please note that to the best of 3M's knowledge, the efficacy of soap and water as well as sodium hypochlorite or Twist 'n Fill 5L quat has not been demonstrated against the specific virus that causes SARS. Gloves should be worn and the inspection procedure followed per the instructions supplied with each facepiece or PAPR unit and headgear.

**Cleaning and sanitizing the 3M™ Air-Mate™ and 3M™ Dustmaster™ Powered Air Blower/Filtration Unit:**

1. Disassemble the breathing tube from the headpiece by pulling apart at the snap connection.
  - a. Twist the end of the breathing tube (that is attached to the unit) counterclockwise to separate the breathing tube from the unit.
2. Remove blower assembly from the waist belt.
3. Clean all parts of the hood assembly with a sponge or soft cloth dampened with warm 120°F (49°C) water containing a mild detergent. Do not use detergents that contain lanolin or other oils, gasoline (petrol), chlorinated degreasing fluids (such as trichloroethylene), organic solvents or abrasive cleaning agents. Refer to user instructions for cleaning details for the appropriate headgear.
4. Wipe components cleaned in Step 3 with a sponge or soft cloth dampened with clean warm 120°F (49°C) water.
5. Sanitize components by wiping with a sponge or soft cloth dampened with a hypochlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is 3M™ Twist 'n Fill™ 5L Quat. Follow product user instructions for Twist 'n Fill 5L quat.
6. Clean the remaining parts of the system as follows:
 

Note: You should not use solvents to clean the motor/blower unit or battery case. Liquid solvents may chemically weaken the plastics. The following procedure is suggested for cleaning: Do not use detergents that contain lanolin or other oils, gasoline (petrol), chlorinated degreasing fluids (such as trichloroethylene), organic solvents or abrasive cleaning agents.
7. Remove the filter from the blower assembly. Properly dispose of the used filter/cartridge. Do not attempt to clean the filter. Dispose of the filter according to local regulations.

8. Wipe the battery pack with mild cleaning solution, if necessary (battery is normally enclosed in the unit). Do not immerse the battery pack.
9. Cover both ends of the breathing tube. Clean the breathing tube by wiping down with a soft cloth dampened with a warm water and mild detergent solution followed by a wipe with a cloth dampened with clean water. Be careful not to let any of the cleaning solution enter into the hose. Air dry in uncontaminated atmosphere, temperature not to exceed 120°F (49°C)
10. Clean the Air-Mate or Dustmaster PAPR blower unit by wiping down with a soft cloth dampened with a warm water and mild detergent solution followed by a wipe with a cloth dampened with clean water. Do not immerse the Air-Mate or Dustmaster PAPR blower unit. Be careful not to let any of the cleaning solution enter into the Air-Mate or Dustmaster PAPR blower unit. Air dry in uncontaminated atmosphere, temperature not to exceed 120°F (49°C).
11. Sanitize components by wiping with a sponge or soft cloth dampened with a hypo chlorite solution (1 oz. [30ml] household bleach in 2 gallons [7.5 L] of water). An alternate cleaning and disinfecting solution is Twist 'n Fill 5L quat. Follow product user instructions for Twist 'n Fill 5L quat.
12. Reassemble unit as described in the Air-Mate or Dustmaster unit user instructions.

Please note that to the best of 3M's knowledge, the efficacy of soap and water as well as sodium hypochlorite or Twist 'n Fill 5L quat has not been demonstrated against the specific virus that causes SARS. Gloves should be worn and the inspection procedure followed per the instructions supplied with each facepiece or PAPR unit and headgear.

**Can disposable respirators, reusable facepieces and Powered Air Purifying Respirators (PAPRs) be sterilized prior to reuse?**

No, sterilization processes such as ethylene oxide, radiation and steam sterilization will damage the components and should not be used.