

Ultravue®

APR RESPIRATOR

RESPIRATOR APPLICATION

P100 Respirator
GME-P100 Respirator
Ultra-Twin Respirator

GAS MASK APPLICATION

Chin-Type Canister
CS/CN Canister

OPERATION AND INSTRUCTIONS

WARNING

This manual must be carefully read and followed by all persons who have, or will have, the responsibility for using or servicing Ultravue APR Respirators. These Ultravue APR Respirator will perform as designed only if used and serviced according to the instructions; otherwise, the respirator could fail to perform as designed, and persons who rely on the Ultravue APR Respirator could sustain serious personal injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed, used and serviced in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions. Please read and observe the WARNINGS and CAUTIONS inside. For any additional information relative to use or repair, write or call 1-800-MSA-2222 during regular working hours.

See separate insert for NIOSH Approval Information:

P/N 10035719 (P100, GME-P100), P/N 818206 (Ultra Twin), P/N 817241 (Gas Mask),
P/N 818082 (CS/CN)

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com



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INTRODUCTION

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NIOSH APPROVAL INFORMATION CAUTIONS AND LIMITATIONS

Ultravue Industrial and Gas Mask Applications

Note: All cautions and limitations do not apply to all applications. Refer to the NIOSH approval insert to verify the applicable 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 out schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.
- I- Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
- J- Failure to properly use and maintain this product could result in injury or death.
- L- Follow the manufacturer's User's Instructions for changing canisters.
- 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 User's Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
- P- NIOSH does not evaluate respirators for use as surgi-

cal masks.

- S- Special or critical User's Instructions and/or specific use limitations apply. Refer to User's Instructions before donning.
- LL- This respirator contains filter or cartridge components that are not approved for protections in all configurations. Check the specific row in the NIOSH approval label to ensure proper use.

S- SPECIAL OR CRITICAL USER'S INSTRUCTIONS

Mersorb-P100 cartridges can be used against a mixture of chlorine and mercury that are both present simultaneously, but cannot be used if alternating between mercury-contaminated atmospheres and chlorine-contaminated atmospheres.

Mersorb-P100 respirators utilize an end-of-service-life indicator for use against metallic mercury vapor. The band around the side of each Mersorb-P100 cartridge consists of chemically-treated paper. In use, as the paper is exposed to metallic mercury vapor it changes from orange to brown. When the indicator color changes to brown, the cartridge is beginning to lose its effectiveness against metallic mercury vapor and must be replaced. Thus, the wearer has a constant, positive check on the condition of the cartridge.

Do not enter any atmospheres with this respirator unless you know that; you are not colorblind and can distinguish between the beginning and ending colors of the end-of-service-life indicator (when using Mersorb-P100/Mersorb respirators only).

INSTRUCTIONS FOR USE AND CARE

⚠ WARNING

1. An adequate respiratory protection program must include knowledge of hazards, hazard assessment, selection of proper respiratory protective equipment, instruction and training in the use of equipment, inspection and maintenance of equipment, and medical surveillance.
2. This respirator will perform as designed only if used and maintained according to the manufacturer's instructions. The Program Administrator and the users must read and understand these instructions before using or servicing this product.
3. If the respirator does not perform as specified in this manual, it must not be used until it has been checked by authorized personnel.
4. Do not alter, modify, or substitute any components.
5. Inspect the respirator regularly and maintain it according to the instructions. Repairs must only be made by properly trained personnel.
6. This respiratory protective device does not supply oxygen. Use only in adequately ventilated areas which conform to the appropriate standard.
7. This respirator must be used in conjunction with the proper chemical or particulate canister/cartridge(s) for protection against specific contaminants. If you cannot determine that the filter canister/cartridge(s) used with this device is designed for the contaminant, or if you do not know the identity of the contaminant, do not use this device.
8. Do not use when concentrations of contaminants are unknown.
9. Do not use when appropriate exposure limit (PEL, REL, TLV, etc.) is not known.
10. Leave the contaminated area immediately if:
 - a. Breathing becomes difficult
 - b. Dizziness or other distress occurs
 - c. You taste or smell the contaminant
 - d. You experience nose or throat irritation
 - e. Instructed by responsible individuals
12. Use strictly according to the instructions, labels, and limitations pertaining to this device. Follow an established canister/cartridge(s) change-out schedule.
13. This respirator may not provide a satisfactory seal with certain facial characteristics, such as beards or large sideburns, that prevents direct contact between the skin and the sealing surface of the facepiece. Do not use this facepiece if such condi-

tions exist.

14. Do not wear eyeglasses under the facepiece. The temples or sidebars on eyeglasses will prevent an air-tight seal. If you must wear glasses, install the spectacle kit.
15. The user must perform a respirator fit test (Quantitative Test or Qualitative Test) and follow all warnings and limitations specified.
16. Wear impermeable protective clothing to prevent exposure to gases and vapors which can poison by skin absorption.
17. Do not use this full facepiece with self-contained breathing apparatus (SCBA).
18. Do not use this respiratory protective device in explosive atmospheres.
19. Do not use for urethane paints or other paints containing diisocyanates unless an appropriate cartridge change-out schedule is developed. Due to their poor warning properties, over exposure can occur without user awareness and result in severe permanent damage to the respiratory system. If unable to develop an appropriate change-out schedule, use an air-supplied respirator or SCBA.

Failure to follow all warnings, instructions, and established protective measures can result in serious personal injury or death.

⚠ CAUTION

When using filters in an application that produces sparks, ensure that they are protected by a shield. Contact with sparks can damage filters and reduce protection.

GENERAL DESCRIPTION

The Ultravue APR Respirator is an air purifying respirator intended for use in atmospheres which are not immediately dangerous to life or health (non-IDLH). This respirator is intended for applications which may require the user to enter or exit a hazardous area, or work within the area for a limited time.

Inhaled air is drawn through the canister/cartridge(s), which contains adsorbents and a filter that removes or neutralizes specific contaminations. Exhaled air leaves the facepiece through the exhalation valve.

It is important that the user becomes familiar with the application and operation of the Ultravue APR Respirator and ensures that it fits properly before use.

When properly fitted to the user, the Ultravue full facepiece with nosecup and head harness, combined with the appropriate canister/cartridge(s), becomes a complete respiratory protective device.

The respirator consists of the following subassemblies:

- full facepiece (with optional nosecup)
- filter canister/cartridge(s)

Facepieces are available in the following sizes and head harness configurations:

P/N	Description
471218	Small, Hycar
457126	Medium, Hycar
471230	Large, Hycar
480251	Small, Silicone
480247	Medium, Silicone
480255	Large, Silicone

Facepiece size is identified on the front of the facepiece behind the center of the lens and in front of the nosecup.

RESPIRATOR USE LIMITATIONS

The wearer must comply with the following MSA respirator use limitations:

- A. **MAXIMUM USE CONCENTRATION** – Do not exceed any of the following:
 1. Routine Use –
 - a. 50 times the exposure limit for the contaminants present if using a quantitative fit test method. Using a qualitative fit test may reduce the maximum use concentration. See the Respirator Fit Test section.
 - b. Immediately Dangerous to Life or Health (IDLH) concentration for any contaminant present.

2. Escape (for Gas Mask only) –

Canister for Chin-Type Gas Masks						
Part No.	MSA Canister Identification	Purifying Protection Code	Approval	Maximum Escape Conditions		Gas/Vapors
				% Volume	PPM	
815994	GMA-C-N95	OV	TC-14G-0197	0.50%	5000	Organic Vapors*
815996	GMC-C-N95	OV/AG	TC-14G-0196	0.50%	5000	Organic Vapors and Acid Gases*
816051	GMF-C-N95	AG/FM	TC-14G-0207	0.50% 0.05% 0.15%	5000 500 1500	Acid Gases* Formaldehyde* Phosphine*
815993	GMD-C-N95	AM	TC-14G-0198	0.50%	5000	Ammonia*
815995	GML-C-N95	CL2	TC-14G-0199	0.50%	5000	Chlorine*
915999	GMDL-C-N95	OV/CL2/AM	TC-14G-0200	0.50%	5000	Ammonia, Chlorine, and Organic Vapors*
815998	GMR-I-P100	OV/I2	TC-14G-0204	0.50%	5000	Organic Vapors†
816000	GMHF-C-P100	HF	TC-14G-0239	0.10%	1000	Hydrogen Fluoride†
10059903	Phosphine/ Ammonia/Chlorine/ P100	PH/AM/CL	TC-14G-0274	0.50% 0.15%	5000 1500	Ammonia and Chlorine† Phosphine†
10067469	Organic Vapor/ P100	OV	TC-14G-0279	0.50%	5000	Organic Vapors†
10067491	Hydrogen Fluoride/P100	HF	TC-14G-0280	0.10%	1000	Hydrogen Fluoride†
10067470	Formaldehyde Acid Gas/Chlorine Dioxide/Escape from Hydrogen Sulfide P100	FM/AG/CD/HS	TC-14G-0282	0.05% 0.50% 0.10%	500 5000 1000	Formaldehyde† Acid Gases and Hydrogen Sulfide† Chlorine Dioxide†

*Canister contains an N95-Particulate Filter (95% filter efficiency level) effective against particulate aerosols free of oil.

†Canister contains a P100-Particulate Filter (99.97 filter efficiency level) effective against all particulate aerosols.

GENERAL DESCRIPTION

- B. The limitations outlined in the applicable NIOSH approval
 C. Any applicable limitation contained in a standard established by regulatory agency (such as OSHA) with jurisdiction over the wearer.

⚠ WARNING

An appropriate cartridge change-out schedule must be developed by a qualified professional, unless the cartridge/canister utilizes an end-of-service-life indicator. The change-out schedule must take into account all factors that may influence respiratory protection including specific work practices and other conditions unique to the workers' environment. If using against substances having poor warning properties, there is no secondary means of knowing when to replace the cartridge/canister. In such cases, take appropriate additional precautions to prevent overexposure, which may include a more conservative change-out schedule or using an air-supplied respirator or SCBA. Failure to follow this warning can result in serious personal injury or death. As a reference, a partial list of substances having poor warning properties follows:

Acrolein	Nitro compounds:
Aniline	Nitrogen oxides
Arsine	Nitroglycerin
Bromine	Nitromethane
Carbon monoxide	Ozone
Diisocyanates	Phosgene
Dimethyl sulfate	Phosphine
Hydrogen cyanide	Phosphorous trichloride
Hydrogen selenide	Stivine
Methanol	Sulfur chloride
Methyl bromide	Urethane or other
Methyl chloride	diisocyanate
Methylene chloride	containin paints
Nickel carbonyl	Vinyl chloride
Nitric Acid	

- D. MIXTURES OF CONTAMINANTS – This gas mask can be used for protection against a mixture of contaminants that are present simultaneously or alternately against one contaminant then another (using the same canister) if the mixture meets the following conditions:
1. The canister/cartridge(s) must be approved for all contaminants present.
 2. NIOSH permits mixing of the following contaminants: organic vapors, chlorine, chloride dioxide, hydrogen sulfide, acid gases, ammonia, and carbon monoxide.
 3. Particulates can be mixed with any other particulate or any gas or vapor for which the canister is approved.
 4. Contaminants present simultaneously must be below IDLH levels for the specific contaminants. If any one contaminant in the mixture exceeds the IDLH concentration, then the entire mixture must be treated as IDLH and the respirator cannot be used (except for escape when using respirator in a gas mask configuration).
 5. Mersorb-P100 cartridges can be used against a mixture of chlorine and mercury that are both present simultaneously, but cannot be used if alternating between mercury-contaminated atmospheres and chlorine-contaminated atmospheres.
- E. TIME USE LIMITATION
1. Canisters and cartridges with an N95 or R95 filter shall be limited to 8 hours of use (continuous or intermit-

tent) against particulates. (Service time can be extended by performing an evaluation in the specific workplace setting that demonstrates (a) that the extended use will not degrade the filter efficiency below 95%, or (b) that the total mass loading of the filter is less than 200mg for a single canister application or less than 100 mg each for a dual cartridge application).

2. GMHF-C-P100 and Hydrogen Fluoride/P100: Canister must be replaced after each use against hydrogen fluoride (not to exceed 12 hours) to ensure the integrity of the P100 filter.
- F. MULTI-USE LIMITATIONS (OptiFilter XL only)
 1. Approved as a high efficiency particulate air filter on approved Powered Air Purifying Respirators. Also, approved as a P100 filter, but ONLY when used with an approved negative pressure respirator. Do not exceed maximum use concentrations established by regulatory standards.

EXPOSURE LIMITS

A listing of applicable exposure limits from the following sources is provided in MSA's Response® Respirator Selector: available online at www.MSAnet.com.

- American Conference of Governmental Industrial Hygienists (ACGIH)
- Occupational Safety and Health Administration (OSHA)
- National Institute for Occupational Safety and Health (NIOSH)
- American Industrial Hygiene Association (AIHA)

Contact MSA at 1-800-MSA-2222 for information.

EXPOSURE LIMITS FOR MIXTURES

The American Conference of Governmental Industrial Hygienists (ACGIH) publishes the following information to determine the TLV of a mixture.

First, determine the total concentration of the chemical mixture (C_{Mixture}) from the individual contaminant concentrations (C_1, C_2, C_3, \dots) using the following formula:

$$C_{\text{Mixture}} = C_1 + C_2 + C_3 + \dots$$

The TLV of the mixture is found by using the following formula where T_1, T_2, T_3, \dots are the individual contaminant TLVs and C_1, C_2, C_3, \dots are the individual contaminant concentrations:

$$T_{\text{Mixture}} = \frac{C_{\text{Mixture}}}{\frac{C_1}{T_1} + \frac{C_2}{T_2} + \frac{C_3}{T_3} + \dots}$$

Only use these equations if the contaminants present are actually mixed. Some substances do not mix and may be present separately, for example, in pockets or at different levels. In that case, the lowest TLV of the substances present must be used to determine the appropriate respirator category for protection against all contaminants present.

See MSA's Response Respirator Selector for additional information.

SIZE SELECTION

Regardless of facial dimensions and respirator sizing charts, an actual respirator fit test, either qualitative or quantitative must be performed to ensure the correct respirator size selected.

Fit test the respirator size relative to your facial features and dimensions. The Safety Administrator or Program Manager might assist in selecting the initial size to try.

Carefully don the mask and conduct a negative pressure seal test. See donning instructions for procedure.

If the facepiece does not pass the Negative Pressure Seal Test or feels uncomfortable, try the next nearest size relative to your face.

Passing the Negative Pressure Seal Test does not verify the size is correct. The size selected must be verified by successfully passing a Respirator Fit Test, either qualitative or quantitative. If the respirator passes a Negative Pressure Seal Test but DOES NOT pass a Respirator Fit Test, the next nearest size relative to your facial features and dimensions should be tried.

Once the proper size is selected, the respirator must pass a Negative Pressure Seal Test every time the mask is donned to ensure proper fit before using the respirator.

If other than facial seal leakage is detected, the condition must be investigated and corrected before another test is made.

The facepiece must also pass the tightness test before the user attempts to enter an toxic atmosphere.

The mask will not furnish protection unless all inhaled air is drawn through a suitable canister/cartridge(s).

RESPIRATOR FIT TEST

WARNING

The user must perform a respirator fit test (Quantitative Test or Qualitative Test) and follow all warnings and limitations specified. Failure to do so can result in serious personal injury or death.

A qualitative or quantitative respirator fit test must be routinely carried out for each wearer of this respirator to determine or confirm the amount of protection that the respirator provides. The fit test method chosen may impact the maximum use concentration.

Respirator fit tests are explained fully in the American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992 which is published by the American National Standards Institute, 11 West 42nd Street, New York, New York, 10036 and Occupational Safety and Health Standards, OSHA 1910.134, which is published by the Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington DC, 20210.

PREPARING THE RESPIRATOR FOR USE

CHECKPOINTS BEFORE USE

1. Check that all parts of the respirator are complete and undamaged. See Inspection section for Inspections Procedures.
2. Check that the filter canister/cartridge(s) approval is appropriate and effective against the contaminant in the environment.

INSTALLING/REPLACING THE CANISTER/CARTRIDGE(S)

⚠ WARNING

Know the contaminant(s) in the environment before entering. Always check that the filter canister/cartridge(s) is appropriate for use in the environment. A filter canister/cartridge(s) which is not designed for the contaminant present may not provide protection. Failure to follow this warning can result in serious personal injury or death.

After verifying that the canister/cartridge(s) type is appropriate for use in the environment:

1. Verify shelf life expiration date on carton, bag, and canister/cartridge(s) label has not been exceeded.

⚠ WARNING

DO NOT use an expired canister/cartridge(s). Failure to follow this warning can result in serious personal injury or death.

⚠ WARNING

DO NOT use the canister/cartridge(s) if the bag is opened, damaged, or missing. The canister/cartridge(s) must be in its original packaging prior to use in a contaminated environment. Do not reuse the canister/cartridge(s). Failure to follow this warning can result in serious personal injury or death.

2. Remove canister/cartridge(s) from its packaging.
3. Inspect the canister/cartridge(s) to be sure that it is not damaged.
4. Thread the filter canister/cartridge(s) into the facepiece port and hand-tighten. If the canister has a standard 40 mm thread, remove adapter P/N 96547 (if applicable).

Use the canister/cartridge(s) immediately upon opening the bag.

Note: For gas mask canister, refer to the shelf life section for storing the canister outside the packaging.

Discard canister/cartridge(s) after each use.

Replace the canister/cartridge(s) after each use. Follow the established canister/cartridge(s) change-out schedules to ensure that canister/cartridge(s) are replaced before breakthrough occurs. When used at defined occupational exposure limits, the rated service time cannot be exceeded.

Replacement of the Mersorb-P100 cartridge must occur at or before the end-of-service-life indicator turns brown in color.

The GMT cartridge must not exceed a 60 minute use time.

After using the respirator in a gas mask application for escape, the canister must be replaced before reusing the respirator.

⚠ WARNING

DO NOT replace canister/cartridge(s) in a contaminated area. Be sure to follow applicable decontamination procedures. Failure to follow this warning can cause inhalation of contaminated air, resulting in serious respiratory injury or death.

When the mask is adjusted properly, the wearer should not taste or smell the contaminant, or experience eye, nose, or throat irritation. The wearer's inhalation resistance should be as experienced during training.

⚠ WARNING

If the respirator does not perform as specified, it must not be used until it has been checked by authorized personnel. Failure to follow this warning can result in serious personal injury or death.

⚠ WARNING

Return to a non-contaminated area immediately if you experience unusual sensations (nausea, dizziness, eye irritation, unusual odor or taste, excessive fatigue, or difficulty breathing). Failure to follow this warning can result in serious personal injury or death.

For Ultra-Twin Adapter (P/N 803622)

1. Check to ensure the spider gasket is in place in the inlet assembly.

⚠ WARNING

DO NOT use unless the spider gasket is in place. An air-tight seal cannot be achieved without the spider gasket. Use without the spider gasket can result in the user suffering serious respirator injury or death.

PREPARING THE RESPIRATOR FOR USE

2. Remove the adapter from bag and position in the inlet of the facepiece.
3. Hand-tighten the plastic nut on the adapter making sure the mail portion of the adapter seals against the spider gasket in the facepiece inlet.
4. If using the Duo-Twin plug as described in the following section.
5. Remove the replacement cartridges from the storage bags and insert them into the threaded receptacles making sure the gaskets are in place in the receptacles.
6. Carefully hand-tighten the cartridges to prevent damage to threads. To ensure a good seal against the gaskets, tighten each cartridge by gripping as much of the circumference of the receptacle as possible and then slowly turn the cartridge until tight.
7. If applicable, place a new filter in each filter cover. Never load filters into the receptacles.

DONNING

⚠ WARNING

DO NOT wear eyeglasses under the facepiece. The temples or sidebars on eye glasses will prevent an airtight seal. If you must wear glasses, install an approved spectacle kit listed on the NIOSH approval matrix insert. Failure to follow this warning can cause inhalation of contaminated air, resulting in serious respiratory injury or death.

⚠ WARNING

Verify that the respirator is properly prepared before donning. See Preparing the Respirator for Use section. Failure to follow this warning can result in serious personal injury or death.

DONNING PROCEDURES

1. Loosen the harness head straps on the facepiece so that the strap end tabs are approximately 1" (inch) from the buckles.



2. With the facepiece lens facing away, grasp the temple straps and neck straps in each hand.



3. Slightly expand the harness straps, place chin into the facepiece, and pull the harness over the back of the head.

4. Support the weight of the mask by holding the outlet valve assembly in the palm of the hand, with the free hand; adjust the facepiece securely to the face, making sure the chin and nose are seated securely.
5. While holding the facepiece securely in position, tighten one temple strap at a time by pulling straight back (not out) with small jerks until mask feels snug on that side.

6. Tighten the other temple strap in same manner until both sides feel equally secure.



7. Ensure facepiece is centered on face by looking down at the nosecup, it should be uniform on each side of the face. If not, readjust the temple straps.

Note: Ensure that no hair is under the tabs and sealing surface. Ensure the harness tabs are flush to the face and not folded under the facepiece seal. Also, the straps should not cut into the ears.

8. Evenly tighten the neck straps by pulling them straight back.



9. Check that head pad is centered in the middle of the back of the head.



10. If applicable, tighten the top straps for best visibility and fit.

DONNING

NEGATIVE PRESSURE SEAL TEST

The Negative Pressure Seal Test must be performed each time the facepiece is donned. A good face-to-facepiece seal must be verified before entering a hazardous area.

Perform the test as follows:

1. Ensure respirator is assembled properly.
2. Block off canister/cartridge(s) inlet using the palm(s) of the hand(s).
3. Inhale gently and hold breath for 10 seconds. If the seal is good, the facepiece will collapse and remain collapsed against face. Remove hand and breathe normally.
4. If the facepiece did not remain collapsed during the test, or any leakage is noticed, readjust straps and perform Negative Pressure Seal Test again.
5. If this does not correct the leak, the mask will not provide protection. If the leakage is from the face seal, a different size mask may provide a good seal. If other than face seal leakage is detected, the condition must be corrected before performing another test.

WARNING

This device may not seal properly with your face if you have a beard, gross sideburns or similar physical characteristics (see ANSI Z88.2). An improper facial seal may allow contaminants to leak into the facepiece, reducing or eliminating respiratory protection.

WARNING

DO NOT use this device if such conditions exist. The negative pressure seal test must be conducted and passed before each use. Never remove the facepiece except in a safe, non-hazardous, non-toxic atmosphere. Failure to follow this warning can result in serious personal injury or death.

REMOVING THE RESPIRATOR

DECONTAMINATION

WARNING

DO NOT remove respirator until respirator and protective clothing are decontaminated; otherwise, exposure to contaminants may result. Follow decontamination and disposal procedures established by appropriate authorities. Failure to follow this warning may result in serious personal injury or death.

Once the protective equipment has been decontaminated, proper disposal of affected equipment must be performed. Disposal is to be performed as required by federal, state, and/or local laws.

PROCEDURE FOR REMOVING THE RESPIRATOR

1. To remove the facepiece, insert your thumbs under each of the harness head straps end tab and fully extend the harness head straps.
2. Grasp the facepiece by the component housing or bottom head harness straps (not the exhalation valve or canister/cartridge(s)).
3. Pull it up and away from your face.

Note: Before the next use, check the respirator facepiece and if necessary, clean and disinfect. Always use a new canister/cartridge(s). Do not reuse the canister/cartridge(s).

NOTES

CLEANING AND DISINFECTING

⚠ CAUTION

DO NOT use alcohol as a germicide because it may deteriorate rubber parts.

Depending on the cleaning policy adopted, either a designated person or the user should clean the respirator after each use. Non-sudsing Confidence Plus® Cleaning Solution (P/N 10009971) from MSA is recommended. It is a germicidal cleaner that cleans and disinfects in one operation. It retains its germicidal efficiency in hard water to inhibit the growth of bacteria. It will not deteriorate rubber, plastic, glass, or metal parts. Refer to the label for use instructions. A solution as effective as Confidence Plus Cleaning Solution and compatible with MSA respirator components may be substituted. ANSI suggests that users be trained in the cleaning procedure.

⚠ WARNING

Be careful not to breathe or touch the contaminant in handling the respirator or its parts. If necessary, use equipment disposal to protect you from the specific contaminant. Failure to follow this warning can result in serious personal injury or death.

1. Preparing Solution
 - a. Follow the instructions with the Confidence Plus Cleaning Solution.
 - b. If the Confidence Plus Cleaning Solution is not used, wash in a mild cleaning solution, rinse thoroughly, and submerge in a germicide solution for the manufacturer's recommended time.
2. Clean and Disinfect the Facepiece
 - a. Remove the canister/cartridge(s) from the facepiece.

- b. Thoroughly wash the facepiece (and nose cup) in the cleaning solution. A soft brush or sponge can be used to clean the soiled facepiece. Be sure to include cleaning the exhalation valve and seat.
- c. Rinse the facepiece and components in clean, warm (110°F), water (preferably running and drained).

⚠ CAUTION

If not rinsed thoroughly, cleaning agent residue may irritate the wearer's skin.

- d. Allow the facepiece to air dry. Do not dry the parts by placing them near a heater or in direct sunlight. The rubber will deteriorate.
- e. Operate the exhalation valve by hand to be sure it works properly.
- f. Harness (straps and buckles)
- g. The facepiece and components should be air-dried or hand-dried with a clean lint-free cloth.

⚠ CAUTION

DO NOT force-dry the parts by placing them in a heater or in direct sunlight. The rubber will deteriorate. When facepiece is thoroughly dried, store the facepiece in the clam shell in which it was shipped.

INSPECTION

INSPECTION

(Before and After Each Use)

- Inhalation valve disc
- Exhalation valve disc
- Harness straps
- Lens
- Canister/cartridge(s)
- Facepiece blank
- Accessories

INSPECTION PROCEDURES

1. Look for breaks or tears in the facepiece head-strap material.
2. Make sure all straps, fasteners, and adjusters are in place and not damaged.
3. Check the facepiece for dirt, cracks, tears, or holes.
4. Check the lens for cuts, scratches, or damage which would impair vision. Check that the lens is secured in the facepiece.
5. Look at the shape of the facepiece for distortion due to improper storage.
6. Unthread the canister/cartridge(s) (if installed), and check that the spider gasket, and inhalation valve are installed and undamaged.
7. Grasp the spider gasket by the raised tab and pull it gently out of the facepiece. The gasket must be free of cracks, tears, dirt, and distortion. The gasket must be soft and flexible.
8. Ensure the white inhalation disc valve is attached to the spider gasket. The disc must be free of cracks, tears, dirt, and distortion.
9. Set the gasket with inhalation valve disk aside in a clean location.
10. Expose the exhalation valve by lifting the tab on the bottom door of the component housing away from the facepiece.
11. Lift the exhalation valve and inspect the seat and valve.
12. Securely close the door of the component housing.
13. While holding the spider gasket in one hand, gently stretch the inhalation valve disk onto the post in the center of the spider gasket.
14. Install the spider gasket into the inlet port with the white inhalation valve disk into the facepiece. Check around the entire gasket to be sure the gasket lays flat and that the groove in the gasket is entirely captured by the component housing rim.
15. If any part is damaged or deteriorated, it must be replaced. Store only undamaged respirators for further use. When not in use, store the respirator in cool, dry, and clean ambient air in the original clamshell packaging. Keep new filters in their packing.

STORAGE

Store only undamaged respirators for further use. When not in use, store the respirator in cool, dry, and clean ambient air.

Do not distort the facepiece during storage. When disposing of the respirator or its components, do so in accordance with local, state, and federal regulations.

Discard the canister/cartridge(s) if the original bag or carton is opened or damaged. For gas mask application only, see Storage and Shelf Life information below.

SHELF LIFE

Follow the shelf life expiration date stamped on the carton, bag, and/or canister/cartridge(s) as applicable. The expiration date will only apply if factory sealed and undamaged or the proper procedure is followed, otherwise the canister must be discarded.

⚠ WARNING

DO NOT use an expired canister/cartridge(s). Failure to follow this warning can result in serious personal injury or death.

Storage and Shelf Life for Canister Part Numbers 10067491, 10059903, 10067469, and 10067470 Stored Outside the Original Foil Packaging:

These canisters have a 5 year shelf life with the expiration date printed on the foil bag. The canisters may be stored outside the original factory packaging by using the following procedure:

Approved Storage Configurations Outside the Original Foil Packaging

Storage using the supplied cap/plug component

- Remove the canister from the box and bag.
- Locate the white block on the canister label.
- Mark on the canister, in the white block, an expiration date of 1 year (for formaldehyde canister an expiration date of 6 months) from the date the canister was removed from the packaging. This expiration date must not exceed the original expiration date printed on the foil packaging.



- The respirator must be placed upright in the plastic case).

- 10075204 Phosphine/Ammonia/ Chlorine/P100
- 10075205 Hydrogen Fluoride/P100
- 10075206 Formaldehyde/Acid Gas/ Chlorine Dioxide/Escape from Hydrogen Sulfide/P100
- 10075207 Organic Vapor/P100
- Ensure the lid is snapped tight and the case is closed.



- Using the enclosed cap and plug assembly as shown in Figure A, place the cap end over the threaded outlet of the canister as shown in Figure B.



- Insert the plug end on the inlet of the canister as shown in Figure C.
- Using thumbs, press in the center of both the cap and the plug ends to ensure the cap/plug is firmly in place and the canister is sealed.
- Discard cap/plug after each use.

Storage in user supplied case

- Remove the canister from the box and bag.
- Locate the white block on the canister label.
- Mark on the canister, in the white block, an expiration date of 1 year (for formaldehyde canister an expiration date of 6 months) from the date the canister was removed from the packaging. This expiration date

STORAGE

must not to exceed the original expiration date printed on the foil packaging.

- The canister must be attached to the facepiece with the plug side of the cap and plug component secured into position.
- The respirator must be placed upright in the plastic case (P/N D2056734).

WARNING

DO NOT store the canister above 120°F. Failure to follow this warning can alter the performance of the canister and result in serious personal injury or death.

ACCESSORIES

The facepiece may be equipped with the following accessories:

1. Communication System
2. Cover Lens (clear or tinted), in small, medium, or large
3. Spectacle Kit

⚠ CAUTION

Refer to the NIOSH Approval Matrix for a complete list of Approved Accessories. If you must wear corrective eyewear, install an approved spectacle kit, listed on the NIOSH approval matrix insert.

⚠ WARNING

Know the contaminant(s) in the environment before entering. Always check that the filter canister/cartridge(s) is appropriate for use in the environment. A filter canister/cartridge(s) which is not designed for the contaminant present may not provide protection. Failure to follow this warning can result in serious personal injury or death.

Installing the Nosecup for Ultravue Facepiece

1. Place the nosecup in the facepiece and position it so its rubber ring faces toward the plastic retainer ring.



2. Starting at the top, stretch and push the rubber ring of the nosecup under the plastic retainer ring of the speaking diaphragm assembly.

3. Continue stretching the nosecup ring and work it into place.
4. For Ultravue masks only, stretch the oval opening in the nosecup around the lip on its component housing.

Spectacle Kit

Spectacle kits are available for the Ultravue (P/N 454819). The kit includes the support assembly, a rubber block, and the spectacle frame. Prescription lenses can be obtained locally or through MSA.

Adjusting the Spectacles

1. To move the spectacles closer to your face, pull the frame prongs out of the rubber block.

2. To move the spectacles farther from your face, push the frame prongs into the rubber block.

3. To move the spectacles up or down, slide the rubber block up or down on the support arms.



Attaching the Gas Mask Chin Canister to the Belt

This conversion kit consists of:

Quantity	Item	Part Number
1	Belt Clip	10068195
1	Breathing Tube	10068129
1	Belt	473902, 9961, 492827
1	Spark Cover	10068152

Installation Instructions

1. Attach the male thread end of the breathing tube securely to the facepiece component housing.
2. Slide the belt clip over the neck of the canister.
3. Securely fasten the female end of the breathing tube to the male end of the canister.
4. Attach the belt around the waist and attach the belt clip to the belt.

Spark Cover (Recommended for Belt-Mounted Chin Style Gas Mask Canisters)

1. Remove canister and spark cover from the packaging.
2. Attach the canister to the facepiece or breathing tube depending on the configuration being used.
3. Once the canister is attached, align the feet of the spark cover with the inlet hole of the canister.

4. Grasp the outside of the canister, twist and push on the spark cover. The spark cover will snap in place.



motion for attaching spark cover

ACCESSORIES

- To remove the spark cover, gently squeeze the outside of the cover, twist, and pull the spark cover off.



check for optional spark
arresting material

- Check the spark cover before each use to ensure no sparks have created holes or warped the part. If holes are created or the part is warped, replace the spark cover with a new one.

Note: The spark arresting material inside the spark cover is optional.

OTHER RESPIRATORY CONFIGURATIONS

This respirator can be used in other configurations that stated in these User's Instructions. Below is a list of these other configurations and the part number for the User's Instructions. Review the NIOSH matrix to verify the configuration that is being used is an approved configuration.

Approved Respirator	User Instruction Part Number
OptimAir 6HC PAPR	10045100
OptimAir 6A PAPR	490883
OptimAir MM2K PAPR	10020949

ULTRAVUE FACEPIECE

Facepiece Components - Models Shown: 7-203-1, 7-203-2, 7-203-3

FACEPIECE BLANK

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
471577	SMALL BLACK HYCAR	480223	MEDIUM BLACK SILICONE
480224	SMALL BLACK SILICONE	471580	LARGE BLACK HYCAR
468084	MEDIUM BLACK HYCAR	480225	LARGE BLACK SILICONE

◆ LENS RING (2 REQ'D)

470909	SMALL (GRAY)
462709	MEDIUM (BLACK)
470910	LARGE (GOLD)

◆ LENS RING REPLACEMENT KIT

471249	SMALL (GRAY)
464358	MEDIUM (BLACK)
471250	LARGE (GOLD)

▲ SILICONE NOSECUP ASS'Y

813138	SMALL
813139	MEDIUM
813140	LARGE

▲ HYCAR NOSECUP ASS'Y

471710	SMALL
471711	MEDIUM
471712	LARGE

▲ 462185 EXHALATION VALVE ASS'Y COMPLETE

▲ 461959 EXHALATION VALVE BODY ASS'Y (BODY & VALVE ONLY)

▲ 461958 EXHALATION VALVE BODY

▲ 82382 EXHALATION VALVE COVER

▲ 491124 VALVE SEAT (2 REQ'D)

▲ 491125 VALVE DISC

▲ 457190 BUCKLE ASS'Y WITH "D" RING (2 REQ'D)

▲ 96662 BUCKLE ASS'Y (3 REQ'D)

▲ 458173 HARNESS

▲ 470039 INLET ASS'Y With Speaking Diaphragm

● 96666 RETAINER RING

● 488875 SPEAKING DIAPHRAGM (Yellow/Black)

● 629935 "O" RING

● 473698 SPEAKING DIAPHRAGM HOUSING

★ 813103 DISC VALVE

★ 491934 GASKET VALVE SPIDER

★ 96547 ADAPTER ASS'Y

★ 3532 GASKET

● 96677 LENS

◆ 629657 NUT (2 REQ'D)

◆ 60532 SCREW (2 REQ'D)

● 458212 CLAMP

◆ NOSECUP ASS'Y (SHOWN IN POSITION)

ACCESSORIES

456975	COVER LENS (CLEAR) 25/PKG
454819	SPECTACLE KIT

WARRANTY

Mine Safety Appliances Company General Express Warranty and Terms of Sale

- 1. Express Warranty** - MSA warrants that the product furnished under this order is free from mechanical defects or faulty workmanship for a period of one (1) year from first use or eighteen (18) months from date of shipment, whichever occurs first, provided it is maintained and used in accordance with MSA's instructions and/or recommendations. This warranty does not apply to expendable or consumable parts whose normal life expectancy is less than one (1) year such as, but not limited to, non-rechargeable batteries, filament units, instrument filters, lamps, fuses, helmet suspensions, limited-use clothing, gloves, etc. or to products whose life is controlled by government regulations such as cylinders. Safety Products Division rubber products including, but not limited to, facepieces, head harnesses, and nose cups are warranted against defects in workmanship for dry rotting of the rubber for a period of 5 years from the date of manufacture. Replacement parts and repairs are warranted for ninety (90) days from the date of repair of the product or sale of the replacement part, whichever occurs first. MSA shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own or authorized service personnel or if the warranty claim results from misuse of the product. No agent, employee or representative of MSA may bind MSA to any affirmation, representation or modification of the

warranty concerning the goods sold under this contract. MSA makes no warranty concerning components or accessories not manufactured by MSA, but will pass on to the Purchaser all warranties of manufacturers of such components. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF: MSA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

- 2. Exclusive Remedy** - It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of MSA, or for any other cause of action, shall be the repair and/or replacement, at MSA's option, of any equipment or parts thereof, that after examination by MSA are proven to be defective. Replacement equipment and/or parts will be provided at no cost to the purchaser, F.O.B. MSA's plant. Failure of MSA to successfully repair any non-conforming product shall not cause the remedy established hereby to fail of its essential purpose.

- 3 Exclusion of Consequential Damages** - Purchaser specifically understands and agrees that under no circumstances will MSA be liable to Purchaser for economic, special, incidental or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of the nonoperation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against MSA.