MSA
The Safety Company

Operating Manual

G1 Air-Purifying Respirator (APR)

Full Facepiece Respirator

Order No.: 10158743/08

Print Spec: 10000005389 (F)

CR: 800000053916

MSAsafety.com

⚠ WARNING!

Read this manual carefully before using or maintaining the device. The device will perform as designed only if it is used and maintained in accordance with the manufacturer's instructions. Otherwise, it could fail to perform as designed, and persons who rely on this device could sustain serious injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed and used 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 additional information relative to use or repair, call 1-800-MSA-2222 during regular working hours.

For alternate languages, refer to part number 10162901.

MSA
The Safety Company

1000 Cranberry Woods Drive
Cranberry Township, PA 16066
USA
1-800-MSA-2222
1-800-967-0398

For your local MSA contacts, please go to our website www.MSAsafety.com

Contents

1 Safety Regulations

This respirator complies with the National Institute for Occupational Safety and Health (NIOSH) regulation under 42 CFR Part 84.

1.1 NIOSH Approval Information

⚠ WARNING!

Read and obey all NIOSH approval limitations.

Failure to follow this warning can result in serious personal injury or death.

1.1.1 Certifying Agency Contact Information

National Institute for Occupational Safety and Health (NIOSH)

Phone: 800-CDC-4636

1.2 NIOSH 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.

F- Do not use powered air-purifying respirators if airflow is less than four cfm (115 lpm) for tight fitting facepieces or six cfm (170 lpm) for hoods and/or helmets.

H- Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.

J- Failure to properly use and maintain this product could result in injury or death.

L- Follow the manufacturer's User Instructions for changing cartridges, canisters and/or filters.

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 surgical masks.

BB- Not for use for entry into atmospheres immediately dangerous to life or health.

CC- For entry, do not exceed maximum use concentrations established by regulatory standards.

FF- Respirators are to be fit tested prior to use with the heaviest cartridges, canisters, filters and/or accessories intended to be used. Fit testing should also be conducted while wearing all personal protective equipment intended to be used. See User's Instruction for fit test requirements.

1.3 NIOSH Cautions and Limitations of Use for Chemical, Biological, Radiological, and Nuclear (CBRN) Applications

A- Not for use in atmospheres containing less than 19.5 percent oxygen.

J- Failure to properly use and maintain this product could result in injury or death.

L- Follow the manufacturer's User Instructions for changing cartridges, canisters and/or filters.

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 Users Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

R- Some CBRN agents may not present immediate effects from exposure, but can result in delayed impairment, illness, or death.

T- Direct contact with CBRN agents requires proper handling of the respirator after each use and between multiple entries during the same use. Decontamination and disposal procedures must be followed. If contaminated with liquid chemical warfare agents, dispose of the respirator after decontamination.

V- Not for use in atmospheres immediately dangerous to life and health or where hazards have not been fully characterized.

W- Use replacement parts in the configuration as specified by the applicable regulations and guidance.

X- Consult manufacturer’s User Instructions for information on the use, storage, and maintenance of these respirators at various temperatures.

Y- This respirator provides respiratory protection against inhalation of radiological and nuclear dust particles. Procedures for monitoring radiation exposure and full radiation protection must be followed.

Z- If during use, and unexpected hazard is encountered such as a secondary CBRN device; pockets of entrapped hazard or any unforeseen hazard, immediately leave the area for clean air.

CC- For entry, do not exceed maximum use concentrations established by regulatory standards.

HH- When used at defined occupational exposure limits, the rated service time cannot be exceeded. Follow established canister change-out schedules or observe End-Of-Service-Life Indicators to ensure that canisters are replaced before breakthrough occurs.

QQ- Use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazard. Failure to do so may result in personal injury even when the respirator is properly fitted, used, and maintained.

UU- The respirator should not be used beyond eight (8) hours after initial exposure to chemical warfare agents to avoid possibility of agent permeation. If liquid exposure is encountered, the respirator should not be used for more than two (2) hours.

1.4 Important Notice for Respirator Users and Respiratory Protection Program Administrators

⚠ WARNING!

- This respirator provides LIMITED protection. A respirator paired with an appropriate particulate filter may help reduce exposure to airborne biological agents, including avian (bird) flu virus, other types of influenza, SARS, or other bacterial or viral biological agents, but WILL NOT ELIMINATE the risk of exposure, infection, illness, or death.
- This respirator is certified by NIOSH to comply with the requirements specified for the designated filter efficiency level; however, the government has NOT established a safe level of exposure to biological agents. Therefore, the respirator may NOT prevent transmission of influenza virus.
- Before occupational use of this respirator, a written respiratory protection program must be implemented meeting all the local government requirements. In the United States, employers must comply with OSHA 29 CFR 1910.134, which includes medical evaluation, training, and fit testing.
- An adequate respiratory protection program must include knowledge of hazards, hazard assessment, selection of correct respiratory protective equipment, instruction and training in the use of equipment, inspection and maintenance of equipment, and medical surveillance.
- This respirator will perform as designed only if it is used and maintained strictly according to the manufacturer's instructions, labels, and limitations. The Program Administrator and the users must read and understand these instructions before using or servicing this device.
- Do NOT substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by MSA.
- Examine the respirator regularly and maintain it according to the instructions in this manual. Only MSA trained repair technicians can do repairs.
- If the respirator does not operate as specified in this manual, remove it from service and return it to an MSA trained repair technician.
- This respiratory protective device does not supply oxygen. Use the device only in areas that have sufficient ventilation.
- Use this respirator with the correct air filtration cartridges/canisters for protection against specific chemical and/or particulate contaminants. Do NOT use this device if you cannot make sure that the air filtration cartridges/canisters are applicable for the contaminant. The respirator will not supply protection unless all inhaled air is pulled through an applicable air filtration cartridge/canister.
- Do NOT use this device if:
    - The identity of the contaminant is unknown.
    - The concentration of the contaminant is unknown.
    - The permissible exposure limit (PEL), recommended exposure limit (REL), and/or threshold limit value (TLV) of the contaminant is unknown.
- An approved professional must supply an applicable change-out schedule for air filtration cartridges/canisters, unless the cartridges/canisters have an end-of-service-life indicator. The change-out schedule must include all factors that have an effect on respiratory protection, including work practices and other conditions that are specific to the users' environment.
- If this respirator is used for protection against substances that have poor warning properties, there is no secondary method of notification about when to replace the air filtration cartridges/canisters. Obey applicable additional precautions to prevent overexposure, such as a more conservative change-out schedule or use of a supplied-air respirator (SAR) or self-contained breathing apparatus (SCBA).
- Do NOT use this device with urethane paints or other paints that have diisocyanates unless there is a change-out schedule for air filtration cartridges/canisters. Because of their poor warning properties, overexposure to these substances can occur without user awareness and result in severe permanent damage to the respiratory system.

- Go out of a contaminated area immediately if:- Breathing becomes difficult.- Dizziness or other distress occurs.- You taste or smell a contaminant.- You feel irritation of the nose or throat.- You are instructed to do so by responsible personnel.
- If you have a beard, large sideburns, or similar physical characteristics that prevent direct contact between your skin and the sealing surface of the facepiece, this device may not seal correctly with your face (refer to NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, and ANSI Z88.2, Practices for Respiratory Protection). An incorrect facial seal can let contaminants leak into the facepiece, decreasing or removing respiratory protection. Do NOT use this device if such conditions exist.
- Do a negative pressure seal test before each use.
- Individuals who wear eyeglasses must use the G1 spectacle kit to guarantee a correct fit. Ordinary eyeglasses cannot be worn under the facepiece.
- Do NOT use this device in explosive or flammable atmospheres.
- Do NOT use this respirator, or air filtration cartridges/canisters for protection against exposure to radiation. They may not supply sufficient protection.
- The respirator can help decrease exposure to airborne biological agents, including the H1N1 (swine) flu virus, avian (bird) flu virus, other types of influenza, severe acute respiratory syndrome (SARS), or other bacterial or viral biological agents, and the risk of influenza infection during a pandemic. This respirator does NOT remove the risk of exposure, infection, illness, or death.
- The respirator is certified by NIOSH to comply with the requirements specified for the designated filter efficiency level. Applicable authorities have not, however, set a safe level of exposure to biological agents. Therefore, the respirator may not prevent transmission of the influenza virus.
- Refer to the Centers for Disease Control and Prevention (CDC) at www.cdc.gov for guidance on the use of respirators to help decrease exposure to viral pathogens or other airborne biological agents in community, home, and occupational settings. The CDC recommends fit testing, medical evaluations, and training for optimal effectiveness when a respirator is used in a non-occupational setting. Neglecting these preparatory measures may cause an unsafe condition. Respirators used in an occupational setting MUST be used in accordance with a complete respiratory protection program as required by OSHA, which includes proper selection, training, fit-testing, and fit-checking. Detailed information on a respiratory protection program is available by contacting OSHA or visiting www.osha.gov.
- The CDC recommends frequent hand washing and wearing gloves to help prevent transmission of disease due to exposure to surfaces where contaminants may be present, and also immediately following removal of the respirator.
- Do NOT remove respirator in contaminated areas. The outer surface of the respirator MUST be treated as if it is contaminated at all times. A respirator will NOT prevent one from exposure to the flu or other airborne biological agents in other ways such as by touching the mouth, nose, or eyes with contaminated hands or objects. Biological agents, such as the flu virus, can be transmitted when infected individuals cough or sneeze and spread virus particles through the air to exposed surfaces which are touched. Tight-fitting safety goggles, or a full-facepiece respirator, may further help prevent transmission of viral pathogens or other airborne biological agents.
- The G1 APR Facepiece is equipped with an exhalation valve. The facepiece does not filter air that is exhaled by the user and this unfiltered air can enter the surrounding environment. Do not use where a sterile field is required without additional, appropriate source control measures in place. Consult CDC guidance.
- ALWAYS clean cartridge/canister-style respirators before use in accordance with the instructions in this manual.
- This respirator is NOT for use by (a) children or (b) people with a medical condition who may be adversely affected by using it.
- When filters are used in an application that makes sparks, make sure that the filters are protected by a shield. Sparks can cause damage to filters and decrease the level of protection.

- Do NOT remove the respirator until it and other protective clothing are decontaminated. Otherwise, exposure to contaminants can occur. In CBRN applications, this includes exposure to CBRN agents.
- Do NOT replace the air filtration cartridges/canisters in a contaminated area.
- Obey the decontamination and disposal procedures set by the applicable authorities.
- Make sure that there is no blockage of the air filtration cartridges/canisters.
- The respirator has no user-serviceable parts except as instructed in this manual.
- If the respirator falls to the ground during use, go out of the contaminated area immediately. Examine the device for damage. If the device is damaged, contaminants can get into the filtration system.

Failure to follow these warnings can result in serious personal injury or death.

1.5 For CBRN Application Only

⚠ WARNING!

- Do NOT use this device without the correct training and a complete understanding of its limitations. Misuse can prevent the respirator from supplying the necessary protection.
- This respirator supplies LIMITED protection. The device is approved by NIOSH for respiratory protection against atmospheres containing chemical, biological, radiological, and nuclear (CBRN) warfare agents; however, it cannot protect against all possible warfare agents.
- Use this device with the applicable personal protective equipment and clothing necessary to supply protection against dermal hazards.
- Wear impermeable protective clothing to prevent exposure to gases and vapors that can poison by skin absorption.
- Exposure to some CBRN agents may not show immediate effects, but can result in delayed impairment, illness, or death.
- CBRN agents may NOT be identified by smell or sight. Don the respirator before going into an area that may contain a CBRN agent. Obey the procedures set by the applicable authorities.
- Do NOT use this respirator for more than 8 hours after initial use in an atmosphere that contains CBRN agents or more than 2 hours after initial use in an atmosphere that contains CBRN agents in liquid or mist form. Otherwise, agent permeation can occur.

Failure to obey these warnings, in addition to all instructions and protective measures for CBRN agents, can result in serious injury or death.

1.6 References

For more information about the use and performance standards for the respirator, consult the following publications:

- ANSI Z88.2 latest edition, Practices for Respiratory Protection. American National Standards Institute, https://webstore.ansi.org/Info/Sdolist
- CAN/CSA-Z94.4 latest edition, Selection, Use, and Care of Respirators. CSA Group, https://store.csagroup.org/
- ISO 2230 latest edition, Rubber Products - Guidelines for Storage. International Organization for Standardization, https://www.iso.org/store.html
- NFPA 1500 latest edition, Standard on Fire Department Occupational Safety and Health Program, National Fire Protection Association, https://www.nfpa.org/Codes-and-Standards
- Title 29 CFR Part 1910, Occupational Safety and Health Standards, https://www.osha.gov/law-regs.html
- Title 29 CFR Part 1910.134, Respiratory Protection Standard, https://www.osha.gov.law-regs.html

1.7 Contact Information

For product concerns, contact your local MSA authorized repair center or distributor, who will provide the necessary information to MSA for issue resolution.

To report any serious concerns or to inquire about the products, use the following contact information:

MSA North America Corporate Center	MSA Canada	MSA de Mexico, S A De C V
1000 Cranberry Woods Drive Cranberry Township, PA 16066 Phone 1-800-MSA-2222 Fax 1-800-967-0398	16435 118th Avenue Edmonton AB T5V 1H2 Phone 1-800-MSA-2222 Fax 1-800-967-0398	Fraccionamiento Industrial Avenida Del Conde #6 76240 El Marques, Queretaro Phone 01 800 672 7222 Fax +52-44 2227 3943

1.8 Warranty

MSA - The Safety Company (MSA) warrants MSA G1 Air-Purifying Respirator (APR) to be free from defects in materials and/or faulty workmanship for a period of fifteen (15) years from the date of sale by MSA. This warranty applies to all components of the APR including all accessories and optional equipment purchased and supplied at the time of the original sale of the APR, except consumable parts, as defined by the terms of sale. MSA's obligation under this warranty is limited to the repair or replacement, at MSA's option, of the APR or components shown to be defective in either workmanship or materials.

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.

MSA shall be released from all obligations under this warranty in the event that repairs or modifications are made by persons other than its own or authorized service personnel, or if the warranty claim results from accident, alteration, misuse, or abuse.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTEES, EXPRESSED, IMPLIED, OR STATUTORY INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN ADDITION, MSA EXPRESSLY DISCLAIMS ANY LIABILITY FOR ECONOMIC, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY CONNECTED WITH THE SALE OR USE OF MSA PRODUCTS, INCLUDING, BUT NOT LIMITED TO, LOSS OF ANTICIPATED PROFITS.

2 Description

The G1 Air-Purifying Respirator (APR), hereafter referred to as respirator or device, is an air-purifying respirator for use in atmospheres which are not immediately dangerous to life or health (non-IDLH). Inhaled air is pulled through the air filtration cartridges/canisters, which contain adsorbents and a filter that removes or neutralizes specific contaminants. Exhaled air is released through the exhalation valve. This device is intended for applications where it is necessary for users to go into or work within a hazardous area for a limited time.

For NIOSH approval information, refer to the G1 APR Approval Insert (PN 10160485).

For information about approved configurations for the head harness, refer to Table 1 .

The device has the following components:

- G1 facepiece
- APR adapter (single or twin port)
- Air filtration cartridge/canister

The device has the following optional component:

- G1 spectacle kit

2.1 G1 Facepiece

The facepiece is available in three sizes (small, medium, large). The nosecup is available in three sizes (small, medium, large). The facepiece includes a large lens to optimize field of view and a mechanical speech diaphragm to enhance speech communication. When the facepiece is not connected to the APR adapter, an opening in the facepiece connection lets airflow bypass the inhalation and exhalation valves, which decreases breathing resistance and further enhances speech communication. The facepiece includes a broad range of head harness designs and material options. An optional spectacle kit is available.

2.2 APR/PAPR Adapters

The adapters let you attach air filtration cartridges/canisters to the facepiece.

Adapters connect to the facepiece with a push-to-connect (PTC) connection and disconnect from the facepiece with a release button.

Figure 1 APR Adapter, Single Port

Figure 2 APR Adapter, Twin Port

2.3 OptimAir TL Powered Air-Purifying Respirator (PAPR)

The OptimAir TL is a blower-assisted Powered Air-Purifying Respirator (PAPR).

Refer to the OptimAir TL user instructions (PN 10077289) for NIOSH approval information and Cautions and Limitations

2.4 Air Filtration Cartridges/Canisters

The air filtration cartridges/canister contains adsorbents and a filter that removes or neutralizes specific contaminants.

Figure 3 For Single Port Adapter

Figure 4 For Two Port Adapter

Figure 5 For OptimAir TL PAPR

2.5 G1 Spectacle Kit

The G1 spectacle kit lets users mount eyeglasses inside the facepiece. Individuals who wear eyeglasses must use the G1 spectacle kit to guarantee a correct fit. Eyeglasses cannot be worn under the facepiece without the G1 spectacle kit.

3 Size Selection

NOTE: Individuals who wear eyeglasses must use the G1 spectacle kit to guarantee a correct fit. Ordinary eyeglasses cannot be worn under the facepiece.

Regardless of facial dimensions and respirator sizing charts, users must do an actual qualitative or quantitative respirator fit test to make sure that the correct respirator size is selected.

1. Do a fit test of the respirator size relative to your facial features and dimensions. Ask the safety administrator or program manager for help selecting the initial size to try.
2. Don the respirator. Refer to 7 Donning for instructions.
3. Do a negative pressure seal test. Refer to 7.3 Testing the Negative Pressure Seal for instructions.
4. If the respirator does not pass the negative pressure seal test or feels uncomfortable, try the next nearest size relative to your face.
5. Passing the negative pressure seal test does not verify that the size is correct. Do a qualitative or quantitative respirator fit test to verify the size. If the respirator passes a negative pressure seal test but does NOT pass a respirator fit test, try the next nearest size.

3.1 Respirator Fit Test

⚠ WARNING!

- Do quantitative or qualitative respirator fit tests routinely for each wearer of this respirator.
- Obey all specified warnings and limitations.

Failure to follow these warnings can result in serious personal injury or death.

Refer to ANSI Z88.2 latest version, Practices for Respiratory Protection, and Title 1910.134, Respiratory Protection Standard, for information about respirator fit tests.

In addition to regular respirator fit tests, do a qualitative or quantitative respirator fit test after repairs or maintenance.

NOTE: The selection of a fit test method can have an effect on the maximum use concentration.

Use the instructions and adapter in a Quik Chek Kit (PN 805078) to do respirator fit testing.

3.1.1 Quantitative Test

For use in a CBRN application, a fit factor of at least 2000, based on ambient aerosol fit test methods or equivalent, is necessary before any type of respirator is assigned to an individual.

3.1.2 Qualitative Test

Only validated protocols are acceptable. The respirator must pass a test designed to assess a fit factor of at least 2000.

4 Visual Examinations

WARNING!

- Do NOT examine the respirator before it is decontaminated, cleaned, and disinfected if there is a risk of exposure to contaminants. Obey the applicable decontamination procedures, clean and disinfect the respirator, then examine it.
- If the respirator shows any of the conditions listed in Section 4 Visual Examinations, remove the respirator from service and return it to an MSA trained repair technician.
- Do NOT substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by MSA.

Failure to follow these warnings can result in serious personal injury or death.

Do a visual inspection upon receipt, and before and after each use.

Examine the entire respirator after it is decontaminated, cleaned and disinfected.

4.1 All Components

Examine all components for deterioration, dirt, cracks, debris, tears, holes, stickiness, heat- or chemical-related damage, or other signs of damage.

Make sure that the respirator is complete and assembled correctly. Refer to 6 Preparing for Use for instructions.

Do all of the following component-specific inspections.

4.2 Facepiece

Examine the lens for cracks, scratches, deformation, or color changes.

Make sure that the facepiece rubber has a tight seal and is attached to the lens ring tightly.

Make sure that the exhalation valve is clean and operates easily. Make sure that the valve moves off the seat and returns when released (from inside the facepiece).

Examine the facepiece inlet for damage. Make sure that the inhalation valve is in position.

Examine the nosecup to make sure that the check valves or air guides are in position. Make sure that the nosecup is attached to the component housing tightly.

Examine the nosecup, inhalation port, inhalation valves, exhalation valves, and exhalation port for dust, Kevlar fibers, and other debris. If necessary, refer to 10 Cleaning and Disinfecting for instructions to clean these components.

Make sure that the straps for the head harness are not torn, cut, worn, fraying, or missing buckles.

4.3 APR Adapter

4.3.1 Single Port

Examine the APR adapter for cracks, scratches, deformation, or color changes.

Examine the adapter gasket (green), O-ring, and seal ring for wear or damage.

Remove the adapter cover to examine the exhalation valve. Make sure that the valve moves off the seat and returns when released.

Examine the Rd 40 threads for damage.

4.3.2 Twin Port

Examine the APR adapter for cracks, scratches, deformation, or color changes.

Examine the adapter gasket (orange), O-ring, and seal ring for wear or damage.

Remove the adapter cover to examine the exhalation valve. Make sure that the valve moves off the seat and returns when released.

Examine the bayonets for damage.

4.4 Air Filtration Cartridge(s)/Canister

4.4.1 Single Port Cartridge(s)/Canister

Examine the air filtration cartridge(s)/canister for cracks, scratches, deformation, or color changes.

Examine the Rd 40 threads for damage.

Look at the label on the air filtration cartridge(s)/canister to make sure that the shelf life has not expired.

4.4.2 Twin Port Cartridges

Examine the air filtration cartridges for cracks, scratches, deformation, or color changes.

Look at the label on the air filtration cartridge to make sure that the shelf life has not expired.

4.4.3 OptimAir TL PAPR

Refer to the OptimAir TL user instructions (PN 10077289) for NIOSH approval information and Cautions and Limitations.

5 Before Use

5.1 Respirator Use Limitations

⚠ WARNING!

- An approved professional must supply an applicable change-out schedule for air filtration cartridges/canisters, unless the cartridges/canisters have an end-of-service-life indicator. The change-out schedule must include all factors that have an effect on respiratory protection, including work practices and other conditions that are specific to the users' environment.

- If this respirator is used for protection against substances that have poor warning properties, there is no secondary method of notification about when to replace the air filtration cartridges/canisters. Obey additional precautions to prevent overexposure, such as a more conservative change-out schedule or use of an SAR or SCBA.

Failure to follow these warnings can result in serious personal injury or death.

This is an approved air-purifying respirator ONLY when it is used in an approved configuration. For information about approved configurations, refer to the G1 APR Approval Insert (PN 10160485). For information about approved configurations for the head harness, refer to Table 1 . Do not exceed the maximum use concentrations set by regulatory standards.

Users must comply with the following MSA respirator use limitations.

Do not exceed the following maximum use concentrations during use:

- 50 times the exposure limit for the contaminants in the environment if a quantitative fit test is used. Using a qualitative fit test can decrease the maximum use concentration.
- Immediately dangerous to life or health (IDLH) concentration for any contaminant in the environment.

The following is a PARTIAL list of substances that have poor warning properties.

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

5.2 Exposure Limits

Refer to the applicable exposure limits from the following sources:

- 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.

5.3 Mixtures of Contaminants

⚠ WARNING!

If any one contaminant in a mixture is the same as or more than the IDLH concentration, the entire mixture is IDLH. Do NOT use the respirator, except for escape when the respirator is used in a gas mask configuration.

Failure to follow this warning can result in serious personal injury or death.

NIOSH approves of mixing the following contaminants: organic vapors, chlorine, chloride dioxide, hydrogen sulfide, sulfur dioxide, ammonia, and carbon monoxide.

Particulates can be mixed with any other particulate or any gas or vapor for which the air filtration cartridges/canisters are approved.

This respirator can be used for protection against a mixture of contaminants in an environment at the same time or against one contaminant then another (using the same air filtration cartridges/canisters) ONLY in the following conditions:

- The air filtration cartridges/canisters are approved for all contaminants in the environment.
- Contaminants in the environment at the same time are less than the IDLH levels for the specific contaminants.

5.4 Exposure Limits for Mixtures

ACGIH publishes the following information to calculate the threshold limit value (TLV) of a mixture:

First, use the following formula to calculate the total concentration of the chemical mixture ($C_{Mixture}$) from the individual contaminant concentrations (C1, C2, C3...):

($C_{Mixture}$) = C1+C2+C3…

Use the following formula to calculate the TLV of the mixture, where T1, T2, T3, ... are the individual contaminant TLVs and C1, C2, C3... are the individual contaminant concentrations:

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

Use these equations ONLY if the contaminants in the environment are actually mixed. Some substances do not mix and may be in the environment separately, for example, in pockets or at different levels. In that case, use the lowest TLV of the substances in the environment to find the applicable respirator category for protection against all contaminants in the environment.

6 Preparing for Use

Make sure that the device does not have any of the conditions listed in 4 Visual Examinations.

Make sure that there are no parts missing from the assembled device.

Make sure that the device is in an approved configuration. For information about approved configurations, refer to the G1 APR Approval Insert (PN 10160485).

Make sure that the air filtration cartridges/canisters are approved for and effective against all contaminants in the environment.

Make sure that the head harness is in an approved configuration.

Head Harness		Neck Strap			
Model #	**Description**	**Model #**	**Description**	**Model #**	**Description**
		7-2830-1	Rubber	7-2829-1	Cloth
7-2776-1	4-Point Kevlar (Yellow)	Approved		Approved	
7-2777-1	5-Point Kevlar (Yellow)	Approved		Approved	
7-2778-1	5-Point Rubber	Approved		Approved	
7-3104-1	4-Point Cloth (Black)	Not approved		Approved	
7-2917-1	5-Point Kevlar Alternate (Yellow)	Approved		Approved	

Table 1 Approved configurations for the head harness

6.1 Installing the APR/PAPR Adapter (Single and Twin Port)

1. Push the APR adapter inward until you hear a click when it engages correctly in the facepiece. When the APR adapter is installed correctly and the facepiece is held in the as-worn position, the MSA logo is aligned horizontally.

2. Pull on the APR adapter to make sure that it is attached tightly to the facepiece.

6.2 Installing/Replacing Air Filtration Cartridges/Canisters

⚠ WARNING!

- Use this respirator with the correct air filtration cartridges/canisters for protection against specific chemical or particulate contaminants. Do NOT use this device if you cannot make sure that the air filtration cartridges/canisters are applicable for the contaminant. The respirator will not supply protection unless all inhaled air is pulled through applicable air filtration cartridges/canisters.
- Do NOT use air filtration cartridges/canisters with an expired shelf life.
- Do NOT use the air filtration cartridges/canisters if the packaging is opened, damaged, or missing. Make sure that the air filtration cartridges/canisters are in its original packaging before use in a contaminated environment.
- Do NOT replace the air filtration cartridges/canisters in a contaminated area.
- Obey the decontamination and disposal procedures set by the applicable authorities.

Failure to follow these warnings can result in serious personal injury or death.

6.2.1 Single Port (APR/PAPR)

Use the air filtration cartridges/canisters immediately after removing them from the packaging.

Replace the air filtration cartridges/canisters after each use.

Discard used air filtration cartridges/canisters according to the decontamination and disposal procedures set by the applicable authorities.

Obey the change-out schedule for the air filtration cartridges/canisters.

When used at specified occupational exposure limits, do NOT exceed the rated service time.

1. Remove the air filtration cartridges/canisters from the packaging.
2. Make sure that the air filtration cartridges/canisters are not damaged.
3. Make sure that the air filtration cartridges/canisters are applicable for use against all contaminants in the environment.
4. Look at the label on the air filtration cartridges/canisters to make sure that the shelf life has not expired. If the shelf life has expired, do NOT use the air filtration cartridges/canisters.

5. Attach the air filtration cartridges/canisters to the facepiece port and hand-tighten it.

6.2.2 Twin Port (APR Only)

Use the air filtration cartridges immediately after removing them from the packaging.

Replace the air filtration cartridges after each use.

Discard used air filtration cartridges according to the decontamination and disposal procedures set by the applicable authorities.

Obey the change-out schedule for the air filtration cartridges.

When used at specified occupational exposure limits, do NOT exceed the rated service time.

1. Remove the air filtration cartridges from the packaging.
2. Make sure that the air filtration cartridges are not damaged.
3. Make sure that the air filtration cartridges are applicable for use against all contaminants in the environment.
4. Look at the label on the air filtration cartridges to make sure that the shelf life has not expired. If the shelf life has expired, do NOT use the air filtration cartridges.

5. Attach the air filtration cartridges to the facepiece port.
   a. Align the small lug on the connector with the match-mark on the cartridge body to mate the cartridge cutouts with the bayonet lugs.
   b. Turn the cartridge clockwise until tight.

7 Donning

⚠ WARNING!

- If you have a beard, large sideburns, or similar physical characteristics that prevent direct contact between your skin and the sealing surface of the facepiece, this device may not seal correctly with your face (refer to NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, and ANSI Z88.2, Practices for Respiratory Protection). An incorrect facial seal can let contaminants leak into the facepiece, decreasing or removing respiratory protection. Do NOT use this device if such conditions exist.
- Do a negative pressure seal test before each use and before going into a toxic atmosphere.
- Make sure that the correct nosecup is installed in the facepiece. Refer to the G1 APR Approval Insert (PN 10160485) for information about approved configurations.
- Individuals who wear eyeglasses must use the G1 spectacle kit to guarantee a correct fit. Ordinary eyeglasses cannot be worn under the facepiece.
- Wear impermeable protective clothing to prevent exposure to gases and vapors that can poison by skin absorption.
- Only remove the respirator in a safe, nonhazardous, nontoxic atmosphere.

Failure to follow these warnings can result in serious personal injury or death.

Make sure that the APR adapter and applicable air filtration cartridges/canisters are installed before you don the respirator.

When the respirator is adjusted correctly, the user should not taste or smell the contaminant, or feel irritation of the eyes, nose, or throat. The user's inhalation resistance should be as experienced during training.

7.1 Donning in Normal Weather

⚠ WARNING!

- Make sure that the top of the facepiece seal is in direct contact with your forehead.
- Make sure that there is no hair between the facepiece seal and your skin.

Failure to follow these warnings can result in serious personal injury or death.

⚠ CAUTION!

For the Single Port: Hold the respirator by the cartridges/canisters, NOT by the APR adapter.

For the Twin Port: Hold the respirator by the APR adapter, NOT by the cartridges.

Failure to follow these cautions can result in minor or moderate injury.

1. Make sure that the respirator is correctly prepared for use. Refer to 6 Preparing for Use

2. Loosen all of the head harness straps to within ¼ in. from the buckles.

3. For donning in cold weather, you MUST hold your breath before you start to put the facepiece in position in the following step until after you tighten the harness straps in Step 10. If you do not, the facepiece can fog immediately.

4. Open the head harness with both hands and pull it over your head.

5. Pull down on the head harness pull tab.

6. Make sure that the head harness is flat on the back of your head.

7. Make sure that the head harness straps are not twisted.

8. Hold the respirator while you put the top of the nosecup in position on the bridge of your nose. Make sure that the nosecup is centered on your face. Make sure that the nosecup does not prevent you from seeing clearly.

9. Make sure that your chin is fully engaged in the chin cup.

10. While you hold the respirator in position over your face, tighten the head harness straps one at a time in the following order. Tighten the straps by pulling straight back, not out away from the head.
    a. Both lower harness straps (neck)
    b. Both upper harness straps (temple)
    c. Top strap

NOTE: The 4-point head harness does not have an adjustable top strap.

11. For donning in cold weather, release your breath.
12. If necessary, tighten all straps a second time to make sure that the facepiece is tight.
13. Make sure that you can feel firm, even pressure from the nosecup to all points of contact with your face.

14. Make sure that the head harness tabs are flush to the face and not folded under the facepiece seal or head harness straps.
15. Make sure that the head harness straps do not cut into your ears.
16. Do a negative pressure seal test. Refer to 7.3 Testing the Negative Pressure Seal.

7.2 Donning in Cold Weather

Users must fully know how to don the respirator in cold weather before using this respirator in cold weather.

Use the instructions in 7.1 Donning in Normal Weather to don the respirator. For donning in cold weather, you MUST hold your breath (7.1 Donning in Normal Weather, Step 3) before you start to put the facepiece in position in Step 4 until after you tighten the harness straps in Step 10. If you do not, the facepiece can fog immediately.

To prevent the facepiece lens from fogging in cold weather, keep facial perspiration to a minimum before donning the respirator.

7.3 Testing the Negative Pressure Seal

⚠ WARNING!

- If the facepiece does not hold a negative pressure seal, remove the respirator from service and return it to an MSA trained repair technician.
- Do a negative pressure seal test before each use and before going into a toxic atmosphere.

Failure to follow these warnings can result in serious personal injury or death.

To make sure that the face-to-facepiece tightness is correct, do a negative pressure seal test before each use.

7.3.1 Single Port

1. Use the palm of your hand to seal the inlet to the air filtration cartridge/canister.

2. Inhale and hold your breath for 10 seconds. Make sure that the facepiece stays collapsed on your face.
3. Exhale. Make sure that the exhalation valve opens and the pressure inside the facepiece is released.
4. If necessary, retighten the straps.

7.3.2 Twin Port

1. Use the palms of your hands to seal each inlet to the air filtration cartridges.

2. Inhale and hold your breath for 10 seconds. Make sure that the facepiece stays collapsed on your face.
3. Exhale. Make sure that the exhalation valve opens and the pressure inside the facepiece is released.
4. If necessary, retighten the straps.

8 During Use

WARNING!

- Do NOT use the respirator if any of the following conditions occur:
  - The negative pressure seal test is unsuccessful.- The device is damaged.
  - Correct servicing/maintenance has not been done.
  - Genuine MSA replacement parts have not been used.
- Go out of a contaminated area immediately if:
  - Breathing becomes difficult.- Dizziness or other distress occurs.
  - You taste or smell a contaminant.- You feel irritation of the nose or throat.
  - The respirator does not operate according to the instructions or training.
- Return to a safe atmosphere immediately if discoloration, crazing, blistering, cracking, or other deterioration of the facepiece lens material occurs.
- This respiratory protective device does not supply oxygen. Use the device only in areas that have sufficient ventilation.

Failure to follow these warnings can result in serious personal injury or death.

8.1 Cold Weather Operation

WARNING!

Before going into a hazardous environment, make sure that there is no water, moisture, or dampness on or in any of the respirator components. Any moisture on or in the respirator components can freeze and result in a malfunction of the respirator. Make sure that all components operate correctly.

Failure to follow this warning can result in serious personal injury or death.

Water inside the facepiece, APR adapter, or air filtration cartridges/canisters can freeze into ice and restrict airflow. Make sure that moisture does NOT go into the facepiece, APR adapter, or air filtration cartridges/canisters when they are not in use.

In cold weather, use the instructions in 7.2 Donning in Cold Weather to don the respirator.

9 After Use

WARNING!

- Do NOT doff the respirator until the respirator and protective clothing are decontaminated. Otherwise, exposure to contaminants can occur.
- Do NOT examine the respirator before it is decontaminated, cleaned, and disinfected if there is a risk of exposure to contaminants. Decontaminate, clean and disinfect the respirator first, then examine it.
- Be careful with used air filtration cartridges/canisters, which can contain the contaminant that was in the atmosphere during use.
- Obey the decontamination and disposal procedures set by the applicable authorities.

Failure to follow these warnings can result in serious personal injury or death.

When protective equipment has been decontaminated, discard it as required by federal, state, and/or local laws.

9.1 Doffing the Respirator

9.1.1 Single Port

1. Use your fingers to pull the buckles on the head harness forward and loosen them.

2. Holding the cartridge/canister, pull the head harness forward over your head.

3. Holding the cartridge/canister, pull the respirator away and down from your face.

9.1.2 Twin Port

1. Use your fingers to pull the buckles on the head harness forward and loosen them.

2. Holding the APR adapter, pull the head harness forward over your head.

3. Holding the APR adapter, pull the respirator away and down from your face.

10 Cleaning and Disinfecting

⚠ WARNING!

- Do NOT use cleaning substances that can or might attack any part of the device.
- Do NOT use alcohol, which can cause deterioration of rubber parts.
- Do NOT touch or inhale contaminants.
- Make sure to rinse components thoroughly. The residue from cleaning agents can cause skin irritation.
- Make sure that there is no water, moisture, or dampness on or in the device components before returning the device to service. Any moisture on or in the device components can freeze and result in a malfunction of the device.
- Failure to clean and decontaminate the respirator correctly after each use can cause overexposure to contamination and result in illness, disease, or death.

Failure to follow these warnings can result in serious personal injury or death.

Make sure that a designated person or the user cleans the device after each use. ANSI standards recommend that users be trained in the cleaning procedure.

MSA recommends the use of Confidence Plus Germicidal Cleaner (PN 10009971), which cleans and disinfects components in one operation; retains its germicidal efficiency in hard water to inhibit the growth of bacteria; and will not deteriorate rubber, plastic, glass, or metal parts. Refer to the label to prepare the Confidence Plus Germicidal Cleaner.

If the device has heavy smoke residue or dirt accumulation, use a damp sponge with a mild soap solution or a soft/medium bristle brush to remove deposits that may interfere with normal operation of the harness (straps and buckles) or APR adapter.

If the Confidence Plus Germicidal Cleaner is not used, wash components in a mild cleaning solution and make sure to rinse them thoroughly. When cleaning the respirator in normal weather, submerge the facepiece in a germicide solution for the manufacturer's recommended time.

10.1 Facepiece

⚠ WARNING!

- Do NOT use cleaning products that contain hydrocarbons or solvents such as nitro-thinner.
- Do NOT use radiant heat such as the sun or radiators to dry cleaned parts.
- When a drying cabinet is used, make sure that the temperature is not more than 140°F (60°C).
- Do a negative pressure seal test after every cleaning, disinfecting, and maintenance procedure, and after every exchange of parts.

Failure to follow these warnings can result in serious personal injury or death.

It is only necessary to clean and disinfect the facepiece after each use.

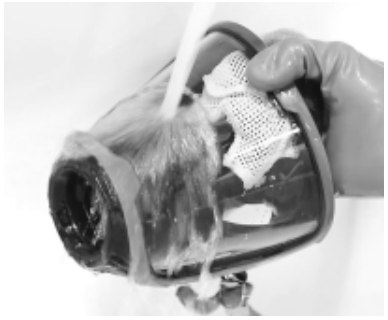
1. Use the instructions on the label to prepare a solution of Confidence Plus Germicidal Cleaner (PN 10009971) in a bucket or sink.

2. Remove the air filtration cartridges/canisters from the APR adapter.

3. Remove the APR adapter from the facepiece.

   NOTE: The head harness can be cleaned as part of the facepiece or removed to be cleaned separately.

4. Submerge the facepiece in the solution of Confidence Plus Germicidal Cleaner for a minimum of 30 seconds.If necessary, use a soft brush or sponge to clean the facepiece.



5. Rinse the facepiece and components thoroughly in clean water that is not more than 110°F (43°C) and is preferably running and draining.

6. To clean and rinse the pressure-demand exhalation valve, use a blunt object to push in on the stem and flush the valve with clean water.
7. Let the facepiece air-dry. Do not put parts near a heater or in direct sunlight to dry.
8. Operate the exhalation valve manually to make sure that it operates correctly.
9. Do a negative pressure seal test before returning the facepiece to service.

10.2 APR Adapter

⚠ WARNING!

- Do NOT use cleaning products that contain hydrocarbons or solvents such as nitro-thinner.
- Do NOT use radiant heat such as the sun or radiators to dry cleaned parts.
- When a drying cabinet is used, make sure that the temperature is not more than 140°F (60°C).
- Do a negative pressure seal test after every cleaning, disinfecting, and maintenance procedure, and after every exchange of parts.

Failure to follow these warnings can result in serious personal injury or death.

10.2.1 Single Port

1. Use the instructions on the label to prepare a solution of Confidence Plus Germicidal Cleaner (PN 10009971) in a bucket or sink.

2. Remove the adapter cover.

3. Submerge the adapter in the solution of Confidence Plus Cleaner for a minimum of 30 seconds. If necessary, use a sponge or soft brush to clean the adapter.

4. Submerge the adapter cover in the solution of Confidence Plus Cleaner for a minimum of 30 seconds. If necessary, use a sponge or soft brush to clean the adapter cover.

5. Rinse the adapter and adapter cover thoroughly in clean water that is not more than 110°F (43°C) and is preferably running and draining.

6. Let the adapter and adapter cover air-dry. Do NOT put parts near a heater or in direct sunlight.

7. Operate the exhalation valve manually to make sure that it operates correctly.

8. Install the adapter cover.

9. Make sure that the adapter connects to the facepiece correctly.
10. Do a negative pressure seal test before returning the facepiece to service.

10.2.2 Twin Port

1. Use the instructions on the label to prepare a solution of Confidence Plus Germicidal Cleaner (PN 10009971) in a bucket or sink.

2. Remove the adapter cover.

3. Submerge the adapter in the solution of Confidence Plus Cleaner for a minimum of 30 seconds. If necessary, use a sponge or soft brush to clean the adapter.

4. Submerge the adapter cover in the solution of Confidence Plus Cleaner for a minimum of 30 seconds. If necessary, use a sponge or soft brush to clean the adapter cover.

5. Rinse the adapter and adapter cover thoroughly in clean water that is not more than 110°F (43°C) and is preferably running and draining.
6. Let the adapter and adapter cover air-dry. Do NOT put parts near a heater or in direct sunlight.

7. Operate the exhalation valve manually to make sure that it operates correctly.

8. Install the adapter cover.

9. Make sure that the adapter connects to the facepiece correctly.
10. Do a negative pressure seal test before returning the facepiece to service.

11 G1 Spectacle Kit

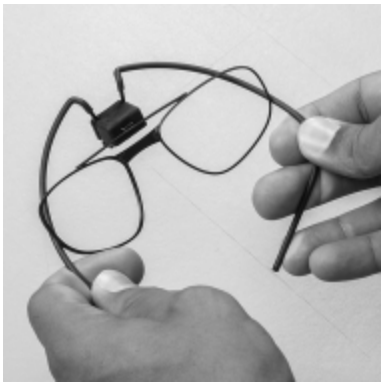
WARNING!

Before using a spectacle kit, an optometrist must examine the spectacle kit and prescribe the correct lenses to fit into the lens frame on the spectacle kit.

Failure to follow this warning can result in serious personal injury or death.

1. Turn the head harness over the front of the facepiece so the harness covers the lens of the facepiece.

   This will open up the faceblank to make it easier to install the spectacle kit.



2. Squeeze in on the wire frame of the spectacle kit at the large bends about 2 in. (5 cm) from the ends.

3. Push the top part of the wire frame into the lens of the facepiece.

   The faceblank has three rubber tabs made to grab the wire frame.

4. Push one end of the wire frame up into the facepiece so the frame is in position along the edge where the lens and faceblank meet.

5. Make sure the end of the wire frame is in position in the small pockets in the faceblank on the edge of the lens.
6. Do Steps (4) and (5) on the opposite side.

7. Don the facepiece.
8. Adjust the lens frame up/down and in/out to optimize fit and visibility.

12 Maintenance

Make sure that this device is examined and serviced regularly by an MSA trained repair technician.

MSA is liable only for maintenance and repairs performed by MSA.

Use only genuine MSA replacement parts.

Changes to devices or components are not permitted and will result in unapproved configurations.

Keep detailed inspection and service records.

13 Safekeeping and Storage

⚠ WARNING!

Do NOT keep air filtration cartridges/canisters in a storage area with temperatures that are more than 120°F (49°C).

Failure to obey this warning can change the performance of the air filtration cartridges/canisters and result in serious personal injury or death.

Only keep respirators without damage for further use.

When not in use, keep the respirator in cool, dry, clean ambient air in the original packaging.

Keep new air filtration cartridges/canisters in the original packaging.

Discard air filtration cartridges/canisters if the original packaging or carton is open or damaged.

Do not distort the facepiece during storage.

Discard the respirator and its components in accordance with local, state, and federal regulations.

13.1 Facepiece

⚠ WARNING!

To prevent damage to the facepiece, do NOT keep loose objects in the facepiece container.

Failure to follow this warning can result in serious personal injury or death.

Use a pouch or container to keep the facepiece safe.

MSA rubber products are protected by an anti-aging agent that can become visible as a light coating. This coating is harmless and can be removed during cleaning.

To extend the life of rubber components, keep them in a cool, dry place that is protected from ultraviolet radiation, according to ISO 2230, Rubber Products – Guidelines for Storage.

13.2 CBRN Applications

Keep air filtration cartridges/canisters in the original, unopened foil bag and the original, unopened carton.

Keep the facepiece in the bag (PN 10160855) or storage pouch (Model number 7-2954-1).

13.3 Shelf Life

⚠ WARNING!

Do NOT use air filtration cartridges/canisters with an expired shelf life.

Failure to follow this warning can result in serious personal injury or death.

Obey the shelf life expiration date stamped on the carton, packaging, and/or air filtration cartridges/canisters. The expiration date applies ONLY if the air filtration cartridges/canisters are factory sealed and not damaged. Otherwise, discard the air filtration cartridges/canisters.

For gas mask application only, see Storage and Shelf Life information below.

13.3.1 Storage and Shelf Life for Gas Mask Application

Canister Part Numbers:

- 10059903
- 10067469
- 10067491
- 10067470

NOTE: When stored unopened in 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 with a reduced shelf life by using the following procedure.

Approved Storage Configurations Outside the Original Foil Packaging

Storage Option 1: Storage without using the hard case for gas masks (case sold separately)

1. Remove the canister from the box and bag.
2. Locate the white block on the canister label.
3. Mark on the canister, in the white block, an expiration date of 1 year (for formaldehyde canister, PN 10067470, an expiration date of 6 months) from the date the canister was removed from the packaging. This expiration date must not to exceed the original expiration date printed on the foil packaging.

Figure A

Figure B

4. 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.

5. Insert the plug end on the inlet of the canister as shown.

6. 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.
7. Discard cap/plug after each use.
8. Store the facepiece per guidelines in 13.1 Facepiece

Storage Option 2: Storage using the hard case for gas masks (case sold separately)

NOTE: The hard case is sold separately. The part numbers listed are hard cases available for purchase.

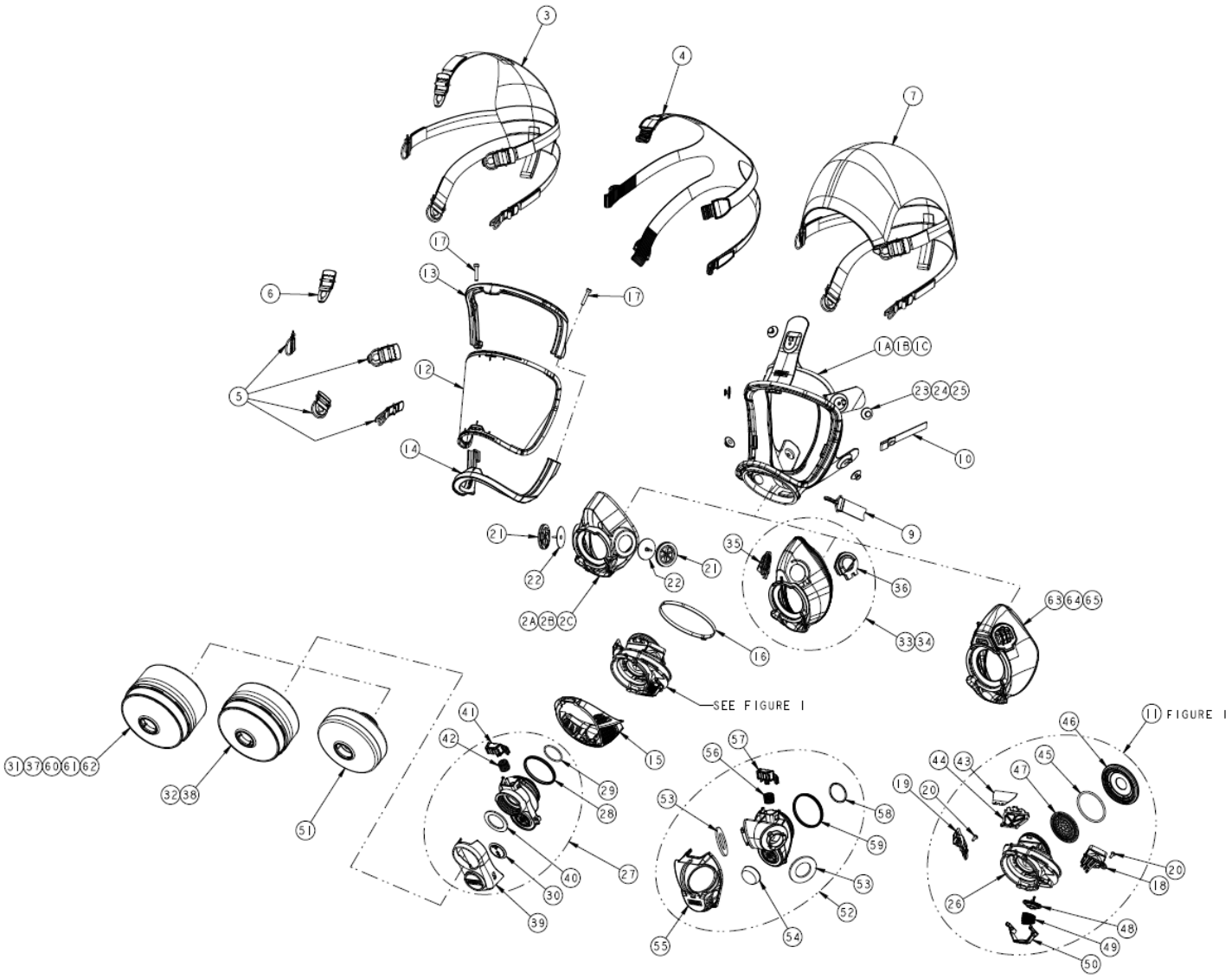
- 10075204 Phosphine/Ammonia/Chlorine/P100
- 10075205 Hydrogen Fluoride/P100
- 10075206 Formaldehyde/Chlorine/Sulfur Dioxide/Chlorine Dioxide/Hydrogen Sulfide/P100
- 10075207 Organic Vapor/P100

1. Remove the canister from the box and bag.
2. Locate the white block on the canister label.
3. Mark on the canister, in the white block, an expiration date of 1 year (for formaldehyde canister, PN 10067470, an expiration date of 6 months) from the date the canister was removed from the packaging. This expiration date must not to exceed the original expiration date printed on the foil packaging.

4. The canister must be attached to the facepiece with the plug side of the cap and plug component secured into position.

5. The respirator must be placed upright in the plastic case.
6. Ensure the lid is snapped tight and the case is closed.

14 Ordering Information



Item	Quantity	Description	Part Number
1A	1	Faceblank Small	10149577-SP
1B	1	Faceblank Medium	10149578-SP
1C	1	Faceblank Large	10149579-SP
2A	1	G1 Nose Cup Small	10149572-SP
2B	1	G1 Nose Cup Medium	10149573-SP
2C	1	G1 Nose Cup Large	10149574-SP
3	1	Harness, 5 Pt Adjustable	10144216-SP
4	1	Harness, Rubber	10144214-SP

Item	Quantity	Description	Part Number
5	4	Buckle D-Ring	10149551-SP
6	1	Buckle	10144217-SP
7	1	Harness, 4 Pt Adjustable, Polyester	10182346
8	1	Harness, 4 Pt Adjustable, Kevlar	10144215-SP
9	1	Neck Strap, Cloth	10144220-SP
10	1	Neck Strap, Rubber	10159699-SP
11	1	Component Housing Assembly	10144184-SP
12	1	Lens	10144194-SP
13	1	Lens Ring, Upper	10144195-SP
14	1	Lens Ring, Lower	10144196-SP
15	1	Cover, Component Housing	10144187-SP
16	1	Clamp, Component Housing	10144222-SP
17	2	Screw, Lens Ring	10144221-SP
18	1	Lightpipe Assembly, Left	10144180-SP
19	1	Lightpipe Assembly, Right	10144204-SP
20	2	Screw Delta Pt Screw Wn 5451, 30x8	10144233-SP
21	2	Inlet Valve Seat	10144192-SP
22	2	Inlet Valve	10144193-SP
23	5	Button, Headharness, Black	10144219-SP
24	5	Button, Headharness, Gray	10144235-SP
25	5	Button, Headharness, Green	10144234-SP
26	1	Component Housing	10144197-SP
27	1	Filter Adapter Assembly	10144231-SP
28	1	Gasket, Seal Ring	10146238-SP
29	1	O-Ring, Silicone,70d, Size 024, Orange	10153639-SP
30	1	Valve, Exhalation	10025295
31	1	OV-P100 Canister	10067469
32	1	GME P100 Cartridge	10160594
33	1	G1 CBRN Nosecup, Small/Medium	10189323
34	1	G1 CBRN Nosecup, Large	10189322
35	1	CBRN Airguide, Right	10191618
36	1	CBRN Airguide, Left	10191617
37	1	CBRN Canister	10046570
38	1	OV/P100/CS/CN Riot Control Canister	10152979
39	1	Cover, Filter Adapter	10194547

Item	Quantity	Description	Part Number
40	1	Washer, RD40, Green	10194548
41	1	Button, Filter Adapter	10194549
42	1	Spring, Button	10146237-SP
43	1	Inhalation Valve	10144207-SP
44	1	Retainer, Inhalation Valve	10144208-SP
45	1	O-Ring, 46 mm ID x 2.5 mm Thick	10144232-SP
46	1	Screw Ring	10144213-SP
47	1	Speaking Diaphragm	10144209-SP
48	1	Exhalation Valve Assembly	10144174-SP
49	1	Spring, Exhalation Valve	10144179-SP
50	1	Retainer, Exhalation Valve	10144177-SP
51	1	P100 Cartridge	495692
52	1	Filter Adapter Assembly (Twin Port)	10199720
53	2	Washer	10018496
54	1	Valve, Exhalation	10025295
55	1	Cover, Filter Adapter (Twin Port)	10199783
56	1	Spring, Button	10146237
57	1	Button, Filter Adapter	10144226
58	1	O-Ring	10153639
59	1	Gasket, Seal Ring	10018496
60	1	Canister, P100 PH/AM/CL	10059903
61	1	Canister, P100 HF/CL	10067491
62	1	Canister, P100 FM/AG/CD/HS	10067470
63	1	G1 Universal Nosecup, Small	10219326
64	1	G1 Universal Nosecup, Medium	10219327
65	1	G1 Universal Nosecup, Large	10219328
	1	Snoop Leak Detector	600920