



## Gas Masks for Law Enforcement

[ Respiratory Protection for Homeland Security ]

**MSA**

# MSA's Gas Masks: from Military Warfare to Civil Unrest to CBRN Threats

## introduction

**MSA has been making gas masks since World War I.**

### [ Military Warfare ]

Over 7 million MSA Gas Masks, including the M17, M23, and M40 Series, have protected US military forces throughout the past century. MSA designed and developed the MCU-2/P gas mask for the US military (USAF in Desert Storm). Our Millennium™ Gas Mask is a clone of this USAF-Navy mask that's now available to law enforcement users.

A USAF Major who served in Egypt and Somalia is adamant

about wearing an exceptionally designed gas mask. "An enemy can drop blood or blister agents on an airfield, so you never know WHEN you're going to need that protection. The design and shape of the lens and this mask are very important in enabling you to aim and fire your weapon. You're not worrying about comfort; you want to be sure you can SEE."

As one SWAT officer recently stated, "Equipment needs to be light, dependable, and foolproof. The MSA [Advantage® 1000] mask is."

Another agreed, "If you need to use force in hostage situations, you have to see exactly what you are doing while wearing your mask. The range of visibility and optics are great."

### [ CBRN Threats ]

All threats to US homeland security—home-grown or imported—signify potential destruction of people, places, and ways of life we hold dear. New ideas for preventing or responding to terrorist activities proliferate, as First Responders



## PROVIDING RESPIRATORY PROTECTION FOR AMERICA'S WARRIORS IS A PROMINENT PART OF MSA'S 88-YEAR HISTORY.



contemplate the brutality of dealing with chemical, biological, radiological, and nuclear (CBRN) agents.

This is nothing new for law enforcement personnel, who must always be prepared for anything. But rapidly evolving plans to create new agencies, set new agenda, and expand support for state and local emergency response teams are intensifying the focus. Field training exercises also serve as dress rehearsals for personal protection, including gas masks. This is where MSA comes in. We have the gas masks you need.

After decades of development and millions of users, MSA's gas masks are still greatly preferred by America's fighting forces and First Responders. We are ready to help you meet today's challenges with the best gas masks available.



***"Never before has this country depended so heavily on the FBI to protect it at home."***

*Robert S. Mueller III, FBI Director, May 29, 2002*



## **About MSA**

*MSA has protected First Responders for almost 100 years!*

*Mine Safety Appliances Company was founded in 1914 by two mining engineers who fought underground mine fires, rescued trapped miners, and developed or improved safety, rescue, and protective gear.*

*MSA has sold gas masks for military (and industrial) use since World War I, so we understand the demands placed on this crucial protective equipment.*

*We have historically helped First Responders before, during, and after emergencies, from small house fires to multiple explosions at chemical plants, from hazardous materials spills to hurricanes. We assisted those on duty after terrorists attacked New York City, the Pentagon, and Oklahoma City; and before/during the Seattle WTO meetings and Salt Lake City Olympics.*

*MSA makes and markets Respiratory Protection; Instruments; Head, Eye, Face, & Hearing Protection; Fire Helmets;*

*Fall Protection; Thermal Imaging Cameras; and Mining, Emergency, & Specialty Equipment via a national network of trained distributors, product specialists, and knowledgeable contacts.*

*MSA has been a global company for decades, protecting millions of people around the world who work in almost every industry.*

*You can always reach us by phone: 1-800-MSA-2222 or e-mail: [info@MSAnet.com](mailto:info@MSAnet.com).*





## Gas Masks for Law Enforcement

MSA's gas mask-style respirators, based on a proven US military design (used by the USAF in Desert Storm), are effective against biological agents and these chemical warfare (CW) agents: GA, GB (Sarin), GD, VX, Mustard, and Lewisite.

### Millennium™ Chemical-Biological Gas Mask



A Hycar version of the reliable military-style gas mask (MCU-2/P Mask, used by Air Force in Desert Storm) that combines high performance, customized fit, comfort, and cost efficiency.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece
- Dual-canister mount (NATO 40mm thread) allows weapon sighting from either shoulder
- Drinking tube provides connection for fluid ingestion in contaminated atmospheres

- Fully elastic, 6-point head harness promotes easy on-off, easy adjustment, no hair pulling
- Internal nosecup with 2 check valves deflects air from the lens, reduces fogging
- Standard mechanical speaking diaphragm included, or add MSA's optional ESP® II Communications System
- NIOSH-approved (No. TC-14G-0254) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates
- Effective against OC

Part No.	Millennium Chemical-Biological Mask, complete with canister, nosecup, drinking tube and clear polycarbonate outsert
10007423	Small
10007422	Medium
10007424	Large
818264	Millennium CBA/RCA Canisters, Box of 6

### Advantage® 1000 CBA-RCA Gas Mask



A clean, simplified respirator with Hycar facepiece (based on a proven facepiece design developed for the U.S. Armed Forces) that's up to 40% lighter than conventional full-face respirators and gives high performance, customized fit, comfort, economy, and user acceptance.

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar™ rubber facepiece
- Dual-canister mount (bayonet mount) allows weapon sighting from either shoulder

- Fully elastic, 6-point head harness promotes easy on-off, easy adjustment, no hair pulling
- Standard nosecup helps eliminate lens fogging
- Standard mechanical speaking diaphragm included, or add MSA's optional ESP II Communications System
- NIOSH-approved (No. TC-14G-0235) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates
- Effective against OC

Part No.	Advantage 1000 CBA-RCA Gas Mask, complete with canister, nosecup, and identification tag
813860	Small
813859	Medium
813861	Large
817590	Advantage 1000 CBA/RCA Canisters, Box of 6



gas mask production

Testing conducted by MSA and independent laboratories assures that gas masks and canisters meet the requirements for effectiveness against CW agents using the test protocol recommended by the Chemical Agent Safety and Health Policy Action Committee (CASHPAC). They are also effective against OC (Oleoresin Capsicum) Riot Control Agent and HCN (Hydrogen Cyanide), but have not been tested or approved by NIOSH for these applications.

## Advantage® 3200 CBA-RCA Gas Mask



NEW! The Advantage 3200 CBA-RCA (Chemical Biological Agent-Riot Control Agent) Gas Mask is based on MSA's already very popular industrial Advantage 3200 Respirator. It features a soft, pliable silicone facepiece, yet serves as an economical, cost-effective alternative to more expensive Gas Masks for this application. Shown above with optional ESP II Communications System.

- New 1-piece polycarbonate wraparound lens, optically corrected to eliminate distortion, promote superior visibility and peripheral vision
- Soft, pliable silicone facepiece with proven Advantage respirator seal that instantly conforms to wearer's face

- Choice of head harness: New European-style Advantage head harness with easy on/off pre-adjustable straps, dons like a catcher's mask OR More traditional Hycar rubber head harness
- Dual-canister mount (bayonet mount) allows weapon sighting from either shoulder
- Proven exceptionally comfortable, lightweight, stable, and low maintenance
- Very low breathing resistance
- Standard nosecup to help eliminate lens fogging
- NIOSH-approved (No.TC-14G-0235) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates
- Effective against OC

Part No.	Advantage 3200 CBA-RCA Gas Mask, complete with canister, nosecup, and identification tag
10036324	Advantage 3200 Gas Mask, with Advantage head harness, small
10036325	Advantage 3200 Gas Mask, with Advantage head harness, medium
10036326	Advantage 3200 Gas Mask, with Advantage head harness, large
10038695	Advantage 3200 Gas Mask, with rubber head harness, small
10038696	Advantage 3200 Gas Mask, with rubber head harness, medium
10038697	Advantage 3200 Gas Mask, with rubber head harness, large
817590	Advantage CBA/RCA Canisters for Advantage 3000 Respirators, Box of 6
10029298	Spectacle Kit for Advantage Respirators

## Phalanx™ CBA-RCA Gas Mask



A snug but comfortable Hycar rubber Ultravue® facepiece with single low-profile canister, designed specifically for law enforcement, corrections personnel against riot-control gases. Compact size allows easy integration with most visored police helmets.

- Phalanx Alpha has dual-canister mount for weapon firing from either shoulder
- Phalanx Beta uses single front-mount canister & demand-style facepiece
- EZ-Don Head Harness for quick donning or doffing

- Wraparound polycarbonate lens coated on both sides
- Easily disassembled for cleaning and parts replacement
- Standard nosecup helps eliminate lens fogging
- Standard speaking diaphragm included, or add optional ESP II Communications System
- NIOSH approval (No. TC-14G-0236) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level, and particulates
- Effective against OC

Part No.	Phalanx Riot Control Agent Gas Mask, complete with canister, nosecup, and identification tag
491990	Phalanx Alpha Gas Mask (side-mount canister), small
491989	Phalanx Alpha Gas Mask (side-mount canister), medium
491991	Phalanx Alpha Gas Mask (side-mount canister), large
491981	Phalanx Beta Gas Mask (front-mount canister), small
491980	Phalanx Beta Gas Mask (front-mount canister), medium
491982	Phalanx Beta Gas Mask (front-mount canister), large
817591	Phalanx CBA-RCA Canisters, box of 6
456975	Cover lens, clear, package of 25 lenses
480326	Cover lens, smoke-tinted, package of 25 lenses
494255	Cover lens, mirror-reflective, package of 6 lenses
454819	Spectacle Kit for Phalanx Gas Mask

## Response™ Escape Hood



MSA's Response Escape Hood is a practical solution to the problem of escaping from chemical, biological, or riot-control agents, when every second counts. The hood gives users head and neck coverage and respiratory protection to help them escape from terrorist situations as quickly as possible. A tactical version is available.

- Hood is made of high-performance laminate material for protection, fit, fast donning, and ease of use when escaping from chemical and biological agents.
- Canister has a high-efficiency particulate filter and activated carbon to combat aerosols, gases, and vapors for respiratory protection during escape.
- Canister has 50% more carbon than similar canisters used by US armed forces, documented by results of extensive testing against simulated and live chemicals.

- Hood fits most head sizes; is compatible with long hair, glasses, and/or facial hair.
- Soft, high-stretch, comfortable elastomeric neck seal eases donning and conforms to irregular neck contours.
- Easy operation: Air flows directly into the facepiece through the filter; inlet check valves maximize carbon performance; and air exits directly through the exhalation valve.
- Large bonded PVC lens for wide field of view and translucent chemical-resistant hood promote good visibility and face recognition, while reducing claustrophobia.
- Integrated nose cup reduces CO<sub>2</sub> buildup, yet enables communication superior to conventional devices, as well as normal breathing and speaking.
- Cradle-type head straps allow for quick, no-assistance donning.

Part No.	Description
10022208	MSA Response Escape Hood with CBA/RCA canister, packaged
10039843	MSA Response-Tactical Escape Hood with CBA/RCA canister, packaged

## OptimAir® 6A PAPR



A powered air-purifying respirator that filters contaminants from ambient air via CBA/RCA OptiFilter® Cartridges. Belt-mounted motor/blower provides constant air flow via breathing tube to facepiece.

- Full-face Hycar rubber Ultravue Facepiece in 3 sizes
- 1,500-hour brush-type motor in motor/blower module
- Maintenance-free lithium battery with 10-year shelf life
- Optional rechargeable NiCd battery
- Also approved for use with (optional) Millennium Facepiece (see page 4)



Part No.	Description
816892	OptimAir 6A PAPR, complete with medium Ultravue Facepiece, lithium battery, belt, motor/blower module. Add OptiFilter® cartridges/filters.
10011890	CBA/RCA OptiFilter Cartridges, Box of 6
816912	Lithium Battery Pack for OptimAir 6A PAPR
491102	Motor/Blower Module
808494	Protective Covers, Package of 5
96547	PAPR Adapter for Millennium Facepiece
<b>Optional Battery and Charger</b>	
491120	Rechargeable NiCd Battery
463471	Standard Single-Unit Battery Charger
486614	Single-Unit, Dual-Rate Battery Charger

## Accessories for Gas Masks

### ESP® II Communications System



The ESP II Communications System, a 1-piece, self-contained, electronic speech projection device, allows wearers to speak normally, yet be heard loud and clear.

- Lightweight, maintains visibility, comfortable to wear, and easy to use

- Compact, rugged; resists water, heat, and impact
- Compatible with handheld radios for clear, long-range communications
- Uses two standard AAA alkaline batteries, which last up to 15 hours

Part No.	Description
10026265	ESP Communications System for Millennium Facepiece and Advantage 1000 Facepiece

### Hood

All skin should be covered when encountering any suspect CW substance. Some customers will be buying suits that completely cover the skin, although they are not complete containment

suits. They will cinch down around the lens of the gas mask. A butyl hood, which protects against liquids, may work as additional protection.

Part No.	Description
305022	Butyl-Coated Nylon Hood



### Lens Outsert

Polycarbonate lens outsert snaps into place over Millennium or Advantage 1000 facepiece lens, providing addi-

tional impact protection. Tinted outsert helps conceal identity (suitable only when sufficient light exists).

Part No.	Description
<b>Lens Outsert for Millennium Facepiece</b>	
10008907	Small, clear
10008906	Medium/Large, clear
10008909	Small, tinted
10008908	Medium/Large, tinted
<b>Lens Outsert for Advantage 1000 Facepiece</b>	
806463	Small, clear
806462	Medium/Large, clear
806465	Small, tinted
806464	Medium/Large, tinted

### Carrier

Part No.	Description
10034184	Gas Mask Pouch, police style

### Spectacle Kits

Part No.	Description
816137	Spectacle Kit for Advantage 1000 and Millennium Gas Masks
10029298	Spectacle Kit for Advantage 3200 Gas Masks



# MSA offers Respiratory Protection from SCBA to Disposables

## SCBA



First Responders never approach unknown or IDLH (Immediately Dangerous to Life or Health) atmospheres without their SCBA (Self-Contained Breathing Apparatus).

Extreme conditions call for MSA's MMR Xtreme® Air Mask. Sleek, rugged, and lightweight, it has the best of everything: a comfortable, wide-vision facepiece; low-profile mask-mounted regulator (MMR); combination PASS and Redundant Alarm; lightweight 30- or 60-minute air cylinder; and advanced carrier/harness assembly. Assembled

To Order as completely customized SCBA. All NIOSH-approved, firefighting SCBA comply with the latest edition of the NFPA 1981 Standard.

Homeland Security teams can rely on MSA's new APR Adapter when they need a versatile and easy switchover from a supplied breathing air facepiece to a negative-pressure air-purifying respirator with cartridges. Also needed are emergency breathing air supplies and systems, such as MSA's patented Quick-Fill® System.

Part No.	Description
10028139	Ultralite MMR Xtreme® Air Mask, med. Hycar Ultra Elite facepiece, Firehawk regulator, 30-min L-30 Stealth Cylinder, ICM 2000™ Plus PASS Alarm, Vulcan Harness and Carrier
10028154	Custom 4500 MMR Xtreme® Air Mask, med. Hycar Ultra Elite® facepiece, FireHawk® regulator, 30-min. Stealth® cylinder, ICM 2000 Plus PASS alarm, Vulcan™ carrier
10032927	APR Adapter Single Kit for Firehawk Mask-Mounted Regulator consisting of adapter, CBA/RCA canister, plug and baffle assembly
10020382	Ultralite® MMR Quick-Fill Kit (shoulder)
10020383	Custom 4500 Quick-Fill Kit (shoulder)

## Disposables



At the other end of the spectrum, depending on conditions, First Responders may require only a disposable respirator, a relatively simple filtering face mask for environments threatened by biological warfare.

Affinity® Maintenance-Free Respirators are "disposables" at their best, with their low-profile

design, smooth inner lining, and latex-free straps for comfort, fit, and value. For example, Affinity® Ultra Respirators come in 3 sizes and have a traditional respirator-type face seal, adjustable straps, optional exhalation valve, and protection of N95, R95, or N100.

Part No.	Affinity Ultra Respirator N100, bag of 5
816468	No exhalation valve, small
816469	No exhalation valve, standard
816470	No exhalation valve, large
817094	With exhalation valve, small
817095	With exhalation valve, standard
817096	With exhalation valve, large



*For more product details and/or information about respiratory protection for various exposures to chemical and/or biological agents, please contact your MSA distributor or MSA's Customer Service Center at 1-800-MSA-2222.*

*Additional safety products designed to protect people from various exposures to chemical and/or biological agents are also available from MSA. Call for more information, or ask for the "Personal Protection for Homeland Security" bulletin.*



**NEW FROM MSA!****BlackHawk™ Tactical Air Mask**

- All-black Hycar or silicone sized Ultra Elite® Facepiece in 3 sizes, Nightfighter™ Heads-Up-Display mounting bracket, and Speed-ON® Kevlar Facepiece Harness.
- Firehawk™ Push-to-Connect Mask-Mounted Regulator has neoprene intermediate pressure hose, variable flow bypass system, purge button.
- Nightfighter Heads-Up-Display (HUD) low-pressure warning device and cylinder pressure gauge system consists of a transmitter mounted on a gauge line and facepiece-mounted receiver. NO audible low-pressure warning device that would compromise concealment. Instead, LED array provides remaining air information.
- Glass-reinforced composite backplate, harness with Flame-and-Heat-Resistant (FHR) Kevlar waist belt, shoulder straps, pull strap
- Optional FHR shoulder pads, lumbar pad, FHR chest strap
- Adjustable Kevlar cylinder retention strap with over-center latching system
- Black FHR cylinder shroud encompassing cylinder & air mask components eliminates reflections that would compromise concealment.
- Choice of low-pressure L-30 Stealth™, or high-pressure H-30 Stealth, H-45 Low-Profile Stealth, H-60 Stealth carbon fiber cylinders
- Optional shoulder-mounted Quick-Fill® System for rapid cylinder filling in tactical situations
- Work-line accessory enabling SCBA connection to portable air-supply system (coming in 2003)
- Hard or soft storage carrying case

**Product availability is expected in October 2002.**

### **What do SWAT team members like about their MSA gas masks?**

*"My Advantage 1000 mask is light, pliable, good in cold weather. I like how it folds for carrying and storage."*

*"MSA's mask is the only one we can use for sighting when using guns, and we can see downward as well, which is great."*



*"Great peripheral vision, and you can get your sighting device close to your face."*

*"Until last year, our SWAT team wore five different masks. We needed to standardize, and some [brands] were not good. If my mask leaks, I am OUT of it. . . . They HAVE to be dependable, so we chose the Advantage 1000."*

*"We need to move fast, without being seen. We can't think about if our masks work, but they HAVE to."*



## Special Information Related to Weapons of Mass Destruction (WMD)

“Unlike other terrorist events involving WMD, a biological attack may cover several jurisdictions. Disease clusters are likely to emerge in several locations before an actual bioterrorist event is identified and confirmed. The response will

require early detection, identification, epidemiological investigation, and disease outbreak intervention across multiple jurisdictions within or outside of the State of origin. Consequently, it is vital that the planning for bioterrorism be

comprehensive, geographically wide-ranging, and coordinated through all levels of government.”  
*(National Domestic Preparedness Office, July 6, 2000)*

For quick reference, some Chemical Warfare Agents are listed below in Table I.

**Table I. Chemical Warfare Agents: characteristics, exposure symptoms, examples, detector tubes**

Agent Classes	Characteristics	Exposure Symptoms	Agent Examples	MSA Detector Tubes	
Chemical Nerve Agents	Attack nervous system, can enter body through inhalation or skin	<ul style="list-style-type: none"> <li>Pinpoint pupils</li> <li>Runny nose</li> <li>Drooling</li> <li>Coughing</li> <li>Tightness in Chest</li> <li>Muscle twitching, jerking</li> <li>Nausea, vomiting, diarrhea</li> <li>Convulsions</li> <li>Coma</li> <li>Death</li> </ul>	<ul style="list-style-type: none"> <li>Tabun (GA)—CAS #77-81-6; Odor: None or fruity</li> <li>Sarin (GB)—CAS #107-44-8; Odor: None or fruity (used in Tokyo subway attack a few years ago)</li> <li>Soman (GD)—CAS #96-64-0; Odor: None or camphor (mothballs)</li> <li>VX —CAS #50782-69-9; Odor: None or sulfur</li> </ul>	10007654	Variety Pack (includes all three tubes)
Chemical Blister Agents	Attack skin and can also be inhaled  Are absorbed rapidly into skin	<ul style="list-style-type: none"> <li>Itching of eyes</li> <li>Nausea, vomiting</li> <li>Hoarseness or hacking cough</li> <li>Initial redness of skin, followed by blisters</li> <li>Skin effect varies with agent:</li> <li>Mustard gas (H): no immediate effect</li> <li>Lewisite (L): immediate pain</li> </ul>	<ul style="list-style-type: none"> <li>Mustard Gas (H)—CAS #505-60-2; Odor: Garlic</li> <li>Lewisite (L)—CAS #541-23-3; Odor: Geraniums</li> </ul>	10007653  10007650	10007652
Chemical Choking Agents	Attack respiratory tract	<ul style="list-style-type: none"> <li>Coughing, nausea, vomiting</li> <li>Irritated eyes, nose, throat</li> <li>Shortness of breath</li> <li>Pulmonary edema</li> <li>Frothy secretions</li> </ul>	<ul style="list-style-type: none"> <li>Phosgene (CG)—CAS #75-44-5; Odor: Newly mown hay</li> <li>Chloropicrin</li> <li>Chlorine</li> </ul>	10007651	
Chemical Blood Agents	Attack circulatory system  Have rapid onset	<ul style="list-style-type: none"> <li>Occur immediately</li> <li>Loss of consciousness</li> <li>Convulsions</li> <li>Apnea</li> <li>Headache</li> </ul>	<ul style="list-style-type: none"> <li>Hydrogen Cyanide (AC)—CAS #74-90-8; Odor: Bitter almonds</li> <li>Cyanogen Chloride (CK)—CAS #506-77-4; Odor: Bitter almonds</li> </ul>	10007651	

**Table II. MSA Millennium/Advantage 1000 CBA-RCA Canister Testing Conditions and Results**

Challenge Agent	Challenge Concentration, mg/m <sup>3</sup>	Relative Humidity, %	Minimum Service Time Requirement	RESULTS: Service Time until Break, in minutes
Dimethyl Methylphosphonate (DMMP) (Sarin Simulant) Nerve agent	1000 ±70	25 ±0.5	60 minutes until a 0.04 mg/m <sup>3</sup> break	>63
Sarin (GB) Nerve agent	1000 ±70	25 ±0.5	60 minutes until a 0.04 mg/m <sup>3</sup> break	>70
Hydrogen Cyanide (AC) Blood agent	550 ±25	50 ±3	30 minutes until a 5 mg/m <sup>3</sup> break	>40
HCN after Equilibration for 6 hours @ 25% RH	550 ±25	50 ±3	30 minutes until a 5 mg/m <sup>3</sup> break	>40
HCN after Equilibration for 6 hours @ 85% RH	550 ±25	50 ±3	30 minutes until a 5 mg/m <sup>3</sup> break	>40
ortho-Chlorobenzylidene Malononitrile (CS) Tear Gas Irritant	23 ±8	50 ±3	480 minutes until a 0.4 mg/m <sup>3</sup> break	>480
CS after Equilibration for 6 hours @ 25% RH	23 ±8	25 ±3	480 minutes until a 0.4 mg/m <sup>3</sup> break	>480
CS after Equilibration for 6 hours @ 85% RH	23 ±8	85 ±3	480 minutes until a 0.4 mg/m <sup>3</sup> break	>480
a Chloroacetophenone (CN) Tear Gas Irritant	101 ±6	50 ±3	480 minutes until a 0.3 mg/m <sup>3</sup> break	>480
CN after Equilibration for 6 hours @ 25% RH	101 ±6	25 ±3	480 minutes until a 0.3 mg/m <sup>3</sup> break	>480
CN after Equilibration for 6 hours @ 85% RH	101 ±6	85 ±3	480 minutes until a 0.3 mg/m <sup>3</sup> break	>480
Oleoresin capsicum (C <sub>18</sub> H <sub>27</sub> NO <sub>3</sub> ), the “active” ingredient of the OC tear gas Irritant	0.036	50 ±3	None	>480 until a 0.001 mg/m <sup>3</sup> break
Cyanogen Chloride (CK) Blood agent	Approx. 4000	80	None	5 to 9 until an 8 mg/m <sup>3</sup> break

The Flow Rate for all challenge agents was 64 ±1 Lpm, except for CK, which was 32 Lpm. Temperature was 25 ±3 degrees Centigrade.

# Respiratory Protection Chart

## Canisters are matched to respirator models and hazards

NIOSH is only beginning to test and certify full-face respirators that protect users from high concentrations of chemicals and a variety of CBRN hazards, including WMD. Until NIOSH certification protocol is established and respirators are NIOSH-tested, users themselves must assess the hazards and rely on data from respirator manufacturers.

Even before efforts were underway to develop a standard for CBRN masks, MSA enlisted independent third-party testing of the facepieces and canisters to determine how effectively they can protect an individual from a variety of chemical agents. This augments our own extensive lab testing, so our customers can wear MSA gas masks with confidence.

Table II on page 10 shows the **Millennium/Advantage 1000 CBA-RCA canister testing conditions and results**. Similar tables showing similar data for MSA's other gas mask canisters are available on our Web site ([www.MSAnet.com](http://www.MSAnet.com)) or in product literature.

This canister contains a pleated high-efficiency (HEPA) filter to remove aerosols and solid particulates, and an impregnated activated carbon bed to adsorb (filter out) gases and vapors.

Any small amount of tear gas agent that passes through the filter is adsorbed by the impregnated activated carbon. Sarin (GB), DMMP (a Sarin simulant), OC, AC, CK, and HCN are also effectively adsorbed by the carbon bed. The challenge agents are listed in column 1; testing conditions and requirements in columns 2, 3, and 4; and test results in the last column.

Canister or Cartridge Name	CBA/RCA Canisters Millennium	CBA/RCA Canisters Adv. 1000	CBA/RCA Canisters Phalanx	CBA/RCA OptiFilter Cartridges	CBA/RCA OptiFilter Cartridges	GME-P100 (multi-gas) OptiFilter Cartridges
Style of Canister Thread or Attachment	RD 40 military-style	Bayonet type	Phalanx style (MSA exclusive)	RD 40 military-style	RD 40 military-style	RD 40 military-style
Respirator Type	Millennium	Adv. 1000	Phalanx	Millennium	OptimAir 6A PAPR w/Advantage 1000 or Millennium Facepiece	Advantage 3100 Millennium Ultravue Ultra Elite
CBA/RCA Canisters or Cartridges, box of 6	818264	817590	817591	10011890	10011890	10024847
<b>Respirator Model</b>						
Advantage 3100 Gas Mask						X
Advantage 3200 Gas Mask	X <sup>2</sup>	X				
Advantage 1000 Gas Mask	X <sup>2</sup>	X	X <sup>2</sup>		X	
Millennium Gas Mask	X		X <sup>3</sup>	X	X	X
Ultravue Demand			X			X
Ultra Elite Demand			X			X
Phalanx (Demand) Gas Mask			X			
<b>For protection against:</b>						
Organic Vapors						X
Chlorine				E	E	X
Sulfur Dioxide				E	E	X
Chlorine Dioxide				E	E	X
Hydrogen Chloride				E	E	X
Hydrogen Sulfide						X
Ammonia						X
Methylamine						X
Formaldehyde						X
Hydrogen Fluoride						X
DMMP	E	E	E	E	E	E
Cyanogen Chloride (CK)	E	E	E	E	E	E
Hydrogen Cyanide (AC)	E	E	E	E	E	E
Phosgene (CG)				E	E	E
Chloropicrin (PS)				E	E	E
Sarin (GB)	E	E	E	E	E	E
Mustard (HD)	E	E	E	E	E	E
Chlorobenzylidene (CN) Tear Gas	X	X	X	X	X	X
Chlorobenzylidene - malonitrile (CS) Tear Gas	X	X	X	X	X	X
Oleoresin capsicum, the active ingredient in OC Tear Gas	E	E	E	E	E	E
Carbon Tetrachloride (CCl <sub>4</sub> )						E
Phosphine (PH <sub>3</sub> )				E	E	E
Proo or TYPE HE for PAPR	X	X	X	X	X	X

- X = NIOSH-approved
- E = Effective against but not NIOSH-approved
- 1 = Approved with Twin-Cartridge Adapter (PN 803622)
- 2 = Approved with Advantage Air-Line Adapter (PN 10003601)
- 3 = Approved with Coupling Nut (PN 96547)

*“Law enforcement is only as good as its relationships. Our combined resources, expertise, and ideas are far beyond the sum of their parts, and the potential for greater successes through mutual cooperation and respect is boundless.”*

FBI Director Robert S. Mueller III

*“We must develop a seamless relationship with state and local law enforcement.”*

Attorney General John Ashcroft





## More from MSA

Ask your MSA distributor about MSA's portable gas detection instruments and CWA detector tubes; complete line of fall protection and rescue equipment, including our FP Tactical Harness; and a variety of head, eye, face, and hearing protection.

Do you know about MSA's Evolution® family of thermal imaging cameras? These TICs provide high-resolution, quality images for clear, crisp definition of objects in the scene. They are superb tools for search and rescue, location of mass casualty victims, HazMat identification, and night scene survey.

MSA's authorized distributors, who are trained in knowledge and use of our products, can help you determine what gas mask and other products will suit your needs. Call 1-800-MSA-2222, MSA's Customer Service Center, to find out who your distributor is, order product literature, etc.

US Government workers can buy many MSA products through our GSA (General Services Administration) schedules. Just call MSA's Customer Service Center at 1-800-MSA-2222 for more information. Information on gas mask usage and limitations is on MSA's web site [www.MSAnet.com](http://www.MSAnet.com).

Or ask for MSA's more comprehensive "Personal Protection for Homeland Security" bulletin and new Law Enforcement catalog.

MSA Safety Works (MSA's consumer brand) offers a Gas Mask Hood (similar to MSA's Response Escape Hood) through leading retailers. With it come a training tape and instructions in how to "shelter in place."



**Note:** This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



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For further information:



*MSA thanks the Allegheny County (Pa.) Police Department, especially the Allegheny County Police SWAT team, for generously sharing their training time and information, so that this bulletin could be a more realistic presentation of law enforcement needs.*

