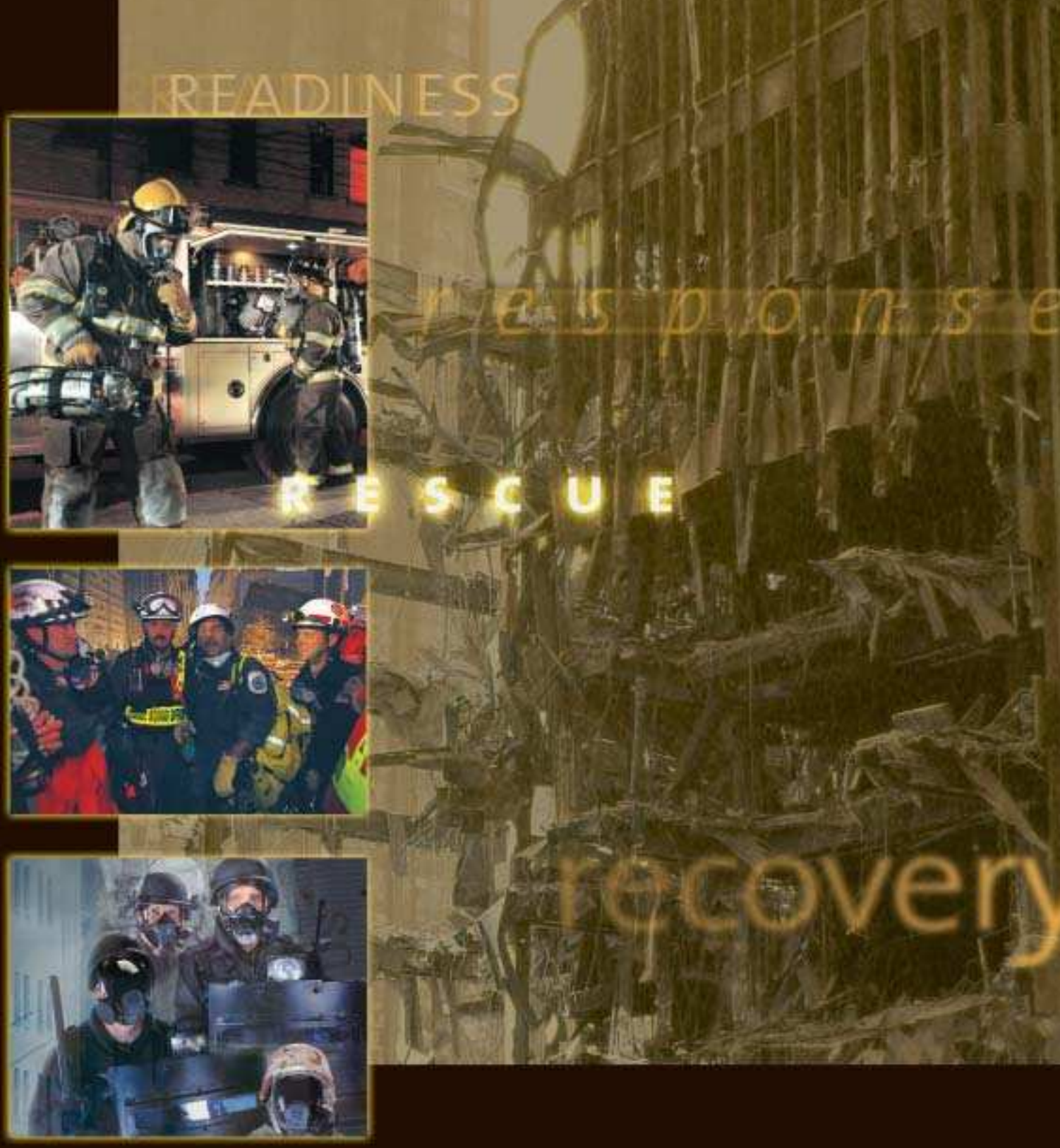



# Personal Protection for Homeland Security

[ Readiness, Response, Rescue, & Recovery ]

MSA

**PPE for Homeland Security**



***WHO needs personal protection?*** *Firefighters, law enforcement, all government levels of emergency management (from FBI to local public works), EMS & hospital triage personnel. Contractors & trade unions such as Operating Engineers (IUOE) & Ironworkers (IW), US armed forces & National Guard, private security firms & public utilities, Red Cross & Salvation Army volunteers. The list is endless.*

***WHAT hazards can be encountered?*** *Visible & invisible conditions from destructive bombs, sabotaged operations, collapsed buildings, chemical/biological warfare, & attacks that result in fire & smoke, airborne particulates & silica dust, combustible gases, toxic gases, oxygen deficiency, confined spaces, falling building materials, radioactivity.*

***WHERE?*** *Public & government buildings, major city centers, public utilities with water supplies or nuclear energy, subways, airplanes, trains, airports, highways, stadiums.*



## Homeland Security

First Responders on September 11, 2001, quickly learned that the devastation left in the wake of terrorist attacks knows no bounds. Since that day, their roles and responsibilities have expanded exponentially.

Indeed, First Responder organizations (firefighters, emergency medical services, and law enforcement) must face a new reality when preparing for any possible threat to the security of this country.

Under the Federal government's new Homeland Security initiative, plans are expected to include health care providers, construction workers, and citizen volunteers. Our government is further recognizing their increasingly important contributions with proposed funding for Homeland Security in excess of $3 billion through the year 2003.

In addition to training and coordination provided by local and federal organizations, First Responders need to understand the personal protective equipment (PPE) and instruments that they should use during the response, rescue, and recovery activities associated with potential terrorist events.

MSA has a solid history of providing state-of-the-art PPE and instruments to First Responders during terrorist attacks and other national emergencies, but September 11 revealed some new demands, particularly in the range of equipment that may be required.

Firefighters, law enforcement, and emergency medical service personnel may become engaged in activities that are outside of their daily responsibilities and require different PPE than they are familiar with. Conversely, construction, security, and government workers may have to enter hazardous areas that are beyond their normal activities and require increased protection. Therefore, proper equipment selection, training, and coordination are a crucial part of organizing a successful Homeland Security Program.

Based on MSA's experience and established emergency management protocol with respect to PPE, actions taken to assure Homeland Security have been divided into four key phases: Readiness, Response, Rescue, and Recovery.

This general guide to selecting appropriate PPE and instruments as part of a Homeland Security Program provides some key considerations for organizations or individuals who must do so.

*"We prepared for the possibility that tear gas and other riot-control agents might be needed to disperse crowds at the WTO conference in November 1999. We trained 700 local officers and equipped them with gas masks and riot helmets. They were ready. When confronted, officers responded successfully, and their breathing air in concentrated gas environments was filtered by riot-control gas masks for hours." (Lt. Ted Jacoby, Seattle police department)*

*"[Our recommendations] since the September 11 attacks are the same as always: Be prepared for every emergency. It's just that people are paying more attention now." (Rocky Lopes, American Red Cross office of preparedness)*

*"It was pandemonium, wild. . . . Job functions didn't exist anymore. Vice presidents were loading trucks and making deliveries around the clock." (An MSA Safety Products distributor)*

*"Within 5 or 6 days, just about everyone was out of respirators. Distributors and manufacturers alike had already cleared their shelves, and it still wasn't enough."(An MSA Safety Products distributor)*

*"At one point, I had about 20,000 pairs of safety goggles that no one needed. Then EPA called and said, 'We'll take them all—within an hour!'" (Josh Goldstein, Olympic Glove & Safety)*

# Readiness

**Readiness: The most important action is to assess, plan, prepare, and train for an event BEFORE it happens.**

While it is impossible to prepare for all potential threats, some important guidelines can be obtained from a report: *"Protecting Emergency Responders: Lessons Learned from Terrorist Attacks."* Released by RAND Science and Technology Policy Institute and NIOSH, it summarizes discussions during a two-day NIOSH-sponsored conference held in New York City in December 2001.

The workshop assembled more than 150 participants, representing firefighters, emergency medical services, law enforcement, safety equipment manufacturers, construction and other trade services, state and federal agencies, and health and safety professionals. A copy of the conference proceedings is available on the internet at www.cdc.gov/niosh.

From those discussions (and MSA's experience) come these recommendations to organizations and individuals who are developing Homeland Security strategies.

- Develop guidelines for the **proper selection and training** of response personnel on PPE ensembles for long-duration disaster responses. Before using PPE, wearers MUST be trained in its use and understand it enough to answer questions like: "Is this product appropriate for this use? What are its limitations? How long will I be protected?"
- Instruction should include the **proper use and calibration of environmental surveillance equipment**; the **selection, use, and fit testing of respirators**; how to **operate thermal imaging cameras**; and how to **assemble and use fall protection and rescue equipment**. Response personnel should also receive guidelines on proper use of head, eye, face, hearing, and body protection.
- Consider **stockpiling a supply** of various levels of personal protective equipment and instruments to sustain operations while additional supplies are in transit. As learned during the September 11 crisis, the transportation infrastructure might be shut down or destroyed, hampering responders' efforts to obtain and use PPE.
- Planners should identify local fire service and safety equipment distributors for the **replenishment** of PPE and instruments. Call MSA Customer Service for the name of the distributor nearest you
- Pre-planned Perimeter Control, as it pertains to the protection of individuals on the site, will help to **ensure enforcement of the use** of the proper PPE.

**Some additional sources of information:**

- *"The State Capability Assessment for Readiness: A Report to the United States Senate Committee on Appropriations."* FEMA and NEMA's readiness and capability assessment process assesses the operations, readiness, and capabilities of a state to mitigate, prepare for, respond to, and recover from all disasters and emergencies.
- FEMA's *"Guide for All-Hazard Emergency Operations Planning: State and Local Guide (101)"* was published in September 1996. *"Chapter 6 (Attachment G—Terrorism)"* was added in April 2001. (See http://www.fema.com/pte/gaheop.htm)
- *"Protecting Emergency Responders: Lessons Learned from Terrorist Attacks"* (conference report, NYC, December 2001) www.cdc.gov/niosh

# Response

**The "Response" phase is the immediate, first reaction to the attack.**

Response personnel are present in a wide range of activities surrounding an event to ensure that direct and indirect activities, such as evacuation procedures, traffic routing, communications, and logistics, are coordinated effectively.

**From a Personal Protection perspective**, "Response" usually means encountering unknown environments that require donning maximum PPE, then assessing and identifying the hazard, after which less stringent personal protection can be used. Responders should:

1. **Wear** SCBA, head protection, rescue harnesses, two-way communication, protective clothing, gloves, boots, etc., to ensure they have the maximum respiratory and body protection possible against the unknown threats. Depending on the situation, firefighters may wear turnout gear or hazmat clothing.
2. **Carry** detection instruments and thermal imaging cameras to assess the environment, and rescue equipment.
3. **Test** the environment with portable multigas detectors and other instruments for unseen toxic gases, oxygen deficiency, combustible gases, biological/chemical warfare agents, and radioactivity, unstable and falling structures, heat, and fire.
4. **Adjust** levels of PPE for appropriate coverage. Respiratory protection is selected on the basis of the hazard and its airborne concentration. Additional air cylinders and refilling devices may be needed for extended periods of Response.


## Response

*"We were working a job across the river when I saw the Trade Center get hit. . . . We jumped in our trucks, hurried over to help . . . already wearing our safety gear. But oh, that smoke, all that particulate!" (Pete Gasparich, Ironworker, Local 40)*

*"The size of the scene, the smell, the debris, and the look of devastation on [people's] faces—I will never forget it. . . . Incredibly and immediately there was a sense of determination to do whatever needed to be done to help. In those early days, each time we went into the city [with police escort], we were greeted by thousands of cheering residents of lower Manhattan . . . expressing appreciation [with] applause, signs of support, patriotic expressions, food and drink." (Dave McArthur, MSA)*

*"[In Oklahoma City,] if you didn't wear PPE, you didn't work on site." (A firefighter on duty there)*

*"Those first days, FEMA had it under control. Then we (Ironworkers) did whatever the Fire Department told us to do. Then, whoever was in charge of the rig. . . ." (Pete Gasparich, Ironworker, Local 40)*

*"At Oklahoma City, half-face and full-face respirators, goggles, and SCBA were worn by many rescue teams. Their hardhats had some sort of flashlight, and their handheld instruments detected natural gas leaks." (Sam Frailey, MSA)*

*"OSHA greatly appreciates . . . [the] generous and quick response to help ensure the safety and health of the rescue workers at the WTC site." (John Henshaw, OSHA administrator)*

*"We set up a command center. . . . phones rang 24 hours a day. Routines went out the window. No time for purchase orders. People [at the Pentagon site] needed safety equipment, and it was our job to get it to them." (Ed Simons, Safeware)*

*"The full-face respirator worked the best. . . . [While they wore dust masks, we HazMat team members] slapped cartridges on [our] full-face . . .to handle just about everything. We had voice amplifiers [to] communicate. If they had just a half-face from [retail stores], their communications went down quickly." (Firefighter-special-operations panel member, NIOSH conference)*

# Rescue

**The "Rescue" phase immediately follows the Response phase.**

Rescue involves rescuing and transporting victims from the disaster scene, and is typically handled by firefighters, emergency medical personnel, and law enforcement officers who were first on the scene. Other Rescue personnel (on or off the site) may provide triage, emergency care, and/or transportation of victims to get necessary care.

**Personal Protection for Rescuers** very likely mimics PPE for Responders. One reason is that Rescue of live victims may occur before environmental contaminants or their levels are clearly understood. Confined spaces may look harmless but can be especially dangerous, so IDLH cautions should always be taken, including wearing SCBA.

However, when environmental contaminants and other conditions ARE known, other respiratory protection and additional instruments may be appropriate.

1. Often used during Rescue operations, **thermal imaging cameras** locate victims through high-density smoke or darkness.
2. **Air-purifying respirators** may be worn ONLY in the presence of KNOWN particulate/ chemical hazard levels.
3. Even if the hazards are "known," **portable instruments** should be chosen to alert the user to sudden new and/or unknown contaminated air.
4. **Complete head and body protection** should include fire helmets or industrial helmets, eye and face protection, cap lamps, protective clothing, gloves, etc.
5. **Harnesses, rescue equipment, and descent devices** can serve both Rescuer and victim in a variety of situations.
6. In addition to PPE for rescue workers, **escape respirators** and other PPE may be provided during these efforts.

# Recovery

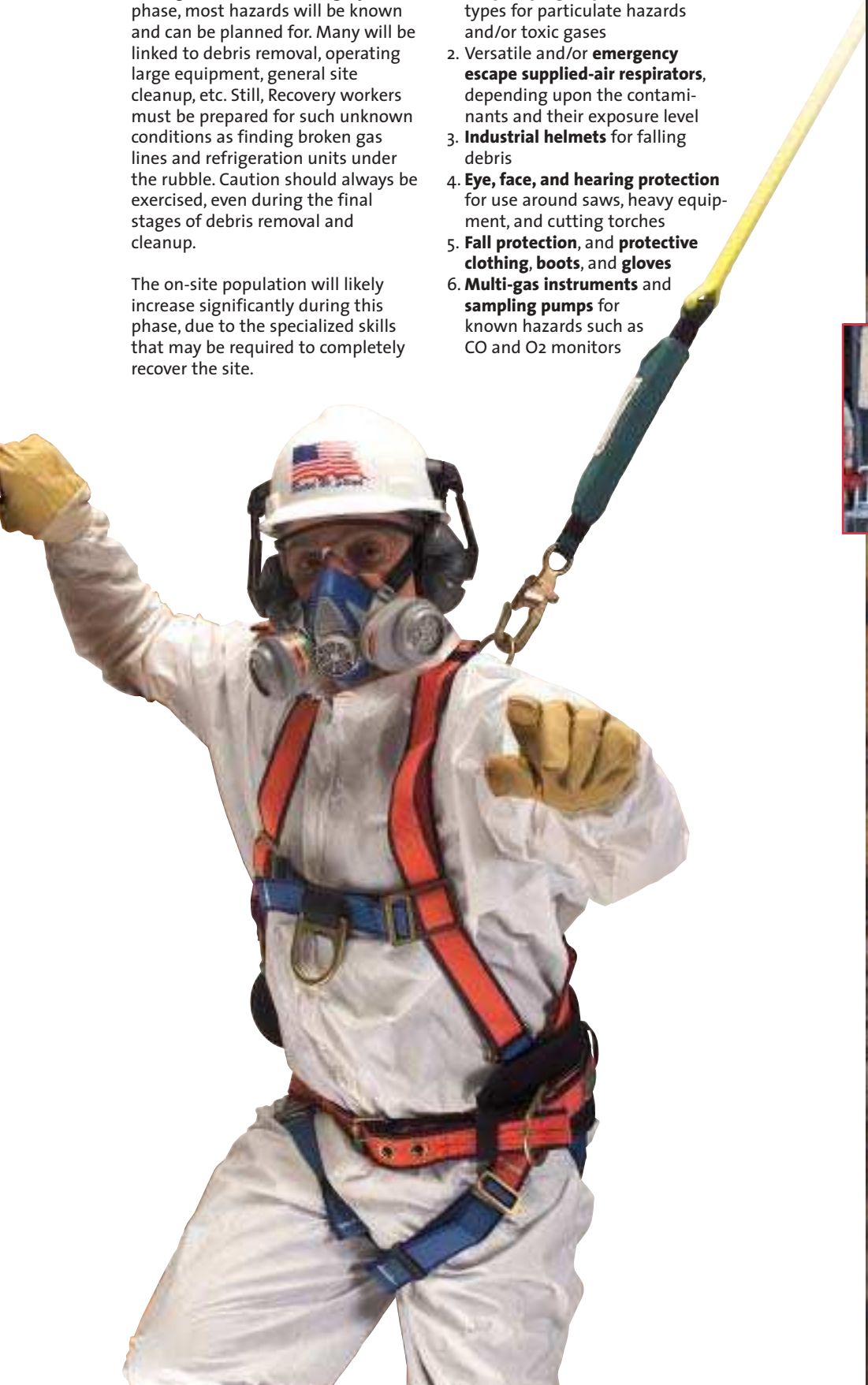
**The "Recovery" phase involves reclaiming the victims and/or property, and the eventual remediation of the site.**

During this varied and lengthy phase, most hazards will be known and can be planned for. Many will be linked to debris removal, operating large equipment, general site cleanup, etc. Still, Recovery workers must be prepared for such unknown conditions as finding broken gas lines and refrigeration units under the rubble. Caution should always be exercised, even during the final stages of debris removal and cleanup.

The on-site population will likely increase significantly during this phase, due to the specialized skills that may be required to completely recover the site.

**Personal Protection for Recovery workers** must cover many hazards, particularly those related to falling debris and particulate dust. Appropriate PPE includes:

1. **Air-purifying respirators** of various types for particulate hazards and/or toxic gases
2. Versatile and/or **emergency escape supplied-air respirators**, depending upon the contaminants and their exposure level
3. **Industrial helmets** for falling debris
4. **Eye, face, and hearing protection** for use around saws, heavy equipment, and cutting torches
5. **Fall protection**, and **protective clothing**, **boots**, and **gloves**
6. **Multi-gas instruments** and **sampling pumps** for known hazards such as CO and O2 monitors



## *Recovery*

*"As a Desert Storm veteran, I've seen a lot. But I never want to experience anything like Somerset again. It was especially hard seeing the families visit where their loved ones had died in the crash." (Chris Crow, Salvation Army)*

*"It broke my heart. . . . I spent a year of my life building WTC 7. Now that we've reached this stage of recovery, we don't want to go to work, knowing what we'll find. . . . But—after we clean the site up, we'll probably build again. That's what we do." (Pete Gasparich, Ironworker, Local 40)*


## *IMPORTANT:*

*The type and level of personal protection required depend upon the environment, the type and intensity of terrorist attack, and the resulting destruction that must be negotiated. MSA has provided some basic guidelines for what type of PPE should be used during each phase. However, these recommendations may not provide a complete assessment of all PPE needed.*

*The next six pages cover a **sampling of MSA's product lines** with thumbnail product descriptions and photos. The Ordering Information pages list **representative products** and **part numbers** for easy ordering. However, we urge you to discuss all PPE with your knowledgeable MSA distributor, especially if you are not familiar with product types or use. Naturally, more detailed MSA product information is available on our web site (www.MSAnet.com) and in printed literature.*

# Respiratory Protection

## Supplied Air Respirators (SARs)

***First Responders never approach unknown or IDLH (Immediately Dangerous to Life or Health) atmospheres without their self-contained breathing apparatus (SCBA). NFPA-compliant SCBA is their best bet. MSA SCBA can be custom-assembled to order (ATO), OR an already-assembled Air Mask can be chosen from stock.***

Extreme conditions call for MSA's **MMR Xtreme® SCBA**. 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.

MSA's new **APR Adapter** lets Homeland Security teams who must be prepared for long-term respiratory protection in various environments switch from using supplied breathing air to using a negative-pressure air-purifying respirator with cartridges.

Communication among teams responding to 9-11 was reportedly a problem. Solve this necessity by adding MSA's new **ClearCommand® Communications System** to SCBA (amplifier with or without radio interface). An internally mounted microphone and large-diameter (50 mm) amplifier speaker give optimal clarity and more than twice the volume of a facepiece alone.

***Homeland Security working conditions for firefighters and other First Responders can be tough, demanding, and unpredictable. SCBA air cylinders run low on air during long-term use, so additional air supplies are called for.***

Designed to meet the needs of Rapid Intervention Crews (RICs), MSA's **RescueAire™** family of products can handle most emergency breathing air situations.

The **RescueAire™ II Portable Air Supply System** consists of a lightweight **Stealth ™ cylinder**, **Quick-Fill®** emergency breathing system, **ExtendAire™** emergency breathing system, and an **MMR regulator**, supported by a heat-and flame-resistant harness. It's a complete system that can provide emergency breathing air for most victims.

The **ExtendAire™ System** can be used as both an emergency breathing system and a dual-purpose device for MMR SCBA to allow quick, easy connection to an air line.

**Dual-Purpose SCBA**, typically used by HazMat response teams and firefighters, allow SCBA users to benefit from the capabilities of an air-line respirator. A dual-purpose regulator has two inlet ports—one for the cylinder, the other for the air-supply line. When an air line is connected to the regulator, the wearer automatically receives air from that supply line, thus conserving cylinder air.

The patented **Quick-Fill® System** lets MSA Air Mask users refill and transfill air cylinders without removing their mask or air cylinder. They can 1) fill an SCBA cylinder from a mobile compressor or cascade system in less than a minute; 2) transfill between two cylinders, providing an Emergency Breathing System; or 3) extend the air supply over longer durations, using a remote compressed air source.

MSA's **PremAire® Supplied-Air Respirator System** provides dependable protection and engineering excellence. A patented waist-mounted manifold gives it cost-effective flexibility to be used as a:

- Supplied-air respirator with emergency-escape air cylinder for egress from IDLH atmospheres
- Combination SAR/APR, allowing free movement without an air-supply hose, when only APR protection is needed
- Supplied-air respirator with dual-supply (an MSA exclusive that eliminates dragging long lengths of air-supply hose) so users can leapfrog from air station to air station
- Supplied-air respirator with Vortex tube, which provides body cooling, or warming, under protective clothing

The **PortAire® Portable Air-Supply System** holds two standard SCBA air cylinders to provide a portable compressed air source any time an air-line device is used, such as Dual-Purpose SCBA. This compact air-pressure regulating system, housed in a lightweight, durable, anodized aluminum frame, protects cylinders, holds up to 100 feet of air-supply hose, and serves as a convenient carrying device.

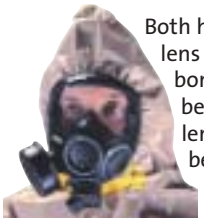
**TransportAire®** Systems consist of a handle with straps that fit around a standard SCBA cylinder (high- or low-pressure), a regulator, and a regulator-to-hose adapter for SAR with dual-supply option.

The compact **TransAire® 5 and 10 Escape Respirators**, which deliver a consistent air supply at 40 lpm, are lightweight and durable, yet their aluminum cylinders can withstand temperatures from 0 to 160 degrees F.

## Gas Masks

***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.***

The **Advantage® 1000 CBA-RCA Gas Mask** was used with great success by Seattle law enforcement officers during the unrest at the World Trade Organization meeting there in 2000. MSA's top-of-the-line **Millennium® Chemical-Biological Mask** has a drinking tube for fluid ingestion in contaminated atmospheres.



Both have a flexible, polyurethane lens with wide field of vision, bonded to a durable Hycar rubber facepiece. A polycarbonate lens outsert, tinted or clear, can be added. A dual canister mount allows for weapon sighting from either shoulder, and a fully elastic, 6-point head harness makes on-off adjustment easy. A standard mechanical speaking diaphragm is included.

Or add MSA's optional compact, battery-operated **ESP® II Communications System**. This self-contained electronic speech projection device clearly amplifies and projects the wearer's voice, so it can be heard clearly, even in areas with high ambient noise.

A third gas mask, the **Advantage® 3000 CBA-RCA Mask**, incorporates MSA's new Advantage 3000 facepiece, with an MSA-exclusive optically correct lens for superior visibility and peripheral vision, pre-adjusted head straps, lower breathing resistance, and exceptional versatility.

MSA's new **Response™ Escape Hood** is made of high-performance laminate material for protection, fit, and ease of use when escaping from nuclear, biological, or chemical (NBC) agents. The elastomeric neck seal conforms to fit most wearers, and a nose cup reduces lens fogging and aids communication. The large lens and translucent hood promote good visibility and face recognition, and help reduce claustrophobia.

*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.*

## Air-Purifying Respirators (APRs)

***If the hazard is known and does NOT require supplied-air respirators, you can get suitable protection against certain contaminants from half-mask or full-face APRs.***

MSA's **Advantage® Respirators** may be your best bet for comfort, light weight, stability, and low maintenance. **GME and GME-P100 cartridges** are only two of a complete line of particulate, chemical, and combination cartridges for lightweight, low-profile performance.

The **Advantage® 200 LS Half-mask Respirator** subtracts 25% of the weight and adds noticeable softness to a facepiece that was engineered using facial form data from 8,000 people. The thermoplastic rubber facepiece with AnthroCurve™ Sealing Surface instantly conforms to each wearer's face, while delivering exceptional stability, so it will not collapse during wear.

MSA's new globally designed full-face **Advantage® 3000 Respirator** features an optically correct wraparound lens that eliminates distortion. The soft, pliable silicone facepiece has MSA's proven face seal plus a nose-cup to reduce fogging. Users love its very low breathing resistance and easy on/off pre-adjustable straps.

***Powered air-purifying respirators (PAPRs) filter contaminants from ambient air and provide a constant air flow to a facepiece.***

MSA's low-profile **OptimAir® MM 2K PAPR** consists of a mask-mounted motor/blower with HEPA filter for particulates and a small water-resistant NiMH battery pack, plus full facepiece, belt, and cable. Its dual-rate battery charger recharges the battery in less than 3 hours. Benefits include extremely light weight, easy maneuverability and decontamination, and 8 hours of battery use.

The **OptimAir® 6A PAPR** has a belt-mounted blower/motor with breathing tube to the full- or half-mask facepiece and a maintenance-free lithium battery. It is used with an entire family of filters and cartridges for protection against particulates and/or toxic gases and vapors. Optional equipment includes a Tyvek hood (with HEPA filters only) and a rechargeable NiCd battery.

**Affinity® Maintenance-Free Respirators** are "disposables" at their best. Their low-profile design, smooth inner lining, and latex-free straps provide comfort, fit, and value. Choose your desired attributes from almost 40 respirators, according to size, face seal type, protection needs, and strap type, plus options like an exhalation valve and nuisance-level odor removal.

The four basic styles are: **Affinity® Foldable** (easy to carry, N95 or R95), **Affinity Plus®** (simplest style with N95 efficiency), **Affinity Pro®** (with special seal, foam inner liner, adjustable straps, and N95 or P95, plus optional exhalation valve and odor removal), and **Affinity® Ultra** (with traditional respirator-type face seal, adjustable straps, optional exhalation valve, and protection of N95, R95, or N100).

## Portable Instruments

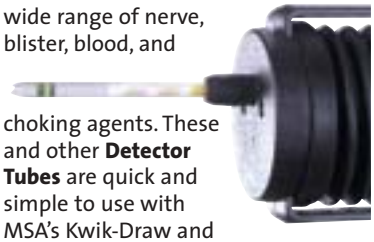
The **FiveStar® Alarm** is available with sensors to detect combustible gas and oxygen, plus up to 3 more gases (such as carbon monoxide, hydrogen sulfide, & chlorine). It is rugged, incredibly easy to use, and economical to operate. Order a popular part-numbered kit, or choose a custom-built FiveStar Alarm that is assembled to order (ATO).

The **Passport® VOC 2000 Organic Vapor and Oxygen Monitor** conveniently detects low concentrations (1 to 10,000 ppm) of volatile organic compounds, such as jet fuels, MEK, benzene, and toluene, plus oxygen levels.

MSA's **Kwik-Draw® Pump** is designed for one-hand operation and consistent delivery of a sample draw volume of 100 ml. It can be used with an assortment of detector tubes to spot-test atmospheres for a wide variety of toxic substances.

MSA's **Toximeter™ II Automatic Pump** allows the user to preset the number of pump strokes (from 1 to 250). Intrinsically safe, it works with all MSA detector tubes and can also be used as a sampling pump.

**CWA (Chemical Warfare Agent) Detector Tubes** detect a wide range of nerve, blister, blood, and choking agents. These and other **Detector Tubes** are quick and simple to use with MSA's Kwik-Draw and Toximeter II Pumps to detect dozens of substances.



The **Escort® LC Sampling Pump** can be used in hostile environments with a wide variety of personal and area sampling devices to collect airborne contaminants such as asbestos fibers, toxic gases, vapors, particulates, fumes, mists, and silica dust. Compact, lightweight, and quiet, the unit can be sprayed with water while operating without being damaged.

The **Orion® Multigas Detector** is a low-cost, reliable, easy-to-use handheld instrument. It takes rough handling in tough environments while detecting O2, H2S, CO, and combustible gases. A charger is included; a built-in sampling pump is optional.

**Responder® Series of O2, CO, and H2S single-gas indicators** are lightweight, pocket-sized alarms with digital displays and adjustable alarm levels. They provide fast, accurate sampling, on/off capabilities, and audible, visible, and vibrating alarms. The MinOX® Remote Responder Alarm has an external sensor attached to a 10-foot cable.

MSA's new **Pulsar® Single-Gas Detector** provides maintenance-free, 24-month monitoring for detection of CO, H2S, or O2. It requires no field calibration or battery/sensor replacement. With triple alarms, it can be worn on a pocket, belt, or helmet. It's designed to survive a 6-foot drop and meet an environmental protection rating of IP54; it is water- and dust-tight.

*Most MSA portable instruments can be built to your exact needs via our ATO (Assemble-to-Order) System. Some popular configurations have assigned part numbers. (See Ordering Information.)*

***Calibration kits, cylinders, accessories,** and a **squirt gas bump test kit** help assure you of accurate monitoring. Your MSA distributor or customer representative will help you choose the correct equipment for your needs.*

## Thermal Imaging Cameras (TICs)

***TICs use advanced infrared imaging technology to allow First Responders to see through dark, chaotic, smoky environments so they can maneuver the scene quickly and as safely as possible. TIC sensors react to infrared energy from all surrounding objects and convert the "thermal signature" to visible images of victims, fire sources, and impediments in their environment.***

***MSA's Evolution® family of thermal imaging cameras 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, night scene survey. Firefighters commend their rugged performance, outstanding durability, consistent reliability, and best-in-class technology.***


MSA's ergonomically balanced **Evolution® 4000 TIC**, with a customized microbolometer sensor and video enhancement software, redefines "handheld TIC" with a breakthrough design that combines perfect balance, grip, orientation, and hand-off capability in a rugged, lightweight, fully-sealed, high-temperature housing.

State-of-the-art signal processing delivers the sharpest, clearest picture available to a big-screen, high-definition monitor. The Heat Seeker Indicator System rapidly identifies hot spots as red attributes on the black and white display.

Options include a second battery pack, a Quick-Temp Indicator of surrounding surfaces, and a Remote Wireless Video Transmission System, for seamless communication with the incident command.

# Fire Helmets

MSA's **Evolution®3000 TIC** with i-Tech is the best low-cost solution for durable, reliable thermal imaging performance. Its breakthrough i-tech technology makes it the first true "point-and-shoot" BST camera (Raytheon-based BST), requiring no manual adjustments.


Recent enhancements include optimized i-tech optics and up-to-the-face display technology for enhanced resolution; a high-definition, clear display; and full depth of field.

The Evolution 3000 TIC offers proprietary direct temperature measurement; high-temperature warning; a 3-hour battery life, and a lightweight "handy-cam" design to minimize fatigue over long-term use.

***Since 1836, CairnsHelmets has manufactured leather fire helmets for generations of firefighters. Now, MSA CairnsHELMETS® fire helmets offer added protection to meet today's high-temperature standards of head and neck protection, with Nomex chin straps, a PBI/Kevlar earlap, faceshield wing protectors, a high-temperature foam cap, a higher temperature impact cap liner, and a 3-position rear-ratchet height adjustment for comfortable fit.***

For use in response to Homeland Security conditions, we suggest 3 Modern-style and 1 Traditional CairnsHELMETS designs with tough, through-color, fiberglass-reinforced, hi-temp shell construction that resists cracking and chipping.

Both the brimless **HP3 Commando** and short-brimmed **515 Navigator** fire helmets are NFPA-approved, durable fiberglass composite helmets whose low profile allows easy access to confined spaces.

The **515 Navigator** model has a continuous short brim that provides a watershed. Both have SCBA front headband adjustments and an ultra-high-temperature (TPR) edge trim that will not melt or drip.

The **660C Metro** modern-style helmet has a full brim. This NFPA-approved durable fiberglass composite helmet is the most popular style.

The **CairnsHELMETS 1010**, an NFPA-approved fiberglass composite helmet, is a traditional style fire helmet that combines modern durability and performance with the timeless look of reinforced ribs and a deep water-shedding brim.

*Your MSA distributor can help you select additional appropriate gear, like clothing, gloves, boots, first aid, etc., that may be necessary for protection from various hazardous environments you could encounter in Response, Rescue, and/or Recovery.*

*MSA products meet all applicable nationally recognized US government regulations and industry standards, such as NIOSH, OSHA, NFPA, ANSI, etc., and some Canadian and international standards.*

# Head, Eye, Face, Hearing Protection

***Protective helmets, eyewear, hearing protection, and accessories encompass a wide variety of colors, styles, etc., to suit as many uses as there are jobs. Customization is easy.***

Despite their stylish cat's-eye look, **Arctic™ Protective Eyewear** provide excellent side and front impact protection from hazards such as flying particles, dust, sparks, and glare. Other benefits are wearing comfort and **Tuff-Stuff™** scratch-resistant clear or gray tinted lens.

Similarly, MSA's **Sierra™ Protective Eyewear** has integrated side shields, a vented brow guard, **Tuff-Stuff™** scratch-resistant lens (anti-fog on some models), and adjustable temples.

**Clearvue® 200 Non-vented Goggles** with fog-free lens have an integrated frame and flexible, rolled-in cushion at the temples to provide comfort without tension or pressure points.

**Softframe 4-vent Respirator Goggles** by MSA have a .060" thick anti-fog clear lens and are specially constructed to wear with MSA half-mask and disposable respirators.

Comfortable, lightweight **V-Gard® Protective Caps and Hats** consist of a polyethylene shell and suspension system for top impact protection. The cap style comes in 3 sizes, 18 colors, with 4 suspensions. Dozens of accessories/options include faceshield frames and visors, ear muffs, welding shields, helmet lights, chinstraps, winter liners, and customized logo imprinting.


New for Homeland Security is a special **V-Gard® Cap**, with reflective Search & Rescue half moon stripe, and four retroreflective strips. Available with cap lamp bracket and cord holder OR welding lugs, etc.

Also popular is a special white **V-Gard® Cap** with a "United We Stand" imprint and a ratchet suspension.

The heavy-duty construction of **Skullgard® Caps** and Hats makes them suitable for use in elevated temperatures. They meet/exceed ANSI requirements for a Type I helmet, Class G (electrical low-voltage).

MSA's **Swing Ratchet Suspensions** are favored by workers who wear their MSA hardhats backwards.

The intrinsically safe, non-incendive **Stealthlite Helmet Light** fits into a special helmet adapter for slotted caps.

MSA's thermal nylon **Welding Shields** protect a welder's eyes and face from infrared burns, flying sparks, hot metal spatter, and chips during welding operations. They can be attached to protective helmets with various accessories.

The lightweight polypropylene **Defender® Faceshield** Frame for slotted caps features easy-in, easy-out visor replacement; front drop-edge splash protection; lockdown clip; unlimited lift positions; long-lasting O-ring pivot-joint design; and a snap-in ear muff option. No hardhat is required for the Defender Headgear Faceshield Frame with SparkGard™ Faceshield and ratchet suspension.

**Visors**, which should always be worn with primary eye protection, are made of various materials, such as polycarbonate, acetate, propionate, and wire screen, to shield the face from many hazards.

**Sound Blocker™ 26 Muffs** are one form of available hearing protection; some models can easily integrate with slotted caps and faceshield frames.

**FormFit™ Ear Plugs** are compress-and-insert disposable foam earplugs that come in a bulk pack of 60 pair.

The state-of-the-art **Ultralight™ Cap Lamp System** will illuminate your work site with exceptional brilliance. This complete, low-maintenance, high-performance personal lighting system features the brightest pre-focused spotlight available (tungsten halogen) and a long-life, low-maintenance **Luminator® Battery** and charging system.

MSA's small, simple, inexpensive **Medical Information Carrier System** provides crucial, lifesaving information in case of a medical crisis. The wearer's personal medical information is recorded and attached inside his/her hardhat. A small reflective decal on the helmet alerts emergency personnel.

# Rescue Equipment

**Rescue equipment and descent devices are needed for fall arrest, work positioning, rescue retrieval, and evacuation during Homeland Security activities.**

**ıctical Harness** features easy and doffing, snug adjust- yet great comfort, wide -pelvic support for comfort- ıle suspension, tongue- ɔuckle leg straps, and a waist-level rescue loop for controlled upright and inverted descents. It is made with black webbing to decrease visibility and ⁄inyl-coated hardware to leaden sound.

The **Anthron Descender** is a manually operated controlled-descent device with a cam assembly that provides friction on the rope to hold a load of 300 lbs., or allow the load to descend at a controlled rate. Usually, the Anthron operator attaches the rope end to an approved anchor and descends, suspended, in an approved harness. The Anthron can also be inverted with the device attached to the anchor and the rope end attached to an injured person, who can thus be lowered via rescuer's control.

The **Sky Hook Hoist/System** simplifies confined space and remote rescues that require a device with lifting and lowering capability. The heart of the system is a two-speed self-tailing manual winch with a removable handle, which is mounted to a versatile base plate. This hoist uses any length of standard 1/2" static kernmantle rope and can lift a maximum of 600 lbs. Users can remove/replace the load rope and change to a second rope, minimizing time and equipment to duplicate the job.

The **Gravity™ Rigger/Rescue Harness** is a full body harness that allows the user a high degree of comfort while in the sit position. It is suitable for rappelling/control descent, positioning, rescue, and fall arrest.

The **Vulcan™ Rescue Harness** is a confined space and rescue harness that is suitable for use in hazardous environments. It provides an unparalleled degree of safety, versatility, and comfort and can be used with MSA's SCBA.

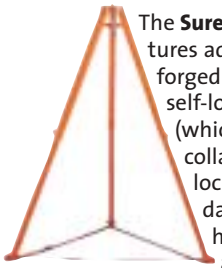
FP rescue components comprise hardware descenders, carabiners, pulleys, rigging plates, and ropes. **Suretyman™ Rescue Figure Eight** and **RQ3 Q-Eight** hardware descenders, MSA **Rescue and Fireman Hook Carabiners**, **Rescue™ Pulleys**, **Static Kernmantle Ropes**, and **Prusik & Accessory Cords** are designed to meet the rigorous standards of professional rescue and police tactical operations.

The **Suretyman™ Rescue Utility System** incorporates all the features professionals expect in a first-class rescue system. Compact and lightweight (17 lbs.), it is primarily used for raising and lowering people or equipment in rescue operations, including confined spaces.

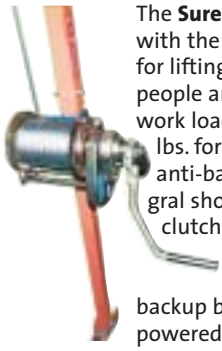
The **Sked Basic Rescue System** is the best solution for confined space, high-angle, and technical rescue. Providing outstanding patient protection and security, the Sked stretcher comes equipped with lift slings for both horizontal and vertical hoisting.

MSA's **Basic High-Angle Rescue Kits** are used by firefighters' high-angle rescue operations. A complete high-angle rescue system consists of a **Belay System Kit** and a **Raising/ Lowering System Kit**. The Belay System Kit includes rescue carabiners, rope, accessory cords, and an anchorage sling in a storage bag. The Raising/ Lowering System includes carabiners, rigging plate, rope, accessory cords, pulleys, brake bar rack, and an anchorage sling in a storage bag.

**Confined Space/Head First Extraction System** is a specialized rescue product for rescuers who must be lowered head first into a confined space to perform a rescue. The small, compact system allows the rescuer to be lowered comfortably, harness the victim, and raise both victim and rescuer out of the confined space.



The **Sure-Strong™ Rescue Tripod** features adjustable aluminum legs; forged steel anchor eyes in the self-locking head assembly (which prevents unintentional collapse); legs that adjust and lock individually to accommodate variations in anchor heights, uneven ground, etc.; and leg security straps. It is rated for 2 people with a working load of 1,100 lbs.



The **Sure-Strong™ Work Winch**, used with the Sure-Strong Tripod, is made for lifting, lowering, and positioning people and materials (maximum work load of 310 lbs. per person, 620 lbs. for materials). It features an anti-backlash crank handle, integral shock absorber, load-limiting clutch, emergency drive for manual bypass when necessary, two independent secondary backup brakes, and an optional air-powered drive assembly.

# Special Information Related to Weapons of Mass Destruction

MSA's Millennium/Advantage 1000 CBA-RCA Gas Mask Canister has been tested to determine how effectively it can protect an individual against a variety of chemical agents.

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 liquid vapors. The HEPA filter removes nearly all of the tear gas agents from the inspired airstream.

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

## MSA Millennium/Advantage 1000 CBA-RCA Canister Testing Conditions and Results

| Challenge Agent | Challenge Concentration, mg/m3 | 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/m3 break | >63 |
| Sarin (GB) Nerve agent | 1000 ±70 | 25 ±0.5 | 60 minutes until a 0.04 mg/m3 break | >70 |
| Hydrogen Cyanide (AC) Blood agent | 550 ±25 | 50 ±3 | 30 minutes until a 5 mg/m3 break | >40 |
| HCN after Equilibration for 6 hours @ 25% RH | 550 ±25 | 50 ±3 | 30 minutes until a 5 mg/m3 break | >40 |
| HCN after Equilibration for 6 hours @ 85% RH | 550 ±25 | 50 ±3 | 30 minutes until a 5 mg/m3 break | >40 |
| ortho-Chlorobenzylidene Malononitrile (CS) Tear Gas Irritant | 23 ±8 | 50 ±3 | 480 minutes until a 0.4 mg/m3 break | >480 |
| CS after Equilibration for 6 hours @ 25% RH | 23 ±8 | 25 ±3 | 480 minutes until a 0.4 mg/m3 break | >480 |
| CS after Equilibration for 6 hours @ 85% RH | 23 ±8 | 85 ±3 | 480 minutes until a 0.4 mg/m3 break | >480 |
| a Chloroacetophenone (CN) Tear Gas Irritant | 101 ±6 | 50 ±3 | 480 minutes until a 0.3 mg/m3 break | >480 |
| CN after Equilibration for 6 hours @ 25% RH | 101 ±6 | 25 ±3 | 480 minutes until a 0.3 mg/m3 break | >480 |
| CN after Equilibration for 6 hours @ 85% RH | 101 ±6 | 85 ±3 | 480 minutes until a 0.3 mg/m3 break | >480 |
| Oleoresin capsicum ($C_{18}H_{27}NO_3$), the "active" ingredient of the OC tear gas Irritant | 0.036 | 50 ±3 | None | >480 until a 0.001 mg/m3 break |
| Cyanogen Chloride (CK) Blood agent | Approx. 4000 | 80 | None | 5 to 9 until an 8 mg/m3 break |

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

# Footnotes

**Q: My organization is new at this. Where can we buy MSA products?**
A: Most companies (large and small) go to MSA's authorized distributors, who are trained in knowledge and use of our products. Call 1-800-MSA-2222, MSA's Customer Service Center, to determine your local distributor, or get product information or literature.

MSA has, for years, made gas masks, breathing apparatus, instruments, etc., for the US Government. Today, 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.

**Q: Because we're First Responders, citizens ask us about gas masks and other protection. What does MSA recommend?**
A: Despite assurances of tightened security and preparedness from government officials, many people still feel helpless. Organizing their own "response" to terrorist attacks with "shelter-in-place" preparations may help them feel more in control. Information on gas mask usage and limitations is on MSA's web site (www.MSAnet.com).

**Q: How can citizens help?**
A: Americans can work together to strengthen their communities. President George W. Bush's newly-proposed Citizen Corps will use volunteers' skills and interests to effectively prevent and respond to the threats of terrorism, crime, or any kind of disaster. Go to www.citizencorps.gov

**Q: Where can I find more information about terrorism, what is being done, and what I can do about it?**
A: Start with FEMA (Federal Emergency Management Agency), state and local government agencies, and other responders to disasters, such as the Red Cross. Call FEMA at 1-800-480-2520, or write to FEMA, PO Box 2012, Jessup, MD 20794-2012. Here are some useful web sites:

**FEMA**
www.fema.gov

**Guide for All-Hazard Emergency Operations Planning: State and Local Guide**
www.fema.com/pte/gaheop.htm

**Protecting Emergency Responders: Lessons Learned from Terrorist Attacks** (conference report, NYC, December 2001) www.cdc.gov/niosh

**Preparedness**
www.fema.gov/pte/prep.htm

**Emergency Managers**
www.fema.gov/emanagers/

**Terrorism**
www.fema.gov/library/terrorf.htm

**Centers for Disease Control and Prevention**
www.bt.cdc.gov

**American Red Cross** (how to create an emergency communications plan)
www.redcross.org/

**Disaster Relief**
www.disasterrelief.org

**Sources, resources, photo credits for this bulletin:**
The US Federal Emergency Management Agency (FEMA),The Salvation Army, Brad Morell of the Salt Lake City Fire Department's Special Operations Division (coordinated the Utah Olympic Public Safety Command), the American Red Cross, Pete Gasparich (Ironworkers Local 40), Ted Jacoby (bomb squad lieutenant and resp. prot. program administrator, Seattle police dept., in 1999), and MSA distributors and employees who have worked at sites of disasters that threatened homeland security. Photographs embody American tragedies at the Oklahoma City Murrah Building, the US Pentagon building, the crash of Flight 93, and the World Trade Center in New York City.

## *About MSA*

*MSA 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.*

*We have produced gas masks for military use since World War I, so we understand the various hazards and demands placed on 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 terrorist destruction at New York City, the Pentagon, Somerset, Pa., and Oklahoma City; during the Three-Mile Island accident; after Mt. St. Helens erupted; and before/during the Seattle WTO meetings and the Salt Lake City Olympics.*

*MSA designs, manufactures, and markets Respiratory Protection; Instruments; Head, Eye, Face, & Hearing Protection; Fire Helmets; Fall Protection and Rescue Equipment; Thermal Imaging Cameras; and Mining, Emergency, & Specialty Equipment via a national network of trained distributors, product specialists, and knowledgeable contacts.*

MSA

# Ordering Information for Personal Protection Equipment from MSA

These examples of personal protection and equipment are appropriate for First Responders and others responding to one or more phases of disaster situations that result from terrorist attacks that breach homeland security. We urge you to discuss your particular needs with your MSA distributor, MSA field representative, or MSA customer service representative BEFORE making final decisions.

**Product is most likely used in:**

| Product | Part Number | Response | Rescue | Recovery |
|---|---|---|---|---|
| **Respiratory Protection** | | | | |
| MMR Xtreme® SCBA (& other NFPA-compliant SCBA, including Dual-Purpose SCBA) | ATO* | | | |
| Custom 4500® MMR Xtreme Air Mask, med. Hycar Ultra Elite® facepiece, FireHawk® regulator, 30-min. Stealth® cylinder, ICM 2000 Plus PASS alarm, Vulcan™ carrier | 10028154 | | | |
| APR adapter for 1/4 turn Mask-Mounted Regulator on SCBA (must use APR cartridges) | 10029823 | | | |
| Quick-Fill® System: Ultralite® MMR Quick-Fill Kit (shoulder) | 10020382 | | | |
| Quick-Fill® System: Custom 4500® Quick-Fill Kit (shoulder) | 10020383 | | | |
| RescueAire™ II Portable Air-Supply System w/ H-60 air cylinder | 10025462 | | | |
| RescueAire™ II Portable Air-Supply System w/ L-30 air cylinder | 10015491 | | | |
| PremAire® System, complete w/ 5-min. composite cylinder, right-hip model, case | 496896 | | | |
| PremAire® System, complete w/ 10-min. composite cylinder, right-hip model, case | 497291 | | | |
| PortAire® Portable Air-Supply System | 807052 | | | |
| TransportAire® Portable Air-Supply System, low-pressure | 816693 | | | |
| TransportAire® Portable Air-Supply System, high-pressure | 812217 | | | |
| ClearCommand® Communications Systems (amplifier kit w/ microphone, amplifier radio interface kit w/ mic, microphone kit w/ mounting bracket) | 10024074<br>10024073<br>10023055 | | | |
| TransAire® 10 Escape Respirator | 10008293 | | | |
| TransAire® 5 Escape Respirator | 10008292 | | | |
| Response™ Escape Hood | 10022208 | | | |
| Millennium® Chemical-Biological Mask, med., complete w/ canister, nosecup, drinking tube, clear polycarbonate outsert | 10007422 | | | |
| Millennium® CBA/RCA Canisters, box of 6 | 818264 | | | |
| Advantage® 1000 CBA/RCA Gas Mask, med., complete w/ canister, nosecup, ID tag | 813859 | | | |
| Advantage® 3000 CBA/RCA Gas Mask, w/ canister, nosecup, ID, medium | 10036325 | | | |
| Advantage® CBA/RCA Canisters, box of 6 | 817590 | | | |
| ESP® II Communications System for Millennium® & Advantage® 1000 Masks | 10026265 | | | |
| Lens outsert for additional impact protection, clear or tinted | Call for details | | | |
| Advantage® 3200 Twin-Port Respirator, with Advantage Harness, med. size | 10031309 | | | |
| Advantage® 200 LS Respirator, med. | 815692 | | | |
| Advantage® 200 LS Respirator Kit, med., with GME cartridges | 816697 | | | |
| GME Advantage Cartridges (1 pair) | 815359 | | | |
| GME P100 Advantage Cartridges (1 pair) | 816366 | | | |
| OptimAir® MM 2K PAPR, medium, w/ Advantage head harness | 10034153 | | | |
| OptimAir® 6A PAPR, complete w/ med. Ultravue® facepiece, lithium battery, belt, motor/blower module. Add OptiFilter® cartridges/filters | 816892 | | | |
| CBA/RCA OptiFilter® Cartridges for OptimAir 6A PAPR, box of 6 | 10011890 | | | |
| OptiFilter® Cartridges for OptimAir® 6A PAPR for HE + various vapors (boxes of 6 or 50) | Call for details | | | |
| Affinity® Maintenance-Free Respirators (disposable) | Call for details | | | |
| **Instruments** | | | | |
| FiveStar® Alarm | ATO* | | | |
| FiveStar® Alarm, deluxe kit, with LEL, O2, CO, H2S sensors; NiCd battery, calibration kit, fast charger, Pulsecheck Pump, line, probe, case | 10018002 | | | |
| Passport® VOC 2000 Monitor | ATO* | | | |
| Passport® VOC 2000 Monitor Kit (w/NiCd battery, charger, 10-ft. Teflon sampling line, 1-ft. probe, belt clip) | 10010864 | | | |
| Toximeter™ II Automatic Detector Tube Pump | 655585 | | | |
| Kwik-Draw® Deluxe Pump, with remote adapter | 487500 | | | |
| CWA Detector Tubes (choice of 5 types) (box of 10 tubes) Nerve, Blister, Blister, Blister variety, Blood & Choking (See page 14, last column) | 10007650 to 10007654 | | | |
| Detector Tubes, other than CWA | Call for details | | | |
| Orion® Multigas Detector | ATO* | | | |
| Orion® Multigas Detector Deluxe Kit | 10030399 | | | |
| Responder® Alarm for O2 | 710965 | | | |
| Responder® Alarm for CO | 710424 | | | |
| Responder® Alarm for H2S | 710850 | | | |
| Pulsar™ Single-Gas Detector for CO | 10032580 | | | |
| Pulsar™ Single-Gas Detector for O2 | 10032596 | | | |
| Escort® LC Sampling Pump Kit (incl. charger) | 711400 | | | |
| Calibration kits, accessories | Call for details | | | |

** "ATO" means "Assembled-To-Order." The customized product is built to your specifications. Call for details.*
*Discuss your needs for additional PPE—gloves, clothing, boots, first aid supplies, and other items—with your MSA distributor.*
*Coming soon: more Homeland Security information on www.MSAnet.com*
*Services: training in product use (including videotapes), fit-testing help, fire helmet refurbishing, product repair, instrument calibration.*

| Product | Part Number | Response | Rescue | Recovery |
|---|---|---|---|---|
| **Thermal Imaging Cameras** | | | | |
| Evolution® 4000 TIC, w/ 2 rechargeable NiMH battery packs, double-slot charger, Quick-Temp Indicator, video transmitter, shoulder strap, case | 10021136 | | | |
| Evolution® 4000 TIC, w/ 2 NiMH batteries, vehicle-mounted charger, BNC connector, Quick-Temp Indicator, video transmitter, shoulder strap | 10036338 | | | |
| Evolution® 4000 TIC, w/ 2 NiMH batteries, double-slot charger, shoulder strap, case | 10021134 | | | |
| Evolution® 4000 TIC, w/ 2 NiMH batteries, vehicle-mounted charger, BNC connector, shoulder strap | 10036335 | | | |
| Evolution® 3000 TIC, w/ 1 NiMH battery pack, single-slot charger, pyrometer, video transmitter, BNC connector, 2 side straps, case | 10021163 | | | |
| Evolution® 3000 TIC, w/ 1 NiMH battery pack, single-slot charger, 2 side straps, case | 10021161 | | | |
| **Head, Eye, Face, Hearing Protection** | | | | |
| HP3 Commando CairnsHELMETS® Fire Helmet (brimless, low-profile, fiberglass composite) | B-MOD 5321112 | | | |
| 515 Navigator CairnsHELMETS® Fire Helmet (continuous 1 1/4" brim) | B-MOD 4621112 | | | |
| 660C Metro CairnsHELMETS® Fire Helmet (full brim, fiberglass composite) | B-MOD 2571112 | | | |
| 1010 CairnsHELMETS® Fire Helmet (traditional, fiberglass composite) | B-TRD 11211112 | | | |
| Clearvue® 200 Goggles, with fog-free lens, non-vented | 696776 | | | |
| Respirator Goggles, clear, 4-vent frame, anti-fog lens, elastic headband | 461027 | | | |
| Sierra™ Eyewear, blue frame w/clear anti-fog lens | 10023610 | | | |
| Sierra™ Eyewear, black frame w/gray anti-fog lens | 10010572 | | | |
| Arctic™ Eyewear, clear lens | 697514 | | | |
| Arctic™ Eyewear, gray lens | 697515 | | | |
| Standard V-Gard® Slotted Cap, white, w/ Fas-Trac® Ratchet Suspension | 475358 | | | |
| Standard V-Gard® Slotted Cap, white, w/ Swing Ratchet Suspension (for reversing cap) | 10004689 | | | |
| Standard V-Gard® Slotted Cap, white, w/ Staz-On® suspension, lamp bracket & cord holder | 460018 | | | |
| Special V-Gard® Cap with reflective Search & Rescue half moon stripe, 2 1x4 retroreflective stripes and/or cap lamp bracket & cord holder and/or welding lugs, etc. | Call for details | | | |
| "United We Stand" logoed med. white V-Gard® Cap w/ Fas-Trac® Ratchet Suspension | 10034263 | | | |
| Skullgard® Cap, med., natural tan, w/Fas-Trac® Ratchet Suspension | 475395 | | | |
| Skullgard® Cap, med., natural tan, w/ Swing Ratchet Suspension | 816651 | | | |
| Skullgard® Cap, med., w/ Staz-On® Suspension, w/ cap lamp bracket & cord holder | 460409 | | | |
| Skullgard® Cap, med., w/ welding lugs | 482002 | | | |
| Welding Shield, non-coated black, slim-line, lift front, 2" x 4" plate size | 695943 | | | |
| Welding Shield, coated silver, slim-line, fixed front, 4" x 5" plate size | 695888 | | | |
| Welding Shield, non-coated black, full curve, fixed front, 4" x 5" plate size | 695903 | | | |
| Stealthlite Helmet Light | 697261 | | | |
| Stealthlite Holder for slotted caps | 814322 | | | |
| Chinstrap, plastic (attaches to helmet shell) | 88128 | | | |
| Defender® Faceshield Frame for med. V-Gard Cap (less visor) | 10021614 | | | |
| Defender® Faceshield Frame for slotted caps (less visor) | 10021616 | | | |
| Defender® Metal Foldback Faceshield Frame for Cap (OK for Skullgard) (less visor) | 488160 | | | |
| Clear Polycarbonate Visor (formed) (8" x 16" x .060") | 488132 | | | |
| Clear Polycarbonate Visor (flat) (8" x 15.5" x .040") | 10017934 | | | |
| Defender® Headgear Faceshield Frame w/ Sparkgard & ratchet suspension (less visor) | 10021611 | | | |
| Sound Blocker™ 26 Muffs for Defender® Faceshield Frame | 10026398 | | | |
| Sound Blocker™ 26 Muffs for slotted cap | 10003346 | | | |
| FormFit™ Disposable Foam Ear Plugs (Bulk pack of 60 pair) | 10019434 | | | |
| Medical Information Carrier System (pkg. of 10) | 10013393 | | | |
| Ultralight™ Cap Lamp & Single-unit AC Power Builder® Charger & Multipurpose Miner's Pouch | 817171, 10002436 803100 | | | |
| **Rescue Equipment and Descent Devices** | | | | |
| FP Tactical Harness (black webbing, vinyl-coated hardware), standard size | 10021371 | | | |
| Anthron system w/Anthron descender, 2 carabiners, 50' rope | SDC 726-050 | | | |
| Anthron system w/Anthron descender, 2 carabiners, 100' rope | SDC 726-100 | | | |
| Anthron system w/Anthron descender, 2 carabiners, 150' rope | SDC 726-150 | | | |
| Sky Hook Hoist, with capstan protective cover | SRS071 | | | |
| Gravity™ Rigger/Rescue Harness, black poly webbing, cross-over design | SSH60930001 | | | |
| Vulcan™ Rescue Harness, standard size | 10013403 | | | |
| Suretyman™ Rescue Figure Eight, steel | SRSF5077 | | | |
| Suretyman™ RQ3 Q-Eight, aluminum | SRSF5045 | | | |
| MSA Rescue Carabiner, 1.2" gate, steel, auto-locking | SRCC642 | | | |
| Fireman Hook Carabiner, 2" gate, steel, auto-locking | SRCC307 | | | |
| Pulleys and Rigging Plates and Rescue Ropes | Call for details | | | |
| Suretyman Rescue Utility System (200' length) | SRS15-200 | | | |
| Sked Basic Rescue System, International orange | SRSSK-200 | | | |
| Basic High-Angle Rescue Kits: Belay System Kit | 10030023 | | | |
| Raising/Lowering System Kit | 10030024 | | | |
| Confined Space/Head First Extraction System | SRS3100 | | | |
| Sure-Strong™ Tripod, 10 ft H.D., aluminum, 48 kN | SCE107010HD | | | |
| Sure-Strong™ Work Winch, 200 ft galvanized wire rope, with bracket | SCE1074021200 | | | |

**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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