

## MCU-2/P Chemical-Biological Mask ★

When the United States Air Force has a risk of chemical warfare attack, it needs respiratory protection, it turns to MSA for the reliability—and durability—of the MCU-2/P Chemical-Biological Mask. The MCU-2/P Mask has proven to be the respirator of choice for the Air Force as well as other U.S. Government agencies, including the U.S. Navy, the Federal Bureau of Investigation (FBI) and the Coast Guard, to name a few.

MCU-2/P Mask is available in small, medium and large sizes to accommodate a wide range of respirator users. It uses the ESP II Communications System (optional).

The MCU-2/P Mask is shipped complete with a drinking tube and an internal nosecup that deflects exhaled air away from the eyepiece to eliminate fogging. Accessories include clear outsert, tinted outsert, laser-protective outsert, durable carrier and butyl hood.

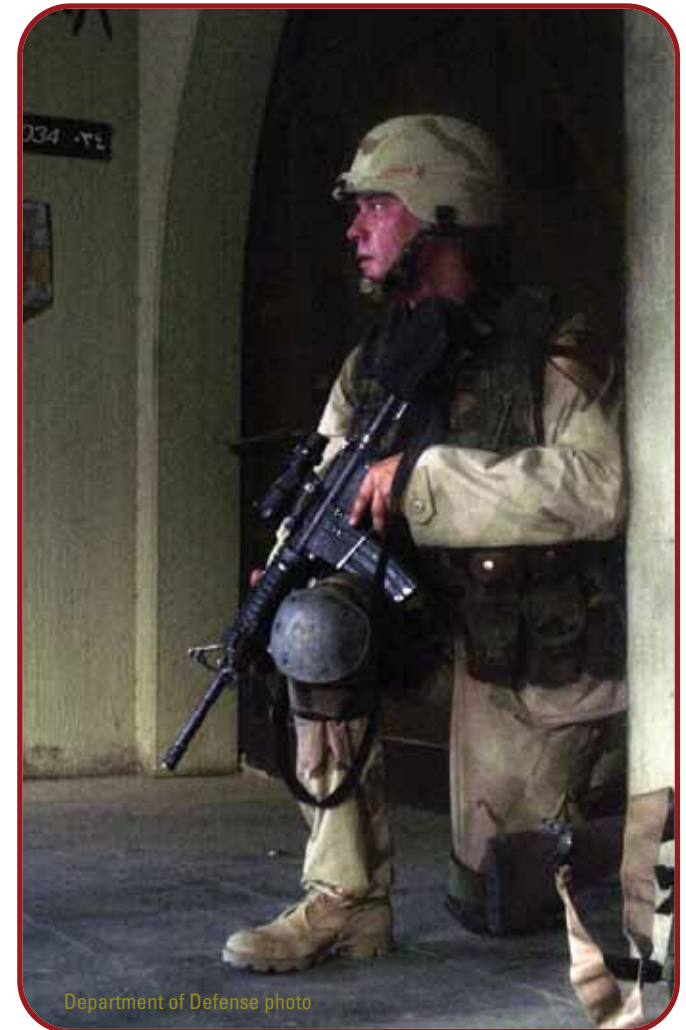


### MCU-2/P Chemical-Biological Mask

Part No.	Description
305530	MCU-2/P Mask, grey (small)
305531	MCU-2/P Mask, grey (medium)
305532	MCU-2/P Mask, grey (large)

### Accessories

Part No.	Description
816137	Prescription spectacle kit
305131	Tinted outsert assembly (small)
305132	Tinted outsert assembly (medium/large)
306666	Laser outsert assembly, 2 band (small)
306668	Laser outsert assembly, 2 band (medium/large)
306667	Laser outsert assembly, 3 band (small)
306669	Laser outsert assembly, 3 band (medium/large)
10026265	ESP® II Communications System
305022	NBC Hood
305023	Carrier
305026	Clear Outsert (small)
305027	Clear Outsert (medium/large)



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## Responder™ PAPR (Powered Air-Purifying Respirator) ★

A belt-mounted powered air-purifying respirator with choice of 2 proven tight-fitting facepieces in 3 sizes. The motor/blower provides constant air flow of a minimum 115 lpm to the facepiece via the breathing tube. Can be used with cartridge designed to meet upcoming NIOSH CBRN PAPR requirements or with the OptiFilter® XL or PAPR GME Multigas HE cartridge for tactical operations.

- Protects wearers for up to 8 hours under many hazardous conditions
- Passed MSA developmental tests against live chemical warfare agent as proposed by the recently published PAPR CBRN standard
- Choice of 2 proven positive-pressure facepieces, the MSA Millennium and the MSA Ultra Elite
- Choice of CBRN cartridge (pending approval) or multi-gas / particulate chemical cartridges for non-CBRN use

MSA's C420 PAPR system is ideal for military and special operations personnel who need non-IDLH respiratory protection for an extended period of time.

Industry trusted, with over 50,000 C420's fielded in various U.S. military programs, the C420 Motor-Blower is ideal for filtering contaminants from ambient air and providing a constant airflow of at least 115 lpm to the user's facepiece, providing a twenty times greater OSHA assigned protection factor than APR, due to positive pressure in the mask.

The C420 is available with 2 batteries that have the ability to be "hot-swapped" during warm environment use. The Lithium-Sulfur Dioxide mission battery has an 8 hour run-time. The Nickel Metal Hydride rechargeable battery has a 4 hour run-time. The motor / blower will not interfere with radio communications as it is EMI shielded to MIL-STD-461C.

The C420 comes complete with the motor-blower, belt, airflow indicator and breathing tube.



C420 PAPR with Millennium Facepiece and CBRN cartridges



C420 PAPR with Ultra Elite Facepiece and multigas cartridges

### Accessories for C420 PAPR

Part No.	Description
B-20040-001	NiMH Rechargeable Kit (2 NiMH Batteries, Charger & Cap)
S-20036	NiMH Rechargeable Battery Pack
B-20090-001	NiMH Rapid Battery Charger
M-20020	LiSO <sub>2</sub> Mission Battery
B-30060-001	NiMH Rechargeable Battery Cap Assembly
S-30019	Web Belt Assembly
B-10079-001	PAPR Carrying Case

#### About the CBRN PAPR Standard

NIOSH released a CBRN standard for powered air-purifying respirators (PAPRs) in October 2006. NIOSH will conduct product testing and issue approvals to manufacturers' respirators that pass the NIOSH requirements, expected early in 2007.

### C420 PAPR

You must choose C420 PAPR Kit, facepiece, and cartridge for complete system.

Part No.	Description				
<b>C420 PAPR Kits (less facepiece and cartridge)</b>					
B-60141-030	C420 PAPR Kit with 30" Breathing Tube				
B-60141-036	C420 PAPR Kit with 36" Breathing Tube				
<b>Gas Mask Facepieces with Head Harness (less cartridge)</b>					
Facepiece	Material	Head Harness	Size		
			Small	Medium	Large
Millennium	Hycar	6-point elastic	10051286	10051287	10051288
Ultra Elite	Hycar	rubber	10052776	10052781	10052778
Ultra Elite	Hycar	Speed-ON	10052780	10052779	10052777
<b>Cartridges</b>					
Part No.	Description				
10071055	PAPR Responder* cartridge, each				
496081	OptiFilter XL cartridge, 6 pack				
10072237	PAPR GME Multigas HE cartridge, each				

\*Designed to meet upcoming NIOSH CBRN PAPR Requirements.

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## Millennium® Facepiece

- Flexible, 1-piece polyurethane lens with wide field of vision is bonded to durable Hycar rubber facepiece.
- Dual-breathing tube mount allows weapon sighting from either shoulder
- Drinking tube provides connection for fluid ingestion in uncontaminated atmospheres
- Fully elastic, 6-point head harness promotes easy on/off and adjustment, with no hair pulling
- Internal nose cup 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
- Optional butyl-coated nylon hood for total head protection



## Ultra Elite® Hycar Facepiece

- Large lens with 83% unimpeded vision
- Centrally located inlet port for secure, comfortable fit and feel
- Centrally located mechanical speaking diaphragm for clear communications
- Optional ClearCommand® Amplifier for increased communication capabilities
- Available with a 5-point rubber or Speed-ON® head harness



### Accessories for Ultra Elite Facepiece

Part No.	Description
<b>ClearCommand</b>	
10024074	Amp
10051290	Amp / RI
10023055	Bracket Only
305022	Butyl Hood
<b>Cover Lens</b>	
491500	Clear
805456	Tinted
804638	Spectacle Kit

### Accessories for Millennium Facepiece

Part No.	Description
10026265	ESPII Communications System
305022	Butyl Coated Nylon Hood
10034184	Gas Mask Pouch
816137	Spectacle Kit
<b>Cover Lens</b>	
10008907	Clear, Small
10008906	Clear, Medium/Large
10008909	Tinted, Small
10008908	Tinted, Medium/Large

### Storage Device for Facepieces

Part No.	Description
D2056734	Hard Case
10034184	Pouch

### Other Accessories

Part No.	Description
697444	Bitrex Qualitative Fit Test Kit
10009971	MSA Confidence Plus Germicidal Cleaner, in 32 oz. bottle



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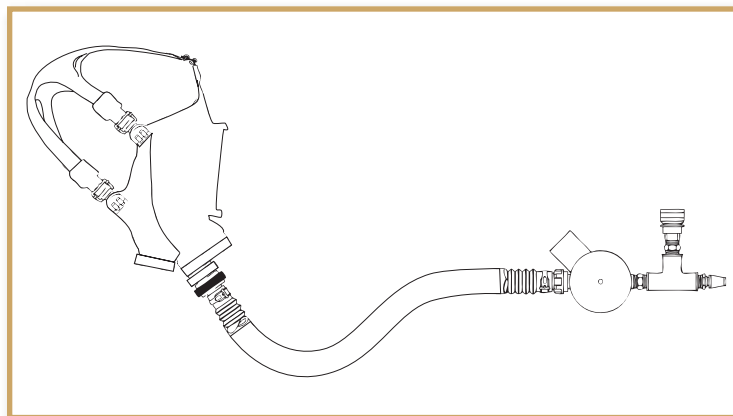
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## Demand Respirator for Confined Spaces ★

Pressure-Demand Air-Line Respirators are designed to maintain a slight positive pressure of air inside the facepiece whether the wearer is inhaling or exhaling. This helps prevent contaminants from seeping in around the facepiece, even if there should be small breaks in the face-to-facepiece seal.

Pressure-Demand Air-Line Respirators are designed specifically for non-IDLH toxic atmospheres. The exception is if the respirator is equipped with an egress cylinder of air to use during escape.

Pressure-Demand Air-Line Units require an air supply from an uncontaminated compressed-air source as stipulated in General Industry Safety and Health Regulations, Part 1910.134 (OSHA) with the delivered air conforming to at least Grade D of ANSI Standard Z86.1.



### Demand Respirator

Part No.	Description
95021	Demand Respirator with buddy connector



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## FireHawk® Air Mask with CBRN Protection ★

MSA has you protected with the latest enhancements to our FireHawk Air Mask, the fire service's FIRST NFPA 1981-2002 edition, NIOSH-approved CBRN self-contained breathing apparatus.

MSA's new FireHawk CBRN SCBA was developed to provide you with positive protection from CBRN agents, according to the stringent live-agent test regimen of the NIOSH approval process. Because conventional silicone diaphragms are among the SCBA components most vulnerable to CBRN agent permeation, our positive-protection design seals the new diaphragm of the Firehawk® regulator from any initial contact with contaminants.

The key to this protection are these revolutionary components, which lie within the CBRN version of the second-stage regulator:

- MSA's exclusive Tetraplex™ Protective Shield (patent pending).
- A permeation-resistant regulator diaphragm made of a proprietary rubber compound.
- A modified valve core body (the engine of the regulator).

These components, plus one of the industry's best-fitting facepieces, MSA's Ultra Elite® Facepiece, ensure reliable and effective respiratory protection not only from agents that might be used in a terrorist attack, but also from many of the lethal byproducts of combustion that



are encountered in everyday firefighting. Chemical plants, nuclear facilities, laboratories, and other industries harbor unknown and life-threatening environments that you might have to face. With MSA's CBRN FireHawk Air Mask, you can be positive you are protected.

## FireHawk® Air Mask (Self-Contained Breathing Apparatus - SCBA) ★

### Safety

- MSA's **exclusive Quick-Fill® System** makes every SCBA capable of both receiving and donating air to firefighters in need. Although the NFPA standard requires all brands of SCBA to incorporate the RIC connection, only the MSA Air Mask can make full utilization of the fitting with our exclusive transfilling capability.
- An NFPA-compliant emergency egress system, integral to the SCBA waist belt, is available as an option. This **Rescue Belt** comes complete with Kevlar line (50 ft. or 75 ft.) and rappelling hardware.
- The all new **Airframe™ Carrier and Harness** comes standard, with large side handles and a central attachment point for pulling firefighters to safety in rescue scenarios.
- MSA's Ultra Elite® Facepiece is designed with a **one-way check valve** to prevent cross-contamination. Although regulators are shared among users, harmful pathogens (SARS, hepatitis, flu virus) are kept within each individual-issue facepiece.
- **Wireless electronics** add safety benefits by eliminating snag hazards that can accompany unnecessary wires on an SCBA.

### Simplicity

- An optional **swiveling lumbar pad** for maximum freedom of movement and comfort when crawling or climbing.
- A **slide-to-connect** or **push-to-connect** regulator attachment to meet the widest range of your preferences.
- Modular **"stand alone" electronic components** for easy maintenance, with no wires to route and no complicated mounting brackets.
- A maintenance policy that delivers the **lowest possible cost of ownership**, based on the frequency of use of the Air Mask. For many departments, this means only conducting an annual flow test according to the NFPA 1852 standard. Even a busy department using one cylinder every other day would find the cost of maintaining an SCBA to be less than \$7 per year.
- State-of-the-art regulator designs that have among the **fewest number of parts** in the industry. The Firehawk regulator requires no tools, lubricants, or sealants in its maintenance.
- **NFPA and CBRN upgrade kits** to help users meet the most current performance standards.

### Reliability

- **In-house manufacturing** of nearly every pneumatic, electronic, and structural component of the Air Mask to ensure optimal quality and performance.
- Use of the **highest quality** and grades of stainless steel and aluminum with select blends of Kevlar, rubber, and plastic molding compounds for the highest strength and durability.
- A "best-in-class" service network with **over 2,000 certified repair facilities** and a team of service specialists, committed to resolving customer issues any time, anywhere, all backed by a lifetime warranty.

### Assemble-To-Order System

MSA's Assemble-To-Order System (ATO) will make ordering the right mask easier and faster than ever. Instead of choosing from a handful of complete Air Mask assemblies, users can order a custom-made Air Mask with every option exactly as desired. See ATO chart on p. 27 and contact the MSA Customer Service Center for details.

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## FireHAWK® Air Mask

**CBRN Compliant FireHawk® Air Mask**  
(NFPA 1981-2002 edition compliant, NIOSH 42 CFR Part 84 CBRN certified)

SCBA Type	Carrier/Harness Assembly	Lumbar Pad/Rescue Belt†	Cylinder	MMR Regulator Type	Air-Line Options	Emergency Breathing System	Facepiece	Nosecup	Head Harness	Communications	Gauge/Integrated PASS	Case
UM 2216 FireHawk Air Mask	A Airframe Single Pull without Chest Strap	0 None	0 None	N CBRN Firehawk STC, Threaded, Solid Cover	0 None	0 None	A None	0 None	0 None	A Standard Speaking Diaphragm	A None	0 None
	B Airframe Double Pull without Chest Strap	1 Lumbar Pad	1 3AL Aluminum	Q CBRN Firehawk STC, QC, Solid Cover		1 Quick-Fill Shoulder Mounted*	B Ultra Elite Hycar, Small	1 Medium	2 Speed-ON less Neckstrap	B Clear-Command Ready	B Pressure Gauge	1 Hard Case
	C Airframe Single Pull with Chest Strap	2 Swiveling Lumbar Pad	2 Hoop-Wound	R CBRN Firehawk PTC, Threaded, Solid Cover		3 ExtendAire (EBS) with Dual Quick-Connect	C Ultra Elite Hycar, Medium	2 Large	4 Speed-ON with Neckstrap	C Clear-Command AMP	C ICM Tx with Heat Sensor	2 Soft Case
	D Airframe Double Pull with Chest Strap	A Rescue Belt, Standard 50"	3 30" Carbon	S CBRN Firehawk PTC, QC, Solid Cover		4 Shoulder Mounted Quick-Fill & ExtendAire (EBS) with Dual Quick-Connect*	D Ultra Elite Hycar, Large			D Clear-Command AMP/RI (Less PTT)	D ICM Tx without Heat Sensor	
MM 3000 FireHawk Air Mask	Options A & C can only be chosen if either a rescue belt or an air-line option is selected.	B Rescue Belt, Standard 75"	4 3AL Aluminum less Air									
		C Rescue Belt, Long 50"	5 Hoop-Wound less Air									
CM 4500 FireHawk Air Mask	Options A & C can only be chosen if either a rescue belt or an air-line option is selected.	D Rescue Belt, Long 75"	6 30" Carbon less Air									
		E Swiveling Rescue Belt, Standard 50"	0 None									
		F Swiveling Rescue Belt, Standard 75"	1 30" + Carbon									
		G Swiveling Rescue Belt, Long 50"	2 30" + Carbon less Air									
		H Swiveling Rescue Belt, Long 75"	3 45" Carbon									
		4 45" Carbon Low-Profile										
		5 60" Carbon										
		6 30" Carbon less Air										
		7 45" Carbon less Air										
		8 45" Carbon Low-Profile less Air										

\*Note: Standard Rescue Belt fits waist sizes up to 54 inches. Long Rescue Belt fits waist sizes up to 74 inches.

K- \_\_\_\_\_  
Part Number \_\_\_\_\_

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## Safe Escape™ CBRN Respirators ★

When escaping from CBRN agents, every second counts. Depend on the Safe Escape Hood from MSA. The hood gives your employees the protection they need to escape from a terrorist situation safely, quickly, and easily — whether they work in high-profile office environments, for government agencies or embassies, or as law enforcement or first responders. The MSA Safe Escape Hood is the equipment of choice for today's diverse workforce.

### Engineered for Maximum Performance

Manufactured with a high-performance laminate material, the hood is designed to provide you with the latest in head and neck coverage with respiratory protection against CBRN agents. The soft, high-stretch rubber neck seal conforms to irregular neck contours, allowing a secure fit on a wide variety of users. Its unique sized nose cup helps reduce lens fogging and carbon dioxide buildup by directing air flow inside the hood.

The Safe Escape Hood canister features a high-efficiency particulate filter and activated carbon to combat aerosols, gases, and vapors. In fact, the canister used in the hood contains 50% more carbon than similar canisters used by the U.S. military. Furthermore, MSA has performed extensive testing on the Safe Escape Hood against both simulated and live chemical agents—beyond what is tested by NIOSH.



Hextreme Case

### Designed for Comfort

In addition to designing the hood for maximum protection, MSA also took into account the comfort factor. A user who is potentially under stress requires ease of donning and use. The large lens and translucent hood allow better visibility, face recognition, and minimal claustrophobia. The nose cup allows communication superior to that of conventional devices, which require wearers to breathe through a mouth bit. With the integrated nose cup, wearers can breathe and speak normally to provide potentially life-saving communications. The hood also features cradle-type self-adjusting head straps that allow for quick, no-assistance donning in the event of an emergency.



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### Canister Test Challenge and Test Breakthrough Concentrations

Agent	Test Concentration	NIOSH CBRN Allowable Breakthrough	Safe Escape Average Breakthrough Time
HD-Vapor	50 mg/m <sup>3</sup>	0.6 mg/m <sup>3</sup>	> 45 min.
GB	210 mg/m <sup>3</sup>	0.087 mg/m <sup>3</sup>	> 45 min.
Ammonia	1250 ppm	25 ppm	> 40 min.
Cyanogen chloride	150 ppm	2 ppm	> 30 min.
Cyclohexane	1300 ppm	10 ppm	> 40 min.
Formaldehyde	250 ppm	1 ppm	> 120 min.
Hydrogen cyanide	470 ppm	4.7* ppm	> 200 min.
Hydrogen sulfide	500 ppm	5 ppm	> 200 min.
Nitrogen dioxide	100 ppm	1 ppm NO <sub>2</sub>	> 50 min.
Phosgene	125 ppm	1.25 ppm	> 450 min.
Phosphine	150 ppm	0.5 ppm	> 290 min.
Sulfur dioxide	750 ppm	5 ppm	> 30 min.

\* Sum of HCN and C<sub>2</sub>N<sub>2</sub>

### Safe Escape Respirators (Universal Size)

Part No.	Description
10073702	Safe Escape Respirator in Hextreme Case, standard
10073923	Safe Escape Respirator in Hextreme Case, tactical version
10073703	Trainer version of Safe Escape Respirator

**Note:** The only difference between the standard version and tactical version is the outer labeling on the hextreme case.

### Accessories

Part No.	Description
10068310	Optional carrying straps and harness kit

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