



## Advantage<sup>®</sup> 1000 CBA-RCA and Millennium Gas Masks

[ Designed for use by Law Enforcement and Emergency Personnel ]

### Advantage<sup>®</sup> 1000 CBA-RCA (Chemical/Biological Agent-Riot Control Agent) Gas Mask

- Has flexible, one piece polyurethane lens with wide field of vision, bonded to a durable super-soft Hycar rubber facepiece.
- Is NIOSH approved for protection against CN and CS tear gas.
- Is effective against, but does not have approval for OC tear gas.
- Is effective against biological agents and chemical warfare agents.
- Has dual-canister mount to allow weapon firing from either shoulder.

### Advantage<sup>®</sup> 1000 CBA-RCA Gas Mask

The Advantage 1000 CBA-RCA Gas Masks from MSA are specifically designed for use by law enforcement and emergency response personnel. The facepiece features a single low-profile canister. The gas mask is NIOSH approved (No. TC-14G-0235) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level and particulates. The gas mask does not have NIOSH approval for oleoresin capsicum, the “active” ingredient of OC Tear Gas. The canister provides up to eight hours service time against CN, CS, and OC agents. Please see the table on page three for additional information.

### Millennium Chemical-Biological Gas Mask

- Has flexible, one piece polyurethane lens with wide field of vision, bonded to a durable super-soft Hycar rubber facepiece.
- Is NIOSH approved for protection against CN and CS tear gas.
- Is effective against, but does not have approval for OC tear gas.
- Is effective against biological agents and chemical warfare agents.
- Has dual-canister mount to allow weapon firing from either shoulder.
- Has drinking tube to allow fluid ingestion in contaminated atmospheres.

The Advantage 1000 CBA-RCA Gas Masks are also effective against biological agents, along with the following chemical warfare (CW) agents: GA, GB (Sarin), GD, VX, Mustard, and Lewisite. Testing conducted by MSA and independent laboratories assures that the gas mask and canister 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. Please see the table on page three for additional information.

The Advantage 1000 CBA-RCA Gas Mask is a clean, simplified respirator with super-soft 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.

The flexible, 1-piece polyurethane lens has a wide field of vision and is bonded to a durable super-soft Hycar rubber facepiece. Bonding a flexible lens to the facepiece eliminates the need for a rigid lens that can cause uncomfortable pressure points. The facepiece has a wraparound design that minimizes dead-air space and provides good vision. The compact size also permits easy integration with most visored police helmets.

The facepiece has canister inlet ports on either side of the facepiece. The canister position (bayonet mount) can be switched to enable the user to sight a weapon from either shoulder.

The Advantage 1000 CBA-RCA Gas Masks are molded of super-soft black Hycar rubber, a specially formulated combination of natural rubber and synthetic materials. The facepiece is soft and pliable for a snug, comfortable fit. Hycar resists chemical attack and temperature extremes, and is able to withstand rugged daily use. Hycar is particularly resistant to permeation against chemical warfare agents. The fully elastic, 6-point head harness promotes easy on-off, easy adjustment, with no hair pulling.

Standard equipment includes a speaking diaphragm for clear, short-range communications, or add MSA's optional ESP Communication System. The facepiece also features a nose cup, to reduce lens fogging in low temperatures or high humidity conditions.

#### **Millennium Chemical-Biological Gas Mask**

The Millennium Chemical-Biological Mask is a Hycar version of the reliable military-style gas mask (MCU-2/P Mask, used by the Air Force in Desert Storm). The mask combines high performance, customized fit, comfort, and cost-efficiency and is ideal for law enforcement and emergency response personnel. The gas mask is NIOSH approved (No. TC-14G-0254) for protection against chloroacetophenone (CN), chlorobenzylidene (CS), P100 particulate efficiency level and particulates. The gas mask does not have NIOSH approval for oleoresin capsicum, the "active" ingredient of OC Tear Gas. The canister provides up to eight hours service time against CN, CS, and OC agents. Please see the table on page three for additional information.

The Millennium Chemical-Biological Gas Masks are also effective against biological agents, along with the following chemical warfare (CW) agents: GA, GB (Sarin), GD, VX, Mustard, and Lewisite. Testing conducted by MSA and independent laboratories assures that the gas mask and canister 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. Please see the table on page three for additional information.

The Millennium Chemical -Biological Gas Mask is a light-weight 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.

As with the Advantage 1000 CBA-RCA Gas Mask the Millennium Gas Mask features a flexible, 1-piece polyurethane lens with a wide field of vision, bonded to a durable Hycar rubber facepiece. Bonding a flexible lens to the facepiece eliminates the need for a rigid lens that can cause uncomfortable pressure points. The facepiece has a wraparound design that minimizes dead-air space and provides good vision. The compact size also permits easy integration with most visored police helmets.

The facepiece has canister inlet ports on either side of the facepiece. The canister position (NATO 40 mm thread) can be switched to enable the user to sight a weapon from either shoulder. The use of a standard 40 mm thread size provides the option of using a NATO-style gas mask canister (NIOSH approval valid only with Millennium canister).

The Millennium Gas Masks are molded of super-soft black Hycar rubber, a specially formulated combination of natural rubber and synthetic materials. The facepiece is soft and pliable for a snug, comfortable fit. Hycar resists chemical attack and temperature extremes, and is able to withstand rugged daily use. Hycar is particularly resistant to permeation against chemical warfare agents. The fully elastic, 6-point head harness promotes easy on-off, easy adjustment, with no hair pulling.

Standard equipment includes a speaking diaphragm for clear, short-range communications, or add MSA's optional ESP II Communication System. The facepiece also features a nose cup, to reduce lens fogging in low temperatures or high humidity conditions.

## **PERFORMANCE OF ADVANTAGE 1000 CBA-RCA/MILLENNIUM CANISTER AGAINST VARIOUS CHEMICAL AGENTS**

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

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

<b>Challenge Agent</b>	<b>Challenge Concentration, mg/m<sup>3</sup></b>	<b>Relative Humidity, %</b>	<b>Minimum Service Time Requirement</b>	<b>TEST RESULTS: Service Time until Break, in minutes</b>
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

Note 1. CK testing was performed according to Mil-C-51560 by Edgewood Arsenal.

Note 2. GB testing was performed by TNO Netherlands.

## ORDERING INFORMATION

**Advantage 1000 CBA-RCA Gas Mask**, complete with canister, nosecup and identification tag.

Part No.	Description
813860	Advantage 1000 CBA-RCA, small
813859	Advantage 1000 CBA-RCA, medium
813861	Advantage 1000, CBA-RCA, large
<b>Canisters for Advantage 1000 CBA/RCA</b>	
817590	Advantage 1000 CBA/RCA Canisters, box of 6

**Millennium Chemical-Biological Gas Mask**, complete with canister, nosecup, drinking tube and clear polycarbonate lens outsert.

Part No.	Description
10007423	Millennium, small
10007422	Millennium, medium
10007424	Millennium, large
<b>Canisters for Millenium CBA/RCA</b>	
818264	Millennium CBA/RCA Canisters, box of 6

## ACCESSORIES

### ESP® II Communications System



The ESP 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 lasts up to 18 hours.

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

### Lens Outsert

Polycarbonate lens outsert snaps into place over Advantage 1000 or Millennium facepiece lens, providing additional impact protection.

Part No.	Description
LENS OUTSERT FOR ADVANTAGE 1000	
806463	Small, clear
806462	Medium/Large, clear
<b>Lens Outsert for Millennium</b>	
10008907	Small, clear
10008906	Medium/Large, clear

### Carrier

Part No.	Description
817040	Carrier, Black Vinyl

### Spectacle Kit



For use by those who must wear corrective lenses; easily inserted into the facepiece. Kit includes wire support, rubber guide and one pair of metal-frame spectacles.

Part No.	Description
816137	Prescription Spectacle Kit, Universal bridge, 44 mm lens size (less lenses); for use with Advantage 1000 Facepiece

### Hood

All skin should be covered when encountering any suspect biological or chemical warfare agent. The butyl hood offers protection against liquids and should be worn with additional clothing to completely cover the skin.

Part No.	Description
305022	Butyl-Coated Nylon Hood

**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.



ID 05-00-03-MC / Sep 2001  
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