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TO: All Fire & Rescue Personnel
FROM: Scott Kensinger, Deputy Chief
RE: New 40mm SCBA Canisters
DATE: March 9, 2015

INFORMATIONAL BULLETIN IB-15011

The department will be replacing all 40mm SCBA canisters in the very near future as our old issued devices have expired. The following procedure will be utilized to make this transition:

1. All personnel that are assigned a canister and 40mm adapter will need to return **BOTH** to their respective Battalion Chief. The Battalion Chief will ensure all issued equipment has been returned by their entire shift. **This needs to be completed upon the next shift that you work.**
2. Personnel will **NO** longer be issued a personal canister and adapter as stated in SOP 2.22 Personal Protective Equipment. This SOP will be modified to reflect the change.
3. During the time period of returning your two devices, the Battalion vehicle will be given a small quantity of these cartridges and adapters to be utilized.
4. The new canisters and adapters will be placed in a kit on each of the fire apparatus and medic units to be utilized by **ALL** personnel. When these kits have been distributed, this will become an item that will need to be inventoried each day during the daily apparatus checks. Inventory deficiencies should be reported to the on duty Battalion Officer and replacement requested from the office.
5. Personnel should review the attached product information for details on which chemicals the new canisters will protect against.

TECHNICAL DATASHEET

CBRN CAP-1 CANISTER

DESCRIPTION

Part Number045135
 Shelf Life8 years (from date of manufacture)
 Diameter4.33 inches (11 cm)
 Height4.11 inches (10.4 cm)
 Weight.....0.9 lbs (410 g)
 Connection40 mm NATO thread
 Body Material.....Black polyamide
 Breathing Resistance @ 85 lpm.....42 mmWC



NIOSH CBRN TESTING CONDITIONS AND RESULTS*

Challenge Agent	Test Concentration	Flow Rate ¹	Breakthrough Concentration	Required Breakthrough Time (min)	Tested Breakthrough Time (min) ²
Ammonia (AM)	2500 ppm	64 lpm	12.5 ppm	15	>25
Cyanogen Chloride (CK)	300 ppm	64 lpm	2.0 ppm	15	>60
Cyclohexane (OV)	2600 ppm	64 lpm	10.0 ppm	15	>40
Formaldehyde (FM)	500 ppm	64 lpm	1.0 ppm	15	>60
Hydrogen Cyanide (AC)	940 ppm	64 lpm	4.7 ppm (sum of HCN and C ₂ N ₂)	15	>60
Hydrogen Sulfide (HS)	1000 ppm	64 lpm	5.0 ppm	15	>60
Nitrogen Dioxide (ND)	200 ppm	64 lpm	1.0 ppm (NO ₂) (25ppm for NO)	15	>20
Phosgene (CG)	250 ppm	64 lpm	1.25 ppm	15	>60
Phosphine (PH)	300 ppm	64 lpm	0.3 ppm	15	>60
Sulphur Dioxide (SD)	1500 ppm	64 lpm	5.0 ppm	15	>25

* NIOSH only approves complete respirators. Please refer to the approval label that comes with your cartridge for the complete respirator configuration.

Note 1 - 64 lpm for service life at 25% RH and 80% RH with a NIOSH required minimum breakthrough time of 15 minutes. Also tested at 100 lpm for high flow service life at 50% RH with a NIOSH required minimum time to breakthrough of 5 minutes. For PAPR approval, test flow rate is 115 lpm divided by the number of canisters on the PAPR.

Note 2 - Unless otherwise stated the breakthrough time provided is for the worst-case test condition at 64 lpm. Tested breakthrough time is for the specific chemical cartridge when tested under controlled laboratory conditions. The times provided apply only to Scott Safety cartridges and canisters at the specified conditions. Breakthrough time under actual use conditions may differ based upon the encountered contaminant and environmental conditions.

The canister when tested as part of the NIOSH approved air purifying respirator system, including all components and accessories, resists the permeation and penetration of Distilled Sulfur Mustard (HD) and Sarin (GB) chemical agents when tested on an upper-torso manikin connected to a breathing machine operating at an air flow rate of 40 l/min, 36 respirations per minute, 1.1 liters tidal volume per the CBRN APR and PAPR standard.

In addition to protecting against the chemical warfare agents listed above, the CBRN CAP-1 Canister offers particulate protection that is over 99.97% efficient and meets the requirements of a P100 particulate filter in accordance with 42 CFR, Part 84. The particle filter removes aerosols and solid particulates which makes it effective for protection against a range of radiological and biological agents.

CBRN CAP-1 FILTER PROVIDES PROTECTION AGAINST

CBRN AGENTS

Blood Agents	Arsine (SA)	x
	Cyanogen Chloride (CK)	x
	Hydrogen Cyanide (AC)	x
Choking Agents	Chlorine (CL)	x
	Chloropicrin (PS)	x
	Diphenylchloroarsine (DA)	x
	Phosgene (CG)	x
Mustard/Blister Agents	Lewisite (L)	x
	Nitrogen Mustard (HN)	x
	Sulfur Mustard (HD)	x
Nerve Agents	Sarin (GB)	x
	Soman (GD)	x
	Tabun (GA)	x
	VX	x
Tear Gas	Pepper Spray (OC)	x
	Dibenzoxazepine (CR)	x
	o-chlorobenzylidene malononitrile (CS)	x
	Mace® (CN)	x

CBRN CAP-1 FILTER PROVIDES PROTECTION AGAINST

TOXIC INDUSTRIAL CHEMICALS*

Acid Gases (AG)	Chlorine (CL)	x
	Chlorine Dioxide (CD)	x
	Hydrogen Fluoride (HF)	x
	Hydrogen Sulfide (HS)	x
	Sulfur Dioxide (SD)	x
Base Gases	Allyl Amine	x
	Ammonia (AM)	x
	Dimethyl Hydrazine	x
	Methyl Hydrazine	x
Aldehydes	Methylamine (MA)	x
	Formaldehyde (FM)	x
Hydrides	Arsine (SA)	x
	Germane	x
	Phosphine (PH)	x
	Stibine	x
Nitrogen Oxides	Fuming Nitric Acid	x
	Nitric Acid	x
	Nitrogen Dioxide (ND)	x
	Nitrogen Tetraoxide	x
	Nitrogen Trioxide	x
Organic Vapors (OV)	with a boiling point > 65°C (149°F)	x
Particulates	P100	x

Service life available upon request.

***FILTER USAGE for INDUSTRIAL APPLICATIONS**

NOTE: The canister is not NIOSH approved for TIC's

Per NIOSH "Interim Guidance on using CBRN Canisters for activities other than response to terrorist events"- 9/15/05. Considerations include:

- Must be used in conjunction with a Respiratory Protection Program, and within the Maximum Use Concentration (MUC).
- Air purifying respirators are only intended for use in non-IDLH environments.
- Air purifying respirators do not protect in the event of oxygen deficiency. Do not use if the oxygen concentration in the atmosphere is likely to be less than 19.5%.
- A filter change schedule in accordance with OSHA requirements must be implemented, according to the respiratory protection program.

Air purifying respirators are for use only in environments which are not immediately dangerous to life or health (IDLH) where the oxygen levels are above 19.5%. Do not exceed maximum use concentrations established by regulatory standards. In the absence of a contaminant standard, refer to the NIOSH Respirator Decision Logic publications. Warning: Improper use of these respirators may result in personal injury or death. Improper use includes, but is not limited to, use without adequate training, disregard of the warnings and instructions and failure to inspect and maintain these respirators. These respirators are intended to be used in conjunction with an organized respiratory protection program which complies with the requirements of American National Standard for Respiratory Protection, Z88.2-1992, available from American National Standards Institute Inc., 11 West 42nd Street, New York, NY 10036 or the requirements of OSHA Safety and Health Standard 29 CFR 1910.134 and/or 29 CFR 1910.139 available from the U.S. Department of Labor, Occupational Safety and Health Administration or other pertinent nationally recognized standards, such as those promulgated by the U.S. Coast Guard or the Department of Defense or in Canada, CSA Z94.4.1993. These respirators are not intended for use in atmospheres which are, or may become, immediately dangerous to life or health (IDLH) or in atmospheres where the identity and/or concentration of the contaminant is unknown. Refer to the CBRN cautions and limitations in the use instructions.

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