

AMF12

CBRN FILTER CANISTER



The Avon AMF12 is a CBRN filter canister designed to meet the relevant criteria specified in the NATO Triptych for protection against all known chemical and biological warfare agents in aerosol, liquid and vapour form, and NIOSH 42 CFR84 for effectiveness in the removal of riot control agents in aerosol form.

The canister also provides protection against a range of toxic industrial chemicals, and exceeds the capacity requirements of A1B1E1 in European standard EN14387.

When combined with an appropriate chemical protective mask, the AMF12 filter canister protects the face, eyes and gastro-intestinal tract of the wearer against all chemical and biological agents in aerosol, liquid and vapour form including:

a. Nerve Agents

"G" Series
"V" Series
Any thickened form of agent

c. Blood Agents

Hydrogen Cyanide
Cyanogen Chloride
Chloropicrin

b. Blister Agents

Mustard
Lewisite
Any thickened form of agent

d. Riot Control Agents

CS
CN
OC (Pepper Spray)

Protection against certain Toxic Industrial Chemicals (TICs) is also provided, including organic vapours with a boiling point over 65°C, chlorine, hydrogen sulphide, sulphur dioxide, and low level ammonia protection.

The AMF12 is packed in a robust polypropylene container with a pull tab removable lid. The filter is protected from moisture ingress with a peel off foil laminate seal. Further protection is provided with the inlet and out hole plugs fitted onto the filter. This packing provides excellent protection during transportation and use.

EFFECTIVENESS

Against Chemical and Biological Agents

The canister fully meets the efficiency and adsorption capacity for CW agents as specified by NATO in A/C 225 (panel VII) D/103 (para IV.6, IV.7, IV.8, IV.9, IV.10 & IV.11).

The following data gives a good indication of its performance against the classical test agents.

Threat	Protection Time
Nerve Agent	>175 mins
Hydrogen Cyanide	>100 mins
Cyanogen Chloride	>100 mins
Chloropicrin	>250 mins

The filter canister has been tested for particulate aerosols in accordance with NATO A/C 225 (Panel VII) D/103 para IV.4, using a salt aerosol method. The penetration through the canister was found to be less than 1 in 10⁵ for the particulate filter, and typically as low as 1 in 10⁶ (the canister is designed to achieve not greater than 0.003% penetration of dioctylphthalate aerosol when challenged at 85 l/min airflow rate).

The performance of the canister is, of course, dependant upon the actual concentration encountered. However, the AMF12 will, in a typical CBRN scenario, give a multi attack capability. Protection against riot control agents exceeds US NIOSH 42 CFR84 requirements for CS and CN.

Against Toxic Industrial Materials

Summary of tests made in accordance with European gas test standard EN14387. Exceeds A1B1E1 easily. Performance against ammonia is limited.

Class	Test Chemical	EN 141 Break Time (Min)	AMF12 Break Time (Min)
A1	Carbon Tetrachloride	80	>120
		70	>115
A2	Cyclohexane	35	33
B1	Chlorine	20	>70
		40	>130
B2	Hydrogen Sulphide	20	15
		40	>80
E1	Sulphur Dioxide	20	>60
E2	Sulphur Dioxide	20	<10
K1	Ammonia	50	20
K2	Ammonia	40	<5



DESCRIPTION

Construction materials

- a) The canister body is made of Noryl, a polyphenyloxide co-polymer, which is a high quality engineering construction polymer. It provides a very robust product which is extremely durable against shock and impact in operational use. The canister body is black in colour.
- b) Gas absorption is by extruded pelletised activated charcoal impregnated with metallic salts of copper and chromium and triethylenediamine (TEDA) to react chemically with hydrogen cyanide and cyanogen chloride. Protection against physically absorbed gases such as the nerve agents ("G" and "V" series), mustard gases, phosgene and chloropicrin is fully effective (see overleaf).
- c) The high efficiency filter element is made of glass fibre/vinyon copolymer co-pleated with polypropylene net for structural strength.
- d) The AMF12 is entirely non-ferrous and non-magnetic.
- e) The canister pack is a polypropylene container with a sealed foil laminate lid.

Specification

Dimensions: 115 mm diameter x 61mm height from thread shoulder
 Weight: 270 g
 Thread: 40 mm to NATO STANAG 4155 and EN148-1

PACKAGING

Each canister is packed in a sealed polypropylene container. The container is labelled with.

- Product name and NSN
- Avon part number
- Expiry date
- Lot number
- Manufacturer

18 canisters are packed in outer carton.

PERFORMANCE

Breathing resistance

95 Pa @ 30 l/min airflow
 170 Pa @ 50 l/min airflow
 300 Pa @ 80 l/min airflow

Environmental

The materials used and the method of construction of the filter canister has been designed for operation and storage in accordance with NATO Document AC 225 (panel VII)/D103. The filter canister retains its operational effectiveness and efficiency with no degradation to its performance under the following environmental conditions:

- a) **Temperature -15°C to 55°C**
 Tested in a wide range of environmental conditions by military forces. The filters have been exposed to high ambient temperatures as part of a long running materials evaluation programme, without deleterious effects.
- b) **Humidity range - 0% to 95% RH**
 The filter has been tested in high humidity environments, both in the laboratory and on human subjects under operational conditions, and has found to be effective.
- c) **Rain**
 The filter will retain its effectiveness in conditions of heavy rainfall. It is not prone to water ingress.
- d) **Salt Breeze**
 The filter will suffer no deterioration due to exposure to salt breezes for 24 hours.
- e) **Sand and Dust**
 The filter will suffer no deterioration when exposed to 24 hours of wind driven sand and dust conditions.

Shelf life

The predicted shelf life of the filter canister (sealed and packaged) is 10 years.

WARNINGS

- This device does not provide oxygen and must not be used in an oxygen deficient atmosphere or confined space.
- Must not be used for fire fighting or for protection against airborne products of combustion.
- Should only be used as part of a managed respirator program.
- Customer must verify that the filter is suitable for the intended application.
- Respirator filters are not suitable for all gases/vapors. Customer should verify that the filter is suitable for gases/vapors likely to be encountered. Consult Avon if unsure.
- Once exposed to a suspected contaminant, the filter will usually require replacement, and must be disposed of as contaminated waste. Re-use of exposed filters is only permitted in certain controlled circumstances and as part of a managed program, consult Avon if unsure.

