The Avon GPCF50 Filter is an NBC filter canister designed to meet the relevant criteria specified in the NATO Triptych for protection against chemical and biological warfare agents in aerosol, liquid, and vapor form, and NIOSH 42 CFR84 for effectiveness in the removal of riot control agents in aerosol form.

The Avon GPCF50 Filter has a unique conformal shape providing a low profile close fit with the mask. When combined with an appropriate chemical protective mask, the GPCF50 filter canister protects the face, eyes, and gastrointestinal tract of the wearer against chemical and biological agents in aerosol, liquid, and vapor form including:

- **a. Nerve Agents**
  - "G" Series
  - "V" Series
  - Any thickened form of agent

- **b. Blister Agents**
  - Mustard
  - Lewisite
  - Any thickened form of agent

- **c. Blood Agents**
  - Hydrogen Cyanide
  - Cyanogen Chloride

- **d. Riot Control Agents**
  - CS
  - CN
  - OC (Pepper Spray)
  - Chloropicrin

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

**DESCRIPTION**

**Construction materials**

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 color.

Gas adsorption is by activated charcoal granules impregnated with metallic salts of copper, zinc molybdenum and silver to react chemically with hydrogen cyanide and cyanogen chloride.

**EFFECTIVENESS**

Against Chemical and Biological Agents

The canister will meet the efficiency and adsorption capacity for CW agents as specified by NATO in A/C 225 (panel VII) D/103 (para IV.6-11).

While the actual performance data achieved is proprietary, the following data gives a good indication of its performance against the classical test agents.

<table>
<thead>
<tr>
<th>Threat</th>
<th>Protection Time</th>
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<tbody>
<tr>
<td>Nerve Agent</td>
<td>&gt;150 mins</td>
</tr>
<tr>
<td>Hydrogen Cyanide</td>
<td>&gt;15 mins</td>
</tr>
<tr>
<td>Cyanogen Chloride</td>
<td>&gt;15 mins</td>
</tr>
</tbody>
</table>

The filter canister protection against particulate aerosols in accordance with NATO A/C 225 (Panel VII) D/103 para IV.4, using a salt aerosol method will 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, dependent upon the actual concentration encountered. However, the GPCF50 will, in a typical NBC scenario, give a multi attack capability. Protection against riot control agents exceeds US NIOSH 42 CFR84 requirements for CS and CN.

**NOTE:** This canister is not a CBRN or TICs/TIMs filter canister. The GPCF50 Filter is not NIOSH approved.
**SPECIFICATION**

<table>
<thead>
<tr>
<th>Dimensions</th>
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<tbody>
<tr>
<td>Diameter</td>
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<tr>
<td>Weight</td>
</tr>
<tr>
<td>Thread</td>
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<tr>
<td>Color</td>
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</tbody>
</table>

**PACKAGING**

Each canister is packed to MIL-B131H Type 1 Class 1 in a foil bag.

**ADDITIONAL OPERATIONAL CONSIDERATIONS**

The external surface of the GPCF50 is easily decontaminated. The filter canister can be changed under all operational conditions in 9 seconds.

**PERFORMANCE**

Breathing resistance

45mm of water @ 85 l/min

**ENVIRONMENTAL**

The materials used and the method of construction of the filter canister were 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:

**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 program, without harmful effects.

**Humidity range** – 0% to 95% RH

The filter has been tested in high humidity environments and has found to be effective both in the laboratory and on human subjects under operational conditions.

**Rain**

The filter will retain its effectiveness in heavy rainfall conditions and it is not prone to water ingress.

**Salt Breeze**

The filter will not deteriorate with exposure to salt breezes for 24 hours.

**Sand and Dust**

The filter will not deteriorate 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 5 years.

**NOTE:** Although the thread form is compatible with STANAG 4155 and EN148-1 the sunken thread within the conformal filter may result in the filter not sealing to some types of PPE. It is essential that the GPCF50 filter is used only with Avon FM53, C50, FM12 & S10 masks.

THE GPCF50 FILTER FALLS WITHIN THE DEFINITION OF SIGNIFICANT MILITARY EQUIPMENT IN THE UNITED STATES MUNITIONS LIST, INTERNATIONAL TRAFFIC IN ARMS REGULATIONS AND MAY ONLY BE SUPPLIED OUTSIDE OF THE UNITED STATES OF AMERICA TO CUSTOMERS WHO ARE LICENSED BY THE US DEPARTMENT OF STATE, DIRECTORATE OF DEFENSE TRADE CONTROLS.