



Flexzorb™



Defence

Flexzorb™ Activated Carbon Cloth for the Defence Sector

Flexzorb™. The flexible, lightweight protective textile.

Flexzorb™ is widely used by many of the world's leading defence vendors, making us the leading provider of activated carbon cloth for defence applications.

Lightweight and breathable, Flexzorb is used in a range of defence applications, including:

- **Personal protective equipment (PPE)**, as a lightweight, protective layer against CBRN agents
- **CBRN filtration media**
- **Decontamination wipes.**

Consisting purely of activated carbon, Flexzorb is lighter and adsorbs more quickly and effectively than other, carbon-loaded materials, which contain less activated carbon.

Customised to your needs

Flexzorb is available in woven and knitted formats, which have different attributes appropriate to specific applications:



- **Flexzorb knitted cloth** is a stretchable fabric and well suited to applications demanding high freedom of movement.



- **Flexzorb woven cloth** offers higher air permeability, especially suitable for warmer climates.



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The Flexzorb™ story

Flexzorb™ has its origins in the first activated carbon cloth (ACC), developed in the 1970s. It was initially used - and still is to this day - as a protective layer in military clothing and masks against chemical, biological, radioactive and nuclear (CBRN) agents.

Today, Flexzorb is the world's leading superior 100% activated carbon cloth, used globally in a wide range of applications by defence, medical and industrial sectors. These range from antimicrobial, anti-odour wound dressings to purification filters, among many others.

Flexzorb can also be:

- impregnated with various chemistries for added sensitivity to adsorbing inorganic molecules
- treated to repel liquid agent, water and oil, and to prevent sweat affecting performance
- laminated to custom backing textiles for specific applications
- produced in pre-cut shapes and different widths.

Flexzorb acts as an extremely effective high-purity filter, separation method, an antimicrobial, or a protective layer. Key to its very high adsorption* capacity and rapid adsorption speed are:

- **Electrostatic forces** within Flexzorb. These adsorb* large volumes of molecules from various gases, liquids and other environments including clinical wounds.
- **A highly microporous structure.** This means that Flexzorb has a very large surface area. To put this in perspective, just 1g of Flexzorb has a surface area of around half the size of a soccer pitch.

*Adsorption is the process of attracting molecules on to a surface, rather than into something. It is analogous to iron filings being attracted on to a magnet.



Flexzorb™ Defence Applications

CBRN protection. Frontline effectiveness with comfort.

Deployed by defence and security forces worldwide, Flexzorb provides a lightweight, protective layer against CBRN agents in PPE, including combat suits, first responder suits and escape masks. This is how Flexzorb works:

- **CBRN agents trapped** by electrostatic forces that draw and trap CBRN gas, vapour and liquid molecules on its surface
- **Air permeability** enhances effectiveness and comfort
- **Superior comfort** thanks to low burden, lightweight Flexzorb 100% activated carbon cloth layer which keeps overall garment weight low.

We produce and supply Flexzorb in a variety of sizes and specifications. Flexzorb can be treated for added protection against liquid agent and to prevent human sweat interfering with its performance. Also, laminated composites are available to meet specific application needs.

Other CBRN defence applications

As well as PPE, Flexzorb can be used in other CBRN defence applications:

- **CBRN filtration media**, offering protection against CBRN agents at higher airflow rates than other media
- **CBRN decontamination wipes**, mitts and pads, for scratch-free cleaning – ideal for glass and sensitive equipment. They also prevent spreading or off-gassing of harmful agents, for easier disposal.

Other applications

Further uses of Flexzorb in military theatres of operation include:

- **Antimicrobial wound dressings for military use**, which are easy to apply, conformable to the body's contours, control odour and promote accelerated healing
- **Missile decoy media**, using the thermal properties of activated carbon
- **Phosphine gas adsorption media**, for capturing fugitive emissions from munitions.

About Chemviron Cloth Division

Flexzorb™ is produced in the UK by Chemviron Cloth Division, the world's leading manufacturer of 100% activated carbon cloth. Chemviron is the European operation of Calgon Carbon, the world leader in the production and development of activated carbon in granular and cloth forms. At our Innovation Hub, we continually research and develop new attributes of Flexzorb for ever-widening applications.

Contact us

To find out more about Flexzorb or to discuss your specific defence applications, please contact us and we will be happy to help.

Tel: +44 (0) 191 584 6962 Fax: +44 (0) 191 584 6793
Email: flexzorb@calgoncarbon.com

Chemviron Cloth Division, Rainton Bridge Industrial Estate,
Houghton-le-Spring, Tyne & Wear DH4 5PP, UK

Chemviron is the European operation of  



www.chemviron.eu
www.flexzorb.com