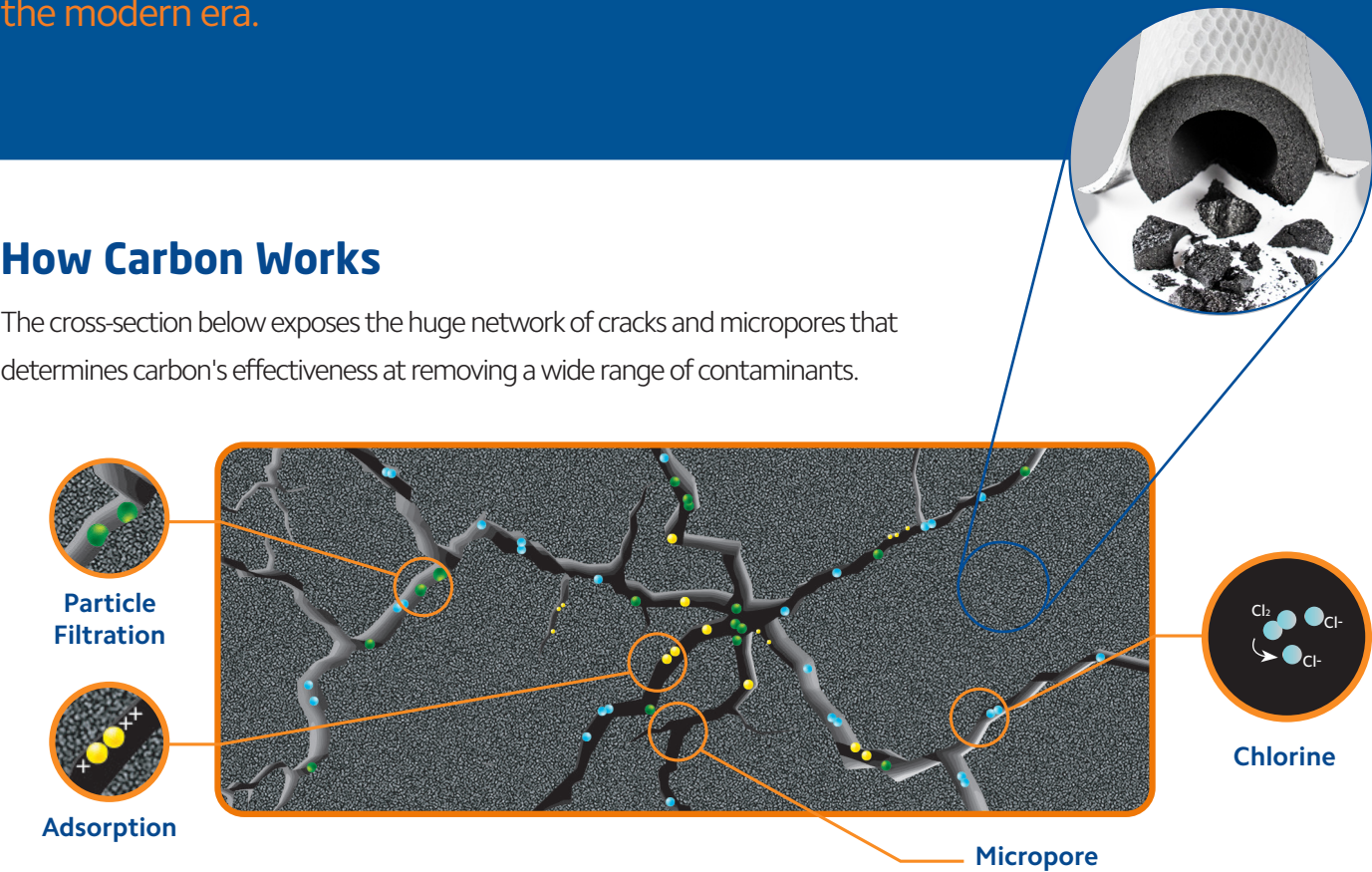


Carbon Technology

Utilised for several hundred years, carbon is considered one of the oldest means of water purification. Although impossible to trace the exact date and time, there is evidence of its usage and importance throughout history, from the ancient world to the modern era.

How Carbon Works

The cross-section below exposes the huge network of cracks and micropores that determines carbon's effectiveness at removing a wide range of contaminants.



Particle Filtration

Sediment and Suspended Solids

Every carbon block cartridge has a given micron rating to indicate the physical size of suspended particulate that can be removed by the cartridge. To prevent premature sediment blockage before the chlorine capacity of the carbon has been exhausted, pre-filtration, such as the SPECTRUM SSP or PSP, is recommended to prolong the life of the cartridge.

Adsorption

Organics and Heavy Metals

Carbon is a naturally adsorptive media, removing dissolved contaminants from a solution. When heated to 870°C, during the activation process, millions of tiny micropores are created throughout the structure of the cartridge, attracting large organic molecules and heavy metals to the surface.

Chemical Reaction

Chlorine and Chloramine

Through chemical interactions with the activated carbon, reactive chlorine molecules are converted to less reactive chloride ions. Chloramine can also be removed through this process although the reaction occurs at a much slower rate. Speciality cartridges such as the SPECTRUM PCB have been specifically designed to effectively target chloramine.

Carbon Flow Rate

The longer water comes into contact with carbon, generally the more effective the treatment process will be, whether removing organics, heavy metals, chlorine or chloramine. Even a small increase over the recommended flow rate can cause dramatic decreases in carbon treatment's effectiveness. Therefore it is imperative to size a carbon treatment system properly, ensuring that the flow rate allows enough contact time to remove the undesired contaminants. The recommended flow rate for each cartridge is shown on the product page (as illustrated, right).

@ Flow Rate (LPM)			
Specifications			
Max. Operating Temp. 52°C			
Max. Operating Pressure 2.5 bar			
SCB Properties			
Flow Rate (LPM)	Chlorine Reduction (L) @ 0.2ppm	Pressure Drop (Bar) @	Flow Rate (LPM)
3.8	113,750	0.3	3.8
7.6	227,500	0.3	7.6
7.6	356,850	0.4	7.6
15.1	713,700	0.4	15.1

rine capacity using 2mg/l free available chlorine at 0.5mg/l breakthrough

Carbon's Effectiveness at Removing...

Excellent

Chloramine	Odours
Chlorine	Oil-dissolved
Dyes	PCBs
Glycols	Pesticides
Herbicides	Sodium Hypochlorite
Hydrogen Peroxide	Taste
Insecticides	THMs
Iodine	

Good

Organic Acids
Organic Salts
Potassium
Permanganate
Solvents
Sulphonated Oils
Tannins

Fair

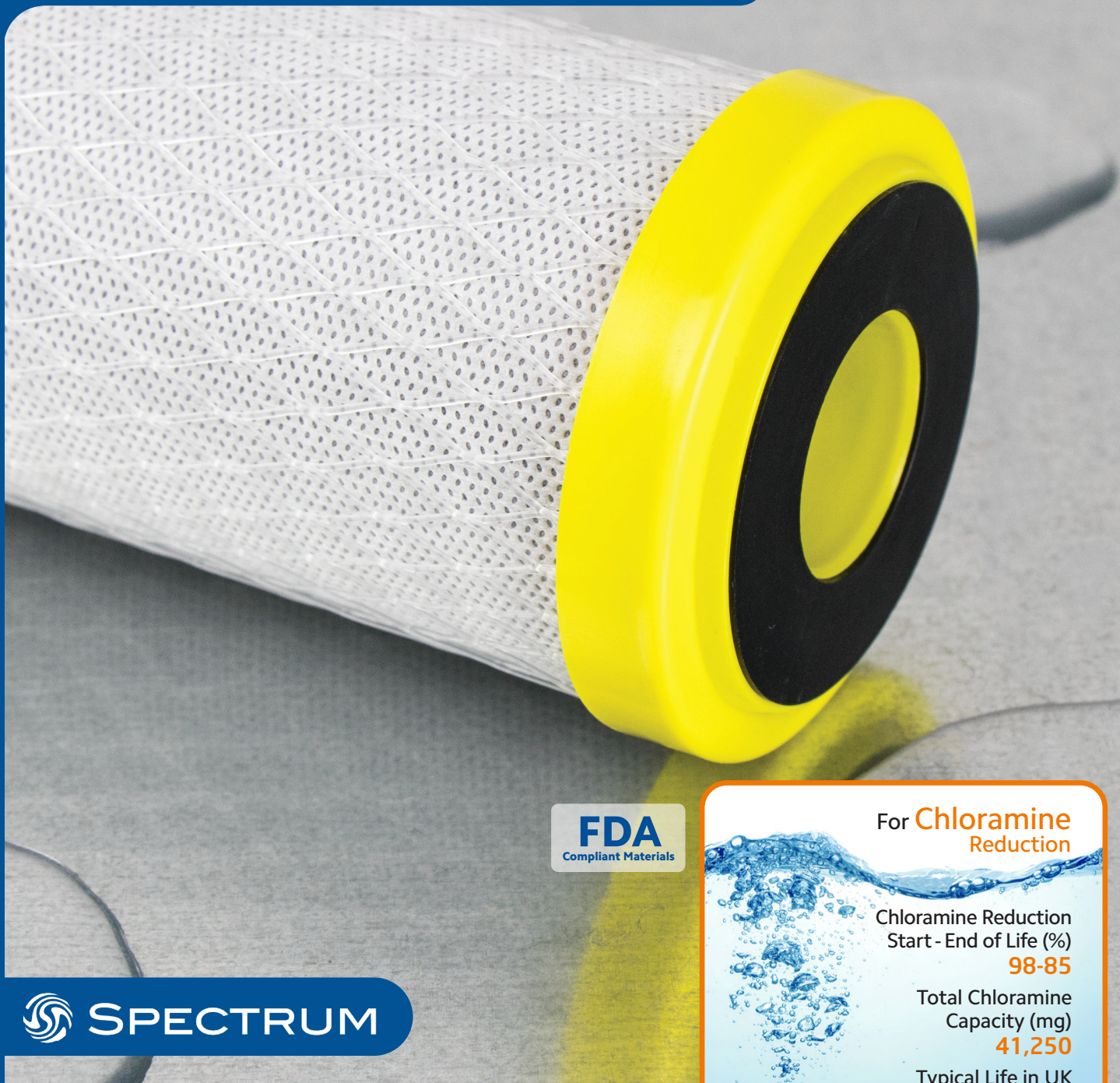
Acetic Acid
Detergents
Heavy Metals
Hydrogen Sulfide
Plating Wastes
Soap

Carbon Cartridge Construction

From raw material, through to activation and end product.



Ultimate Chloramine Reduction



FDA
Compliant Materials

For **Chloramine Reduction**

Chloramine Reduction
Start - End of Life (%)
98-85

Total Chloramine
Capacity (mg)
41,250

Typical Life in UK
Water (L)*
206,250

Performance based on 10" cartridge. * Life in UK water based on free chloramine concentration of 0.2mg/l.

870 Carbon Block - Premier 1 micron

The SPECTRUM PCB is specifically formulated for effective chloramine control and is the only cartridge to offer this feature within the 870 range. Having been manufactured within a five-stage process, this exceptional catalytic activated carbon cartridge provides up to 10 times the capacity of the SCB. Essential for use in public water supplies where chloramine has been added as the disinfecting agent of choice, the PCB will typically be found within applications, including aquatics and renal dialysis. Rated at one micron pre-filtration from the SPECTRUM TruDepth range, such as the PSP at five micron, is recommended to maximise service life and prevent premature blocking.

Key Features

- Ultra porous, modified powder activated carbon, exceptional at targeting chloramine
- Chlorine capacity up to 10x higher than the SCB
- Reduces the risk of haemolytic anaemia
- 1µm filtration level to remove fine sediment (5µm pre-filtration, i.e. SPECTRUM PSP recommended to extend life)
- Long service life for chlorine reduction

Specification

Max. Operating Temperature
38°C

Carbon Type
Catalytic Activated Coconut Carbon

End-cap / Gasket
Polypropylene / Buna-N

Max. Operating Pressure Differential
2.5 bar

Netting Material
Polyethylene

Wrap
Polypropylene

PCB Properties					
Length (")	Chloramine Reduction (L) *	Chlorine Reduction (L) @ 2mg/l **	Chlorine Reduction (L) @ 0.2mg/l ***	Pressure Drop (Bar) @	Flow Rate (LPM)
9¾	15,000	190,000	1,662,500	0.3	1.9
20	30,000	380,000	3,325,000	0.3	3.8
30	45,000	570,000	4,987,500	0.3	7.6
40	60,000	760,000	6,650,000	0.3	11.4
9¾LD	50,000	950,000	8,312,500	0.4	7.6
20LD	100,000	1,900,000	16,625,000	0.4	15.2

*Chloramine capacity using 3mg/l free available chloramine at 0.5mg/l breakthrough

**Chlorine capacity using 2mg/l free available chlorine at 0.5mg/l breakthrough

***Calculated chlorine capacity using 0.2mg/l free available chlorine at 0.05mg/l breakthrough

Typical Applications

- Hydroponics
- Renal dialysis
- Public drinking water supply
- Aquatics

Configurations

Micron (µm)

1

Length (")

9¾

20

30

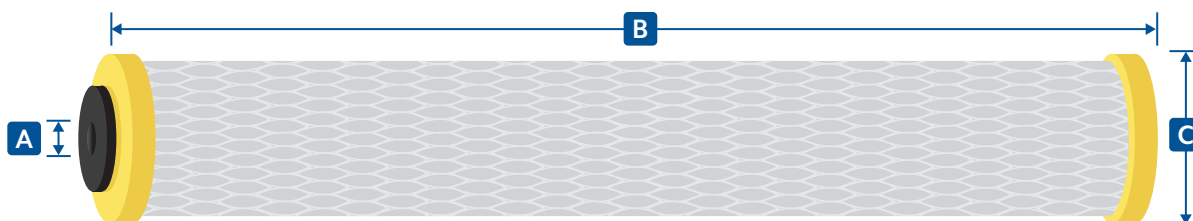
40

Diameter

Regular

Large = LD

Dimensions & Packaging



Length (")	Dimensions (mm)		
	A	B	C
9¾	30	248	66
20	30	508	66
30	30	762	66
40	30	1016	66
9¾LD	27	248	115
20LD	27	508	115

Part Number

Code	Micron	Length
PCB	1	9¾, 20, 30, 40
		9¾LD, 20LD

e.g. PCB-1-30