

# S500, S500C

## Carbon Filtration Units

Magnaflux carbon filtration units are designed to remove penetrants from post-rinsewater. Once clean, the rinsewater can be pumped to drain/waste (subject to local authority requirements) or recycled to another process.

The S500 unit comprises a pressure vessel fitted with inlet and outlet control valves. The pump, operated by float switches, forces contaminated water to the top of the vessel, which then passes down through the activated carbon filter bed, where the contaminants are removed.

The S500 can also be used in conjunction with a coalescing filter (S500C) to remove post-emulsifiable penetrant from pre-rinsewater.



### FEATURES

- Low-cost and economical to run
- Self-contained and portable
- Easy to use

### USER RECOMMENDATIONS

| Accessories |  |
|-------------|--|
|             | Activated carbon granules, 25 Kg bag (079C002) |
|             | Replacement coalescer cartridge (015F004)      |

### PART NUMBERS

S500 009Z001  
S500C 009Z002

### PRODUCT PROPERTIES

|                                       |  |
|---------------------------------------|--|
| <b>Floor space</b>                    | 1.2 x 1.0 m  |
| <b>Height</b>                         | 2.6 m  |
| <b>Continuous service flow rate</b>   | 500 litres/hour                                      |
| <b>Carbon volume</b>                  | 0.25 m <sup>3</sup> (125 Kg)                         |
| <b>Retention time</b>                 | 20 minutes   |
| <b>Contaminate absorption</b>         | Approx. 1 litre per kilogram of carbon               |
| <b>Supplied with activated carbon</b> | 5 Bags / 125 Kg                                      |
| <b>Backwash</b>                       | Manually operated                                    |
| <b>Backwash flow rate</b>             | 480 litres/hour                                      |
| <b>Backwash time</b>                  | 5 minutes  |
| <b>Backwash volume</b>                | 40 litres  |
| <b>Connections</b>                    | 1¼ inch (32 mm) I/D hose                             |
| <b>Electrical supply</b>              | 220/240 volts, single phase, 50 Hz. Fused at 6 amps. |

## S500, S500C

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### What is activated carbon?

Activated carbon is a crude form of graphite, the substance used for pencil leads. It differs from graphite by having a random imperfect structure which is highly porous over a broad range of pore sizes, from visible cracks and crevices down to pores of molecular dimensions. This graphite structure gives the activated carbon its very large surface area, which allows the carbon to adsorb a wide range of chemical compounds.

### What is activated carbon made from?

Activated carbon can be made from many substances containing a high carbon content, such as coal, wood and coconut shells. The raw material used has a big influence on the characteristics and performance of the activated carbon.

### What makes it activated?

Activation refers to the development of the adsorption properties of the carbon. Raw materials such as coal and charcoal have some adsorption capacity, but this is greatly enhanced by the activation process.

### What is adsorption?

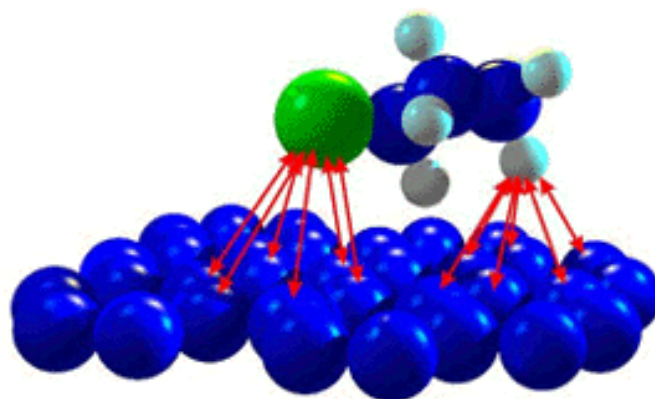
Adsorption is the process by which liquid or gaseous molecules are concentrated on a solid surface, in this case activated carbon. This is different from absorption where molecules are taken up by a solid, liquid or gas.

Activated carbon has the strongest physical adsorption forces and the highest volume of adsorbing porosity of any material known to humankind.

### What compounds are adsorbed?

All compounds are absorbable to some extent. In practice, activated carbon is used for the adsorption of mainly organic compounds, along with some larger molecular weight inorganic compounds such as iodine and mercury. In general, the absorbability of a compound increases with:

- Increasing molecular weight.
- A higher number of functional groups, such as double bonds or halogen compounds.
- Increasing polarisability of the molecule. This is related to the electron clouds associated with the molecule.



London dispersion forces