

How Charcoal Is Created

Medicinal activated charcoal is also used in emergency medicine to treat certain types of poisoning. [Activated charcoal](#) is designed for medicinal use, and is not the same as the charcoal that is used in products that remove pet odors and in fish tank filters. Activated charcoal works to treat poisoning because it binds with some poisonous agents and helps them pass through the body without being absorbed.

1. Activated charcoal is carbon-based charcoal that has been impregnated with oxygen. Introducing oxygen into the mixture creates small pores in the otherwise solid piece of charcoal. The atoms of the charcoal are pushed apart and the spaces between them are able to hold immense amounts of liquid or other particulates. The massive increase in surface area creates the perfect opportunity to create absorbent surfaces. Odor-causing atoms and substances from gases that move through the activated charcoal get trapped in the millions of tiny pockets.

How It Works

2. Activated charcoal is able to trap these odor-causing chemicals because it actually absorbs them into its matrix. The odor-causing molecules attach themselves to the huge surface area of the activated charcoal and they are unable to escape. Activated charcoal can trap and hold most organic impurities, making it ideal for use in filters. Activated charcoal filters only work as long as there is available surface area that can attract and hold impurities, and once these sites are all occupied, the filter must be replaced. Activated charcoal filters can be effectively washed, as the liquid can wash away impurities within the porous structure and render it usable. Only certain types of activated carbon filters can be washed effectively, however, and it's important to know the distinction before attempting the washing. A single gram of activated charcoal has a surface area in excess of 1,000 square meters, meaning that the activated carbon filter can be used for a long time at moderate absorption rates. The pore size and the way the pores are distributed across the [activated carbon](#) itself can greatly affect the amount and type of filtration that can be achieved.

Medicinal Uses

3. The flow rate of material through the filter also has a significant effect on the amount of impurities absorbed by the filter. The slower that material moves through the filter, the more effectively it will be able to absorb the impurities passing through it. Of course, activated charcoal does have medical uses as well, for much the same reason. It is used to absorb poisonous substances from the body, and it will absorb all organic and many inorganic poisons that are introduced into the body. The activated carbon itself will have a significant effect on any medications in the patient's system, as it can easily absorb the chemicals in the medication itself. For that reason, it's important to separate the intake of medication and [activated carbon](#) by several hours. Activated carbon can catch and hold more than 100 times its own weight in captured materials.