



Reactive Services Frequently Asked Questions:

How is spent carbon reactivated?

Spent carbon is reactivated in the same manner that it is manufactured. In multiple hearth furnaces or rotary kilns, the spent carbon is heated to temperatures above 1,700°F utilizing steam as a selective oxidant. Adsorbed organics are either volatilized or pyrolysed to a carbon char. The high- temperature steam reaction serves to develop the pore volume of the activated carbon and restore its adsorptive capacity.

How are the emissions from the reactivation process treated?

Reactivation furnaces are maintained under negative pressure ensuring there will be no leaks to the outside environment. The furnace off-gas is passed through an afterburner to destroy any unburned organics that remain. The emission stream is then passed through a chemical scrubber to remove any acidic gases that may have formed. A final treatment is through baghouse filters that remove any particulate matter that remains in the stream.

Will reactivated carbon work for my application?

In most applications, reactivated carbon will perform nearly as well as virgin carbon. Calgon Carbon can provide an assessment of the standard reactivated carbon products against virgin carbon for most applications using computer modeling programs. Details can be submitted by clicking [here](#) to complete an Application Questionnaire. If required, laboratory evaluation by accelerated column testing or pilot scale trials can be conducted.

What is the advantage of reactivating spent carbon?

The reactivation process recycles the spent carbon for reuse. Adsorbed organics are destroyed and the activated carbon's adsorptive capacity is restored. The cost and long-term liability of disposal are avoided. Reactivated carbon also represents a cost savings over virgin carbons. The adsorptive capacity of the spent carbon can be restored at a lower cost than the manufacture of activated carbon from raw material.

Is reactivated carbon suitable for use in drinking water?

Spent carbons from drinking water and other food grade applications can be reactivated for reuse in their prior applications if these carbons are segregated for custom reactivation at a food grade facility. Reactivated carbon from industrial applications or reactivated at a non-food grade operation is classified as non-food grade as a general practice.

If spent carbon is returned, can it be replaced with virgin carbon?

Yes, Calgon Carbon will reactivate the spent carbon and supply this later to a non-food grade application. The spent carbon can be replaced with a variety of virgin carbons that would suit the needs of the application.

Can hazardous spent carbons be returned for reactivation?

Yes, in most cases. The Catlettsburg, KY and Pittsburgh, PA plants are fully permitted to accept RCRA hazardous wastes. There are a few RCRA codes such as some characteristic hazards that are unacceptable by permit. Some compounds such as PCB's are also not approved for return.

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