

ACTIVATED CARBON TO REMOVE POLLUTANTS FROM EDIBLE OILS

Benefits of our NORIT® activated carbon products

- ◆ Provides proper PAH removal. Each lot is tested by our unique PAH test methods to ensure PAH removal consistency
- ◆ Dedicated application support team to help customers select the best carbon and optimize their purification method and throughput
- ◆ Supply chain & food safety compliance with a current HACCP program
- ◆ Deliver fast filtration rates given narrow particle size distributions, thereby increasing manufacturing throughput and productivity

Challenge and solution

Many edible oils which are used as food additives are processed from crude vegetable oils and marine oils. These crude oils often contain elevated levels of PAHs and other persistent organic pollutants, including PCBs, dioxin, furan, pesticides and herbicides. These contaminants must be removed to make processed edible oils fit for human consumption given the serious health effects posed by these contaminants. Edible oils are derived from many sources, each with varying degrees of contaminants (Table 1).

Table 1 - Relative contaminant concentrations by edible oil source

Oil type	Contaminant level of PAHs	Contaminant PCBs and dioxins
Coconut	●	○
Rice bran	○	○
Fish	◐	●
Palm oil	◑	○
Palm kernel	◑	○
Palm oil distillate	○	●
Olive pomace	●	○
Sun flower	◐	○
Rapeseed	○	○

● High ◑ Medium ◐ Low ○ None

Another important goal in this application is the removal of unwanted colors from oils. For biological oils derived from fish and plants, activated carbon is the preferred technology for decolorization as bleaching earths are no longer permitted for this purpose. Powdered Activated Carbon (PAC) is highly effective for the removal of PAHs and unwanted colors in the edible oil refining industry.



Product selection guide

As global regulations converge around the European Union regulations, it is important to select a PAC grade that achieves effective removal of PCBs and PAHs to comply with these requirements. We have designed a number of high purity PAC grades with the pore size distributions to meet these stringent goals (Table 2).

Table 2 – NORIT® activated carbon grades for edible oil purification

Product	Effectiveness at removing target impurities			PAC characteristics
	PAHs	PCBs, dioxins, furans	Colors	Filtration
NORIT SA ULTRA PAH activated carbon	●	●	●	●
NORIT SA 4 PAH HF activated carbon	◐	◐	◐	●
NORIT SA 4 PAH activated carbon	◐	◐	◐	◐
NORIT SA 5 PAH HF activated carbon	◐	◐	◐	◐

● Best ◐ Better ◑ Good

Benefits of choosing our NORIT activated carbon grades for purification of edible oils include:

- ◆ Effective removal of PAHs, PCBs and dioxins enabled by our specifically designed pore distribution, ultra-high activity carbons
- ◆ Enhanced safety by avoiding potential formation of hazardous 3-MCPD due to strict specifications for pH control and chloride-free manufacturing process
- ◆ Improved production rates and reduced costs due to enhanced filtration properties
- ◆ Enhanced control of edible oil refining processes by selecting from among four grades to meet specific treatment objectives

We manufacture activated carbon in seven plants and reactivate carbon in four plants. Our sales, technical service and customer service teams are prepared to serve customers around the world.

So whether you have one operation or many facilities around the globe, we've got you covered.

Contact us at cabotcorp.com/activatedcarboncontact



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