media bros

What's In Your Extract?

The Importance of Quality Carbon in Extraction

Activated carbon, also known as activated charcoal, is one of the most **powerful and efficient filter media** used to remove the color from crude cannabis extracts. Dark brown and green colors can be **remediated with the right type** of activated charcoal and optimized standard operating procedures (SOPs).

While the right filter media can work wonders for extracts of any quality, in certain cases it can actually work against the quality of the extract and negatively affect throughput in an operation. **Choosing a quality carbon material** can offset the most common filtration challenges to achieve a near-perfect carbon scrub.

Contents

What is **Carbon Scrubbing?**

Carbon scrubbing refers to the **color remediation process** in which an activated charcoal filter is used to remove undesirables from crude extract. Cannabis processors may use an array of filter media such as diatomaceous earth, silica gel, and activated bentonite clay to enhance the overall filtration.

The Process

WATCH VIDEO

Step 1

Crude extract is loaded into color remediation column (CRC)

Step 2

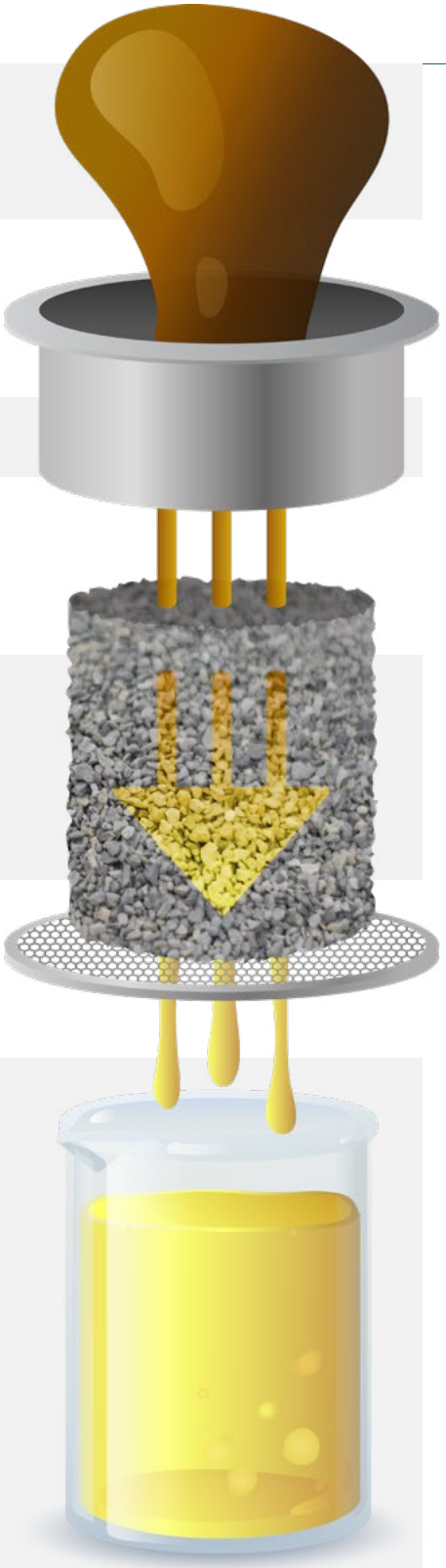
Crude extract passes through filter media stack

WHAT IS REMOVED?

- Plant pigments
- Waxes & lipids
- Chlorophyll

Step 3

Crude extract passes through filter screen plate



The Result

In the end, cannabis processors end up with extracts with higher clarity, more desirable color, and better taste.

Carbon scrubbing allows processors to pursue the best possible extraction quality with the least amount of undesirable compounds. **Choosing the right type of activated carbon is essential to the final extract quality.**

See our Lab Analysis test results on page 10

Activated Carbon Quality ***Matters***

In any extraction workflow, carbon is an indispensable tool for the decolorization of crude oils. In a worst-case scenario, however, **subpar filter media can wreak havoc** on the potency, flavor, and yield of filtered extracts, not to mention the safety of the operator.

The Cost of Crappy Carbon

Lackluster filter media, poor workflow, and operator error can result in thousands (or millions!) of dollars worth of wasted cannabis extract.

Poor-quality carbon and improper SOPs can present demoralizing challenges during extraction. One of the most gut-wrenching drawbacks of using subpar filter media is the isomerization, or destruction, of desirable cannabinoids such as THC and CBD.

Manufacturers can avoid producing low-potency extract by **investing in quality carbon that will not negatively affect the yield or potency.**

Activated Carbon as an **Industrial Tool**

Carbon has proved itself an impressive adsorbent material across a broad range of industries. It is used in everything from municipal water treatment to precious metal recovery, and so much more. However, all activated carbon is not created equal.

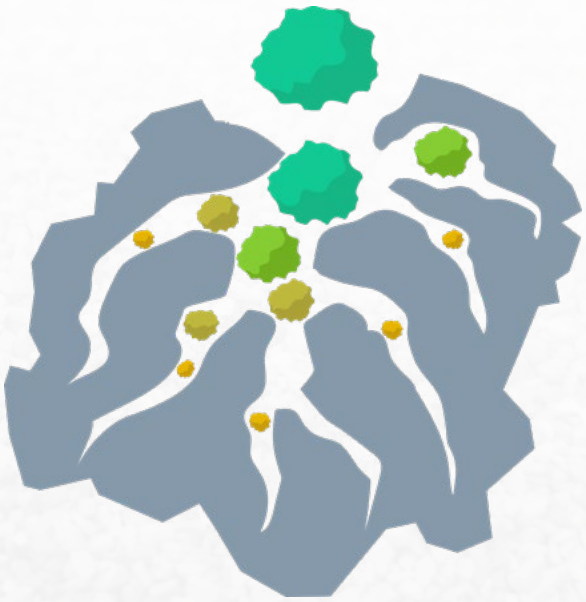
Carbon Types

One of the defining factors of carbon media can be its source. Activated charcoal can come from a variety of high-carbon sources including:

Wood | Coal | Coconut | Peat | Bamboo

Carbon Adsorption

When activated through a chemical or physical manufacturing process, the activated form becomes highly porous and has a large surface area. In its many forms, carbon has a broad range of pore sizes including big cracks and crevices down to micropores not visible to the naked eye.



Activated Carbon Matrix

- **Large mesopore** (2.5+nm)
- **Small mesopore** (2 - 2.5+nm)
- **Supermicropore** (0.7 - 2nm)
- **Ultramicropore** (<0.7nm)

The effectiveness of the filter media at filtering the undesirable compounds depends largely on the source of the material, the manufacturing process used, ease of use, and carbon content. Of course, special production techniques can produce carbons that improve the adsorption capabilities of the filter media, despite the normal pore structure of the raw material.

Types of **Activated Carbon**

Extraction companies that require a high-efficacy filtering product can choose from **three main types of this filter media**:

Granular

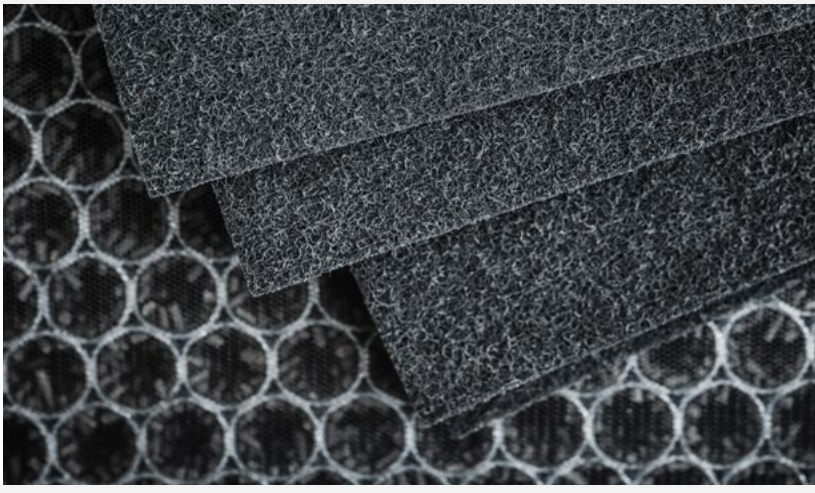
In its granular form, this filter media comes in irregular-shaped particles ranging in size from 0.2 to 5 mm.

Powdered

This material can be derived from a granular version and comes as a dry and pulverized powder. In this form, its size is less than 0.18 mm.

Sheets

Activated carbon sheets blend a powdered form of this filter media (and sometimes others such as diatomaceous earth) and cellulose fibers to create a filter sheet.



Advantages of **High-Grade** Carbon

Using high-grade filter media is a key component of creating consistent and pure extraction products. Not only does this contribute to competitive product potency, but also makes it **safe and easy for operators.**

No degradation of cannabinoids

In some cases, low-grade filter media can degrade cannabinoids such as CBD and THC. Essentially, the oil's overall potency can be reduced. Filtration should never come at the cost of reduced cannabinoid strength. Lower potency can ultimately lower a company's bottom line and produce inconsistent batches of extract.

However, **top-notch filter media in extractions can actually increase the potency of the desired cannabinoid** in the final product. The best filter media can aid in the removal of chlorophyll without adsorbing active compounds such as THC and CBD.

Safe to use without mandatory PPE

With some dry and loose forms of activated charcoal powder, personal protective equipment (PPE) is recommended to reduce the safety hazards associated with inhalation and exposure to the fine powder. Quality filter media, such as granular activated carbon, immobilize the carbon within cellulose fibers to create a product that will not lead to dust formation and completely eliminates the risk of harmful exposure to the operators. **Powder-based silica product is not only messy, but is also a carcinogen.**

On top of using quality filter media, using the proper PPE, optimized SOPs, and having the right technician training can significantly reduce the safety risk to operators, but **the only way to really ensure the risk is completely eliminated is to move away from powder-based filtration.**

The PPE hassle of powdered media:

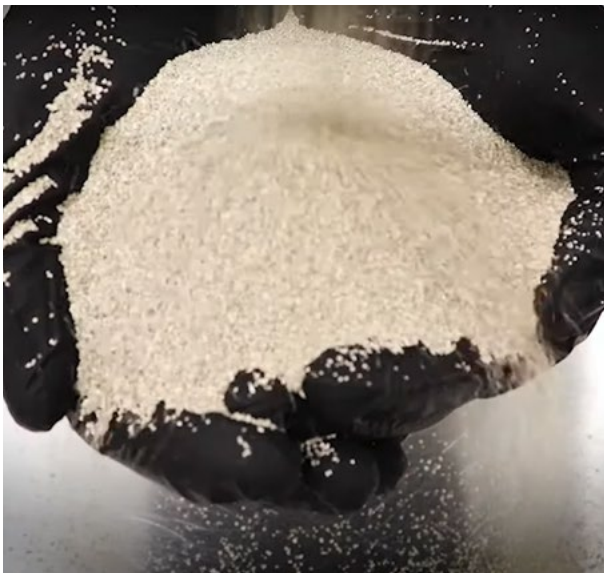
Safety glasses | **Lab coat/ overalls** | **Respirator mask** | **Protective gloves**

Easy to handle

In the production of the filter media, sometimes, the process can leave behind residual acids and bases in the product. In this case, cannabis processors must rinse the filter media before filtering the oil to help wash the residual materials away and avoid them from contaminating the distillate oil.

Additionally, powder-based filter media requires baking beforehand. Since the powders absorb moisture from the air, if the powder is not baked first the water within it can cause negative reactions during processing. Slow downs will freeze the moisture into a rock solid puck, restricting flow through the filter. In extraction, **slower flow leads directly to reduced profitability.**

Traditional powder filter media



Media Bros granulated filter media

High-quality carbon such as **granular activated carbon** does not require any additional preparation, which saves time.

All an operator has to do is properly pack the filter media inside the color remediation equipment for **streamlined operation and increased throughput.**

No leaching

Low-grade filter media can leach very small particles of carbon into the filtered extract requiring a sub 1-micron filter to remove these microscopic particles from the oils. The smaller the micron size the better filtration of the contaminated material there will be.

With high-grade filter media, cannabis processors do not have to worry about leaching heavy metals into the extract. Small particles will not end up in the final product, thereby giving oil processors peace of mind knowing they are producing an overall better extract.

COLUMBIA LABORATORIES HEAVY METALS TESTS

Extract produced with CRX™, CRY™, & CR2™ from Media Bros

Media Bros CRX™	CRX™ NP Extraction			CRX™ P Extraction B		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Cadmium (Cd)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Lead (Pb)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Mercury (Hg)	< LOQ	mg/kg	0.0215	< LOQ	mg/kg	0.0221
Media Bros CRY™	**CRY™ NP Extraction**			**CRY™ P Extraction B**		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Cadmium (Cd)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Lead (Pb)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Mercury (Hg)	< LOQ	mg/kg	0.0198	< LOQ	mg/kg	0.0233
Media Bros CR2™	**CR2™ NP Extraction**			**CR2™ P Extraction B**		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Cadmium (Cd)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Lead (Pb)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Mercury (Hg)	< LOQ	mg/kg	0.0190	< LOQ	mg/kg	0.0240

Advantages of **High-Grade Carbon**

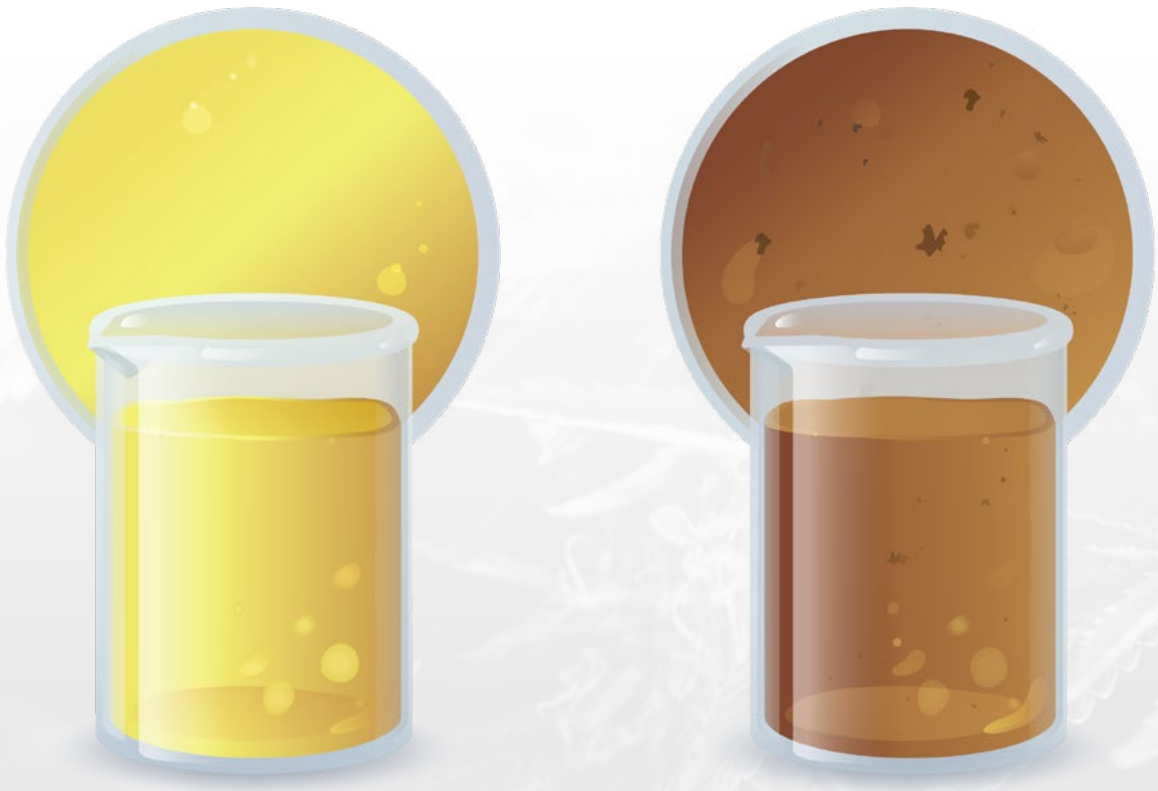
(cont'd 4/4)

Superior product color

Most importantly, high-quality activated carbon goes above and beyond in terms of color remediation compared to a standard filter media. After all, that is the ultimate goal in processing crude extracts through filters with high absorptive capabilities.

When selling distillate in bulk to suppliers or as consumer packaged goods to customers, **color is often seen as a reference point when determining the extract quality.** Of course, color is not the only factor that determines the purity of a cannabis distillate oil but it is the most obvious.

Essentially, using **high-quality carbon** can be the difference in creating an average oil and a connoisseur-grade oil with **great jar appeal.**



Lab Analysis

We worked with Columbia Laboratories to run tests to detect heavy metals in extract produced with our line of activated carbon filter media: **CRX™, CRY™, & CR2™**. We found that every sample tested below LOQ for heavy metals — in other words, unmeasurable by professional lab equipment.

Columbia LABORATORIES
A Tentamus Company

SAMPLE DATE
5/17/21

METHOD
AOAC 2013.06 (MOD.)

TEMP
18°C

LOCATION
Portland, Oregon

ABBREVIATIONS

Limits: Action Levels per OAR-333-007-0400, OAR-333-007-0210, OAR-333-007-0220

Limit(s) of Quantitation (LOQ): The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.

UNITS OF MEASURE

mg/kg = Milligram per kilogram = parts per million (ppm)

% wt = µg/g divided by 10,000

Media Bros CRX™	CRX™ NP Extraction			CRX™ P Extraction B		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Cadmium (Cd)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Lead (Pb)	< LOQ	mg/kg	0.0429	< LOQ	mg/kg	0.0443
Mercury (Hg)	< LOQ	mg/kg	0.0215	< LOQ	mg/kg	0.0221

Media Bros CRY™	CRY™ NP Extraction			CRY™ P Extraction B		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Cadmium (Cd)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Lead (Pb)	< LOQ	mg/kg	0.0397	< LOQ	mg/kg	0.0467
Mercury (Hg)	< LOQ	mg/kg	0.0198	< LOQ	mg/kg	0.0233

Media Bros CR2™	CR2™ NP Extraction			CR2™ P Extraction B		
HEAVY METALS	RESULT	UNITS	LOQ	RESULT	UNITS	LOQ
Arsenic (As)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Cadmium (Cd)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Lead (Pb)	< LOQ	mg/kg	0.0380	< LOQ	mg/kg	0.0480
Mercury (Hg)	< LOQ	mg/kg	0.0190	< LOQ	mg/kg	0.0240

Quality Filter Media from media bros

Filter media is widely used in BHO and CO2 extraction processes. For BHO and CO2 processors who want filter media with the highest adsorptive properties, **Media Bros** delivers a line of filter media that is easy to use, safe, and can handle a high-flow.

As an alternative to activated carbon for the filtration of pigments, natural zeolite offers numerous advantages. **Zeolite** can offer a longer life span, high purification rate, and low operating costs in the removal of chlorophyll and other unwanted pigments.

We understand the downfalls of using subpar filter media that can end up hurting the product.

That's why we've created **ready-to-use solutions** for the color remediation of cannabis oil:

CRX™

For BHO extraction, CRX removes unwanted colors from cannabis oil

CRY™

An aggressive CRX for stubborn colors

CR2™

CR2 eliminates colors and the bitter taste of CO2 extracts

If you want to remove the **green** or **brown** hue from your oil without losing out on valuable terpenes and cannabinoids, **contact us for more information about our products and services.**

The right filtration media can make all of the difference.

media bros

Learn more at

↳ **mediabros.store**

Follow us on Instagram

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