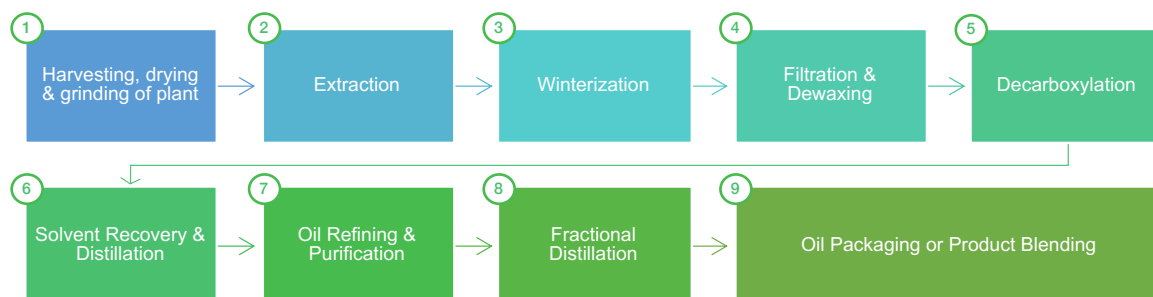


# Filtration Solutions for CBD Oil Extraction

Cannabidiol (CBD) is a chemical compound found in the cannabis plant that is becoming increasingly popular as a remedy for many common ailments. Despite its dramatic rise in popularity, processing cannabis to extract pure CBD has remained challenging. There are a number of common processing techniques utilized, all of which require varying levels of mechanical separation and filtration. Global Filter has the knowledge, experience and product line to provide solutions tailored to each individual process.

## TYPICAL CBD OIL EXTRACTION PROCESS



There are a growing number of extraction processes being developed. Some are new technologies, but most are iterations of existing techniques. As a result, there are an increasing number of engineering companies developing systems specifically targeted to CBD and oil recovery, many of which are being patented.

- The first processing step always involves a type of 'extraction' with the final target being high purity CBD oil and very low Tetrahydrocannabinol (THC) concentration.
- Ethanol and carbon dioxide are the most common methods for isolating CBD oil.
- Other solvents such as butane, heptane, and pentane are sometimes used depending on the price and availability.
- Processing in the absence of solvents is also possible using ice and water, but this method is generally less efficient and results in lower yields.

## Where in this process can Global Filter provide filtration support?

- Step 4 – Filtration & Dewaxing  
Removal of waxes, triglycerides, chlorophyll
- Step 6 – Solvent Recovery & Distillation

- Bulk Particulate Separation - May be required up-stream of other separation steps, such as centrifuges or filter presses
- Other Areas – Tank Vent Filtration
- Note: Multiple stages of filtration can be implemented as necessary in each processing step



# Filtration Solutions for CBD Oil Extraction

## PRODUCTS FOR CBD PROCESSING

- [Stacked Disc Elements \(GSD-Series\)](#)
- [Pleated High-Loft \(GHLS-Series\)](#)
- [Pleated Polypropylene \(PP-Series\)](#)
- [Pleated Microglass \(FG-Series\)](#)
- [Pleated Membranes](#)
- [Filter Bags](#)
- [Bag Filter & Cartridge Vessels](#)

## DID YOU KNOW....

### Market Size

Expected industry size is \$22 billion by 2022

### Facts

- CBD Oil is extracted from industrial grown hemp
- Legal in all 50 states after passing of 2018 Farm Bill
- CBD Oil is not allowed to have >0.3% Tetrahydrocannabinol (THC); the psychoactive component in marijuana
- FDA regulations are currently limited but are expected to increase

### Products & Industries Using CBD Oil

- Supplements
- Beverages
- Edible Products
- CBD Drops
- Nutraceuticals
- Medical uses (prescribed or equipped with laboratory data)

## NEW PRODUCTS IDEAL FOR CBD OIL PROCESSING



Stacked Disc (GSD-Series)



Pleated High-Loft  
Polypropylene  
(GHLS-Series)

PRODUCTS FOR CBD	PRODUCT PURPOSE/OBJECTIVE
<b>Stacked Disc (GSD)</b>	Medium to fine particulate retention utilizing the media depth; 0.45-15um; low-medium flow
<b>Pleated High Loft (GHLS)</b>	Absolute efficiency (99.98%) down to 0.2um; ideal for capturing deformable particles like oily waxes, celluloses; low-medium flow
<b>Pleated Polypropylene (PP)</b>	Absolute efficiency (99.98%); high chemical compatibility; down to 0.2um removal; great for fine filtration and/or protecting distillation columns and ethanol recovery
<b>Pleated Microglass (FG)</b>	Absolute efficiency (99.98%) down to 0.2um; higher dirt loading vs PP; lower initial pressure drop vs PP; more ideal for removing negatively charged particulates
<b>Pleated Membrane (PSH or PTFE)</b>	Hydrophobic medias available for tank/venting to inhibit moisture; polysulfone and PTFE (Teflon) available down to 0.02um (air rating) and microbial removal data (150-200 SCFM/10" element on average)
<b>Bag Filters</b>	Provide large particulate removal downstream of crude separation; 50-100um; handles higher flow
<b>Bag Filter &amp; Cartridge Vessels (GBFV, GFHD, GTCH, GTCHB, GMBV, GMBE)</b>	Robust housings to accommodate a variety of filter types and configurations; carbon, 304, 316 steel, ASME coding; 150-300 PSI operating pressure (product dependent)



# INDUSTRY BEST NET VALUE

Global Filter designs innovative and efficient filtration solutions. Our high-quality filters combined with our technical expertise allow us to offer you solutions that take the guess work out of your process. Our solutions optimize the service life of filters, reducing waste to positively impact the environment, while increasing your productivity. Consistent, cost-effective and high-quality filters allow you to achieve a consistent, high-quality product while adding to your bottom line.

## Our Filtration Solutions Are:



### Safer

Our products meet US and EU standards for purity and safe use with food and beverages



### Healthier

We develop products that improve the quality of life for humans and animals



### More Productive

Our solutions allow you to produce more product at a lower cost, improving your bottom line

## Advantages To Working With Global Filter:

- Access to an extensive network of filtration professionals from all over the world who have experience with thousands of unique processes and applications
- Manufacturing facilities in North America, Europe and Japan
- Products designed to maximize your productivity, product quality and bottom line
- Built to grow with you and help navigate the challenges and changing landscapes of your industry
- Technical support from initial conversations to implementation and beyond
- Shortest lead times and industry-leading value

