

CBD Oil/Resin Solvent Extraction

Sinterflo® M Media, USA

Customer:	Cannabis Oil Extraction Equipment Manufacturers
Application:	Color Remediation Chromatography (CRC) Purification
Products:	Sinterflo® M Stainless Steel Filtration Media
Primary Motive:	System Improvement
Location:	USA
Project Date:	2020
Division:	Ashland, USA



Customer Overview:

The customer is a global manufacturer of extraction equipment used for CBD oil production. In CBD solvent extraction a liquid hydrocarbon solvent such as butane, ethanol, or propane washes over the plant material to collect cannabinoid resins. That resin/oil then goes through a color remediation chromatography process also known as CRC in which a column is filled with various types of filter aids such as activated magnesium silicate, PVPP, clay, silica gel and carbon to strip undesirable plant materials. Once all these pigments, fats, and chlorophyll are removed, the end product result is a clear golden oil extract. The filter media must be retained inside the column using a porous material such as sintered stainless steel discs.

This process is to ensure the final product is purified for human consumption.

Customer's Problem:

Manufacturers and end users are currently using off-the-shelf solutions, such as stainless steel sintered metal powder discs. They are experiencing failures due to high back pressures and poor sintering processes. High back pressures often result in longer processing times, disc failure, and media pass-through which then could cause substandard product and potential negative health effects. Less robust disposable filter papers are also being used with negative results. Customer's filtration options have become limited when developing custom systems to increase efficiencies.

Porvair Solution:

Porvair offers a long-term solution by having the ability to provide custom sintered mesh-layups that will perform under very high pressures and can be modified into a variety of grades and sizes for scaled-up

production. Porvair's stainless steel sintered mesh discs are sustainable and reusable when properly cleaned.

Project Overview:

Porvair is able to successfully weld multi-layer sintered wire mesh to a variety of chromatography column hub supports. These specialised sintered discs will provide a custom solution for both small boutique and large-scale extraction operations capable of processing over 100,000+lbs biomass per day. Our capabilities will allow scale up with minimal product loss and shorter operating times.

Product Information:

- Sinterflo® M custom stainless-steel mesh filtration laminates

Other Opportunities:

Alternate extraction methods include supercritical CO₂, which would operate at a similar pressures with lower temperatures and would also utilize stainless steel filter media. Pre-filters are also required in order to remove large particulate prior to the final chromatography and distillation of the product.

