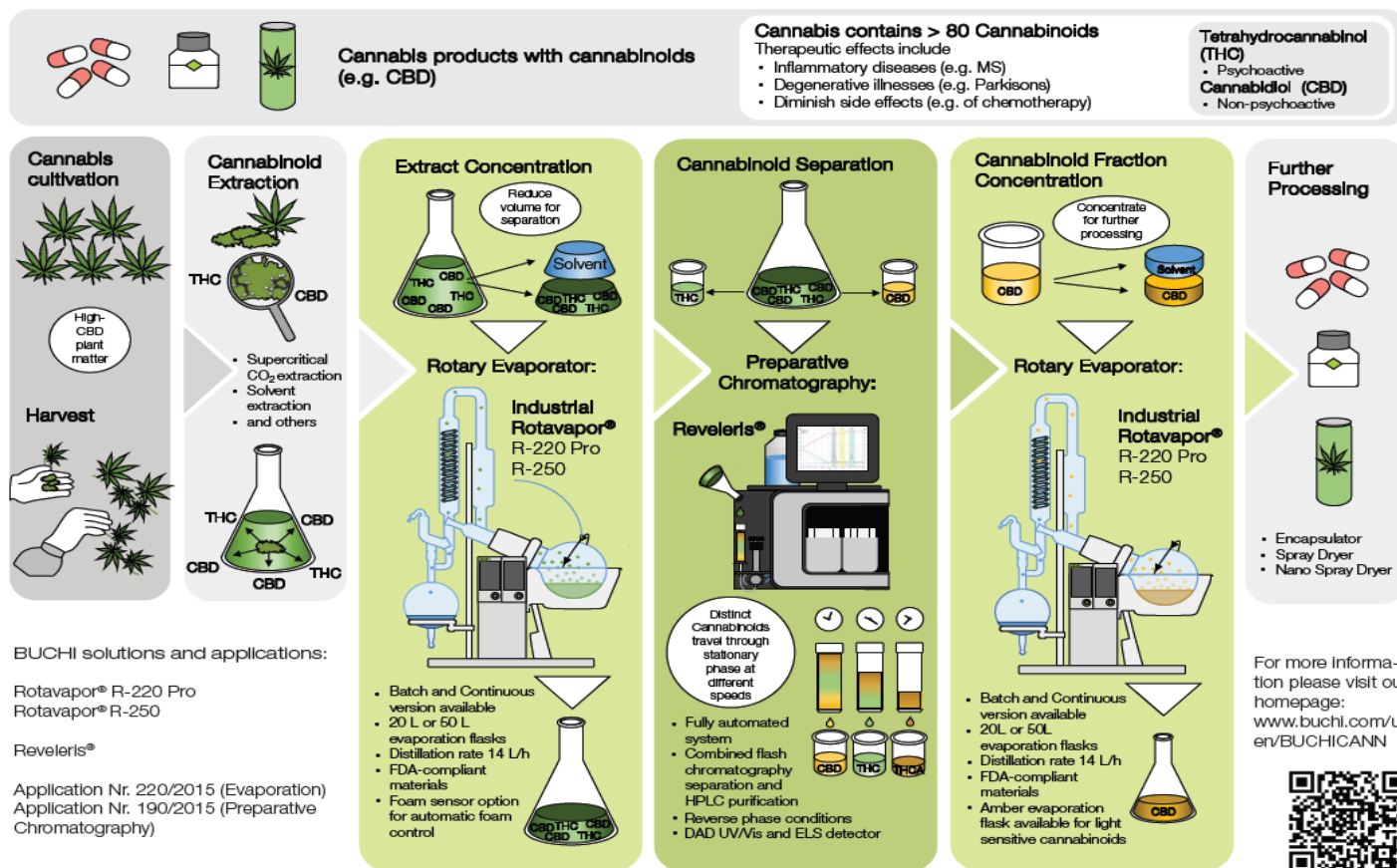


BUCHI offers a wide range of premium production and laboratory instrumentation for cannabis processing that can solve many laboratory challenges. Recent demand and competition within the cannabis market place is driving creativity of products faster now than ever before. With BUCHI's instrumentation, labs can increase efficiency with solvent recycling and can diversify their downstream processing techniques with unique instrumentation for purification, separation, powder formulation, and oil encapsulation. This guide will serve as a brief overview of instrumentation as well as describe real-world applications.



## Rotary Evaporators

As the inventor of rotary evaporators, BUCHI's trademarked Rotavapor system is an essential piece in every Cannabis laboratory for solvent evaporation. Cannabis extraction laboratories use rotary evaporators for product concentration and solvent recycling after the initial extraction and/or winterization. Depending on the volume of material processed, labs will generally have a 5 L, 20 L, or 50 L system. These instruments offer short term payback with solvent recycling efficiency greater than 95%. Return on investment can be measured in months for systems built to last decades.



## Flash / Prep Chromatography

Liquid chromatography is a common analytical technique used to analyze cannabis samples for potency and purity. This well-established technique used in quality-control also has a large-scale analogue known as “flash.” Flash chromatography runs at much larger sample volumes and allows for qualitative purification of extracted material. Within the cannabis industry, our customers are using this equipment for isolate production, THC removal in CBD distillate, and pesticide remediation. The Reveleris X2 system by BUCHI allows users to run approximately 1-kg of oil per workday. For customers who want to separate more than just CBx and THC the Reveleris Prep will allow for greater resolution separation and collection of a greater range of cannabinoids.



**Reveleris X2**  
Bench-top



**B-290 Spray Dryer**  
Bench-top

## Spray Drying

In the final stages of cannabis processing this instrument will allow customers to transform already valuable extracts into water soluble THC or CBD powders. Spray drying is an alternative evaporation technique that introduces a fine liquid mist of dissolved sample into a stream of inert gas rapidly evaporating the liquid and leaving engineered particles as the result. Common applications are for edible and inhalable THC/CBD powders. Customers can adjust several parameters to control particle formation which allows a user to adjust the particle size from 2  $\mu\text{M}$  (fine powder) up to 30  $\mu\text{M}$  (granular powder). With appropriate formulations labs can transform a nonwater-soluble product into a water-soluble product.

## Encapsulation

Oil encapsulation is technique commonly used in the food and nutraceutical industry for creating gelatin capsules. It produces stable dry shells around an oil or liquid. The surrounding capsule can mask taste, allow for easier handling, and help with controlled release. Ideas are endless when it comes to THC and or CBD capsules.

Lipids  
(e.g. oil and carotene)

Hydrogel-Polymer  
(e.g. alginate)



**B-390 Encapsulator**  
Bench-top

