

CANNABIS DISTILLATION

An effective way to distill THC and CBD cannabinoids from cannabis plants

Application

Extracting and purifying cannabinoids from cannabis plants involves a multi-step process. The most popular cannabinoids being isolated in the industry right now are tetrahydrocannabinol (THC) and cannabidiol (CBD). These are two naturally occurring major cannabinoids, or biologically active chemical compounds found in cannabis. Both are used in various ways to treat medical conditions such as anxiety, sleep problems, movement disorders, and chronic pain.

The process of purifying and isolating cannabinoids starts with extraction, where milled plant material is processed in a way that removes the cannabinoids. This step may involve a solvent such as ethanol or supercritical carbon dioxide. After extraction, the cannabis oil needs to be further refined to purify and isolate the desired chemicals. A common practice to achieve purification is through distillation. A wiped-film distillation process contains several steps where heat is required to evaporate then condense the chemicals for separation. Processing components that must be heated may include glass or stainless steel tubing, pumps, small vessels, and dispensing machines. Heaters must be extremely flexible in order to contour to a variety of surfaces, removable and reusable, easily controllable between 80°C and 100°C (176°F and 212°F), and moisture and chemical resistant. If the heaters do not feature these characteristics, inefficiencies and reduced production can occur, and lead to lost revenue and increased downtime.

Solution

BriskHeat silicone rubber heating tapes (BS0 and RKF tapes) are the preferred heaters for most of the distillation steps. They possess all the desired characteristics listed above. Additionally, they are manufactured in widths ranging from 0.5 in to 2.0 in (13 mm to 51 mm), and lengths from 2 ft to 200 ft (0.6 m to 61 m) so they are versatile enough to use on both small vessels and tubes/pipes. To control the temperature of the heaters, one preferred controller is the LYNX® PID digital temperature controller. It is available in a free-standing, single-zone plug-and-play version or a multi-module system with a full-color operator interface. LYNX® is a state-of-the-art temperature control system with extraordinary features and benefits including 1:1 control for each heater, highly-visible LED display, communication abilities for system integration, and 3-button programming. To maximize thermal efficiency, custom cloth removable and reusable insulators are used. As an alternative to using tape and cloth insulators, BriskHeat can provide custom cloth heating jackets designed to use LYNX® controllers. BriskHeat can manufacture almost any size and configuration of cloth heating jackets and insulators, and the durable construction and oil-resistant PTFE (Teflon) cloth allows them to last for years.



Higher capacity heaters, up to 15 amps, that require PID control may utilize the SDX digital benchtop style controller. This works well with larger blankets, totes or drum heaters. Adding a high-temperature limit controller such as the HL101 prevents accidental over-temperature conditions that might damage products.

Cannabinoid producers must have the ability to tailor heaters to their unique processes. BriskHeat offers the most complete variety of surface heating products and temperature control options available to provide optimal solutions. Examples include drum heaters, custom cloth heating jackets, beaker heaters, band and cartridge heaters, and silicone rubber heating blankets.

Industries

Analytical Instrumentation/
Laboratory
Chemical Processing/
Extractions

Life Science/Medical/
Pharmaceutical