

Closed-Loop Extraction Systems

Cannabis manufacturers who utilize closed-loop extraction systems must ensure their extraction systems are operated and maintained according to the requirements established by the Department of Cannabis Control (DCC) under the California Code of Regulations at Title 4, Division 19, Chapter 8, Article 3, Solvent Use and Safety. These requirements govern the use of volatile or asphyxiating solvents, or flammable liquids, permissible extraction types, closed-loop extraction systems, and the continued certification of closed-loop extraction systems.

This document is intended to outline the requirements that closed-loop extraction system operators must follow to ensure the compliant use of extraction systems.

General Requirements

All operators of closed-loop extraction systems must comply with:

- All requirements of Chapter 39 of the California Fire Code;
- All requirements in Title 8, California Code of Regulations, sections 5416-5420, which include ensuring adequate ventilation and controlling sources of ignition;
- All divisions of Occupational Safety and Health (Cal/OSHA) regulations related to the processing, handling, and storage of the applicable solvent; and
- All fire, safety, and building code requirements related to the processing, handling, and storage of the applicable solvent or gas.

Licensed manufacturers may not conduct closed-loop system operations in an area zoned as residential.

Solvent Requirements for Closed-Loop Extraction Systems

- Solvents used for closed-loop extractions must meet minimum purity standards.
 - Hydrocarbon-based solvents: 99 percent purity
 - Nonhydrocarbon-based solvents (i.e. CO₂ gas): Food Grade

- Operators of closed-loop extraction systems must maintain copies of safety data sheets and documentation evidencing purity for any chemical solvents used and must make these records available to the DCC upon request.

Note: Operators of closed-loop extraction systems who also use ethanol for extractions or post-extraction processing must also comply with all requirements concerning ethanol operations including those found in sections 17204 and 17205 of the DCC's regulations.

Closed-Loop Extraction System Requirements

All operators of closed-loop extraction systems must:

- Establish and implement procedures to ensure that the closed-loop extraction system is maintained in accordance with the equipment manufacturer specifications.
- Maintain logs documenting the date(s) of maintenance; description of the maintenance done, including any machine parts that were replaced; and the initials of the employee conducting the maintenance.
- Establish and implement procedures to ensure routine verification that the system is operating in accordance with equipment manufacturer specifications and continues to comply with fire, safety, and building code requirements and conduct any verification recommended by the equipment manufacturer.
- Maintain logs documenting the date(s) of verification, description of the verification method, and the initials of the employee conducting the verification.
- Develop and implement written standard operating procedures, good manufacturing practices, and a training plan prior to using the closed-loop system. Personnel must have documented training in accordance with section 17211.1 of the DCC's regulations on how to use the system and handle and store solvents and gases safely prior to operating the system. Personnel must have access to applicable safety data sheets.
- Obtain and maintain documentation confirming that the professional closed-loop systems, other equipment used, the extraction operation, and facilities are approved for use by the local fire code official prior to commencing operation of the closed-loop system, if required by local ordinance.



- Operate the closed-loop extraction system in a facility that has a gas detection system that meets the requirements of title 24, California Code of Regulations, sections 3905.1-3905.2.
- Make all required documentation listed above available to the DCC upon request.

Certification of Closed-Loop Systems Requirements

All closed-loop extraction systems must:

- Be commercially manufactured.
- Bear a permanently affixed serial number.
- Be certified for use after installation by a California-licensed professional engineer.
 - Engineer must certify that the system:
 - Was commercially manufactured;
 - Is safe for use with the intended solvent; and
 - Was built and installed to codes of recognized and generally accepted good engineering practices.
 - Certification Documents must contain:
 - The name, signature, and stamp of the California-licensed professional engineer;
 - The serial number of the extraction unit being certified;
 - A list of the solvent(s) deemed safe for use with the equipment; and
 - The address of the premises where the extraction unit was certified.
 - Current certification document must be maintained and made available to the DCC upon request.
- The system must be recertified if any of the following occur:



- The system is modified in a manner such that its operation no longer conforms to the original equipment manufacturer specifications, such as by adding or removing components that expand or reduce its capacity.
- The system is moved to a different premises.
- Five years have elapsed since the date of the certification.

Additional Requirements

- Video surveillance is required in all areas where cannabis is extracted.

The Department of Cannabis Control (DCC) licenses and regulates commercial cannabis activity within California. To learn more about the California cannabis market, state licenses or laws, visit cannabis.ca.gov. Email questions to info@cannabis.ca.gov or call 1-844-61-CA-DCC (1-844-612-2322).

