



**Monthly Topic: Gas Detection for the Cannabis Industry**

- With the increase of States legalizing marijuana for recreational and medicinal use, there has been a similar increase in the number of incidents caused by these Marijuana Grow Operations (MGO's). The two categories regarding gas detection include explosion/fire fueled by combustible gases, and asphyxiation due to Oxygen (O<sub>2</sub>) displacement from Carbon Dioxide (CO<sub>2</sub>) leaks.
- If the release of a hazardous or combustible gas can cause immediate harm to a person or property, a means to mitigate the gas should be provided. Combustible liquids and compressed gases used in extraction or processing in Marijuana Facilities should be vented in accordance with International Fire and Mechanical codes.
- Current cultivation methods of cannabis and industrial hemp utilize CO<sub>2</sub> enrichment to increase plant growth and development. CO<sub>2</sub> is classified as an asphyxiant gas, meaning it has the potential to reduce or displace normal O<sub>2</sub> concentrations in the air.
  - CO<sub>2</sub> can be stored in vacuum-jacketed cryogenic liquid cylinders, or in steel or aluminum cylinders as liquefied compressed gas.
  - It can also be produced onsite by carbon dioxide generators. If CO<sub>2</sub> is generated using fossil fuel combustion, Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) can be produced. Both CO and NO<sub>2</sub> are toxic gases that can cause significant health effects or even death for exposed individuals.
- Hash Oil Concentrate is produced by extracting cannabinoids from marijuana. Solvent-Based Concentrate is the most common, and the process involves passing a gas through a solvent extraction device filled with cannabis plant matter.
  - Commonly used combustible gas solvents include Butane (C<sub>4</sub>H<sub>10</sub>), Propane (C<sub>3</sub>H<sub>8</sub>), Hexane (C<sub>6</sub>H<sub>14</sub>) and Ethanol (C<sub>2</sub>H<sub>6</sub>O).
  - Hypercritical CO<sub>2</sub> is another solvent rising in popularity, which adds the risk of asphyxiation to the extraction process.



**CD-6 CO<sub>2</sub> Detector, Controller and Transducer**



**5100-02-IT LEL  
Class 1, Div. 1**

- Macurco Gas Detection equipment will sense gas, provide visual and audible alarms, and can control appliances to mitigate the gas prior to reaching hazardous levels. Commonly controlled equipment includes ventilation systems and mechanical interlocks that shut down the flow of gas to the unit when gas is detected. Additional audible and visual alarms can also be controlled to alert occupants of unsafe levels.
- The 2018 edition of the NFPA Fire Code will likely have a chapter on fire safety for the cannabis industry. Refer to the "NFPA 2018 Cannabis Code" link below.
- Regulation and enforcement of handling hazardous gases may vary by State, so be sure to consult your Fire Marshall or AHJ for local requirements.

**Macurco Gas Detectors**

**Gas in the News**

**Learn More**

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• <a href="#">CD-6/CD-12 CO<sub>2</sub></a></li> <li>• <a href="#">Explosion Proof LEL</a></li> <li>• <a href="#">Explosion Proof Toxic</a></li> <li>• <a href="#">Explosion Proof CO<sub>2</sub></a></li> <li>• <a href="#">CM-6/CM-12 CO</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">Extraction Explosion - OR</a></li> <li>• <a href="#">NYC House Explosion</a></li> <li>• <a href="#">Butane Extraction Injuries</a></li> <li>• <a href="#">BHO Explosions in the UK</a></li> <li>• <a href="#">CO<sub>2</sub> Restaurant Fatality</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">Colorado Fire Marshal</a></li> <li>• <a href="#">NFPA 2018 Cannabis Code</a></li> <li>• <a href="#">Hazardous Locations</a></li> <li>• <a href="#">Marijuana Laws State Map</a></li> <li>• <a href="#">CO<sub>2</sub> vs. Butane Extraction</a></li> </ul> |
|--|--|---|

Visit our website: [www.macurco.com](http://www.macurco.com)

Questions or Comments? Email [info@aerionicsinc.com](mailto:info@aerionicsinc.com) or Call 877-367-7891

Aerionics Inc. 3601 N. St Paul Ave Sioux Falls, SD 57104

To unsubscribe from future Technical Newsletters email [info@aerionicsinc.com](mailto:info@aerionicsinc.com)



Made in the USA