SAFETY FIRST

Buying Your Next Extraction Lab

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Safety First, Buying Your Next Extraction Lab

"Safety first" - it's more than a sign in the corner of the extraction lab. To the people that work there it is a way of life. Extraction labs can be dangerous environments especially for methods that require pouring highly flammable butane (or some other volatile solvent) into a cannabis-filled pipe.

Respected labs blow up every year, sometimes from operator error, but often due to inadequately designed and built systems. We will go over some the dangers to avoid and things you can do to improve your odds for your grow or extraction operation.

THERE ARE MORE EXTRACTION LABS THAN EVER

According to the New Frontier Data research firm, nationwide, concentrated products accounted for nearly a third of the $10.3 billion legal market in September 2018 (double 2015 numbers). According to Cannabis Benchmarks there were 2,592 active cultivation licenses in California alone as of June 2019. According to the Cannabiz Media Database, there were 521 extraction licenses and 55 infusion licenses issued in 2018.

Extraction Labs Can be Dangerous

In the 33 states where extracts are legal, at least 10 fires or explosions have occurred in the past five years at facilities that extract hash oil used in edible products. Nearly all resulted in serious injuries for production-line staff.

According to OSHA most of the states where marijuana is legal offer no safety and health guidance for the new industry. The National Institute for Occupational Safety and Health, which researches work-related injury and illness, has conducted only two hazard evaluations of legal marijuana facilities, neither of which focused on the extraction of hash oil. Even in those states that do offer safety and health guidance — Colorado, California, Michigan, Oregon, and Washington — fire safety officials complain that worker safety protections are often inadequate.

photo © Newswire

Heavily Regulated or Banned

Two states bar the use of butane to extract hash oil in professional operations. New York, for instance, allows extraction only when the agent used is carbon dioxide or alcohol; a processor who wishes to use an alternative method must receive specific approval. Eleven states require a "closed loop" system that contains the flammable agent, preventing its release into the air, where it can ignite. *The Cannabis Investor* (Feb 2019)

Extraction in California

Since recreational marijuana sales became legal in 2018, California alone has licensed 154 businesses to use butane or other explosive solvents to produce marijuana concentrates. Licensed businesses pay fees of up to $75,000 per year and must use equipment that keeps solvents contained. They must pass a fire-code inspection and train employees on safety standards. *Reuters* (June 2019)

Extraction in Colorado

Following an uptick in explosions in Colorado, fire officials there persuaded the National Fire Protection Association, which establishes a fire code for the whole country, to amend its rules to address hazards at facilities that grow and extract marijuana. The revised code requires any hazardous hash-oil extraction process to be performed in a non-combustible room, in a building that contains no child or health care facilities. Staff must be trained on safe operation of the extraction equipment, and the extraction room must be equipped with a gas detection system and multiple fire extinguishing systems. *Politico* (Feb 2019)

Risk Still Remains High!

Chris Witherell, an industry consultant in California, says most of the hundreds of hash-oil operations he has inspected don't pass the first time he visits. Equipment is often poorly assembled or operating with incorrect parts. This is supported by the number of incidents still occurring across the country to reputable facilities.

- In May 2017 Burn victim in medical cannabis dispensary explosion sued his former employer, New Mexicann Natural Medicine Inc. for an explosion that occurred while Nick Montoya was using butane to extract THC. The extraction process went awry when a puddle of spilled butane in which Montoya was standing caught fire, according to his complaint, "resulting in a massive explosion filling the room with a large fireball, separating the roof from the building. He says he was not trained and did not have adequate equipment or emergency protocols to be performing the dangerous extraction procedure.

- June 2018 Cal/OSHA fined Santa Cruz-based Future2 Health Services $50,470 in proposed penalties for 10 violations after the propane ignited and exploded in its extraction lab, badly burning the worker.
- Recently GenCanna (an agricultural technology company with a hemp processing facility in Clark County) confirms that the G1 building of the Hemp Research Campus caught fire (Nov 7, 2019). Firefighters also reported that there was an explosion.

And according to the DEA:

- It received reports of 260 illegal hash-oil labs in 2017, a 38 percent increase from 2016.
- A quarter of those labs were discovered because they caught on fire.
- Explosions have been reported across the United States and Canada killing at least 19 people and injuring 126 more in California since 2014.
- California regulators fined a licensed producer $50,000 in December 2018 after a propane explosion badly burned a worker.

WHAT NEXT?

There are good grow and extraction facility manufacturers out there. Now that you have your checklist in hand, make sure that whoever you choose can address each item to your satisfaction. You should expect a unit built by someone that knows what they are doing. Companies with onsite architects and design folk to help you create a safe and certifiable version of what you see in your head. Companies that have been around building this equipment before cannabis became popular again. That way you know what they are focused on is quality and longevity, not a fast buck in a new market.

Cannabis Extraction Lab Safety Check List

Cannabis extraction labs work with a wide array of solvents to extract things like cannabinoids and terpenes from the cannabis plant. These solvents, as well as the equipment used in the process, can create a dangerous environment if not built to code and optimized for the cannabis industry.

The primary concern in these types of labs is the risk of explosion and proper ventilation. When the chemicals, solvents, and/or equipment poses these risks, it is required that a C1D1 or C1D2 extraction lab be used.

Manufacturer:

- ☐ Find a manufacturer committed to producing the safest state-of-the-art, cannabis extraction labs and processing rooms. If safety is a top concern for them, their website, reps and literature will have it front and center.
- ☐ Ask for customers willing to talk with you about their experience with the unit they are trying to sell you. How many of those labs are running today? How long have they been running without incident? The more successes they can point to the better for you. You don't want to be anyone's Guinea pig!
- ☐ Look for a company that has been designing and manufacturing this equipment long before the fly by night organizations started hopping on the cannabis money train. Find someone in it to make the best facilities, kitchens and labs period.
- ☐ Be careful of consolidators. Many grow facility providers do not make their own stuff. They source it (usually overseas) and have their people put it together and sell it. The vast majority provide rigorous testing of the components working together that are inspected and approved for sale. But if they didn't build them and they need a change, they are going to have to go back to the manufacturer (or send you back). They probably could not help you design and build a new one from scratch and have it up in six weeks. That's not their business model.

Building/Design:

- [ ] Built to code for C1D1 or C1D2 specifications according to the state and county regulations in which the labs will reside.
- [ ] Professionally engineered for Co2, Butane, Hexane, Alcohol, as well as mixed solvents.
- [ ] Designed so if you need changes, they can be built to spec and still meet your exact specifications.
- [ ] Designed to easily scale and be configured in a number of arrangements.

Make sure it includes:

- [ ] Interlocked electrical and emergency system.
- [ ] Ignition source controls.
- [ ] Fire Detection and Control Systems
- [ ] Vapor Detection - Sniffer
- [ ] Ventilation - for both dilution and extraction fan systems.
- [ ] Access Control System – Displays conditions inside the lab before you go in
- [ ] Security Doors - with 'push to exit' PANIC bar
- [ ] Horns and Strobes
- [ ] Atmospheric Sensors - Constant monitoring for unsafe 'Alert' conditions
- [ ] Evac-Air System w/backup power

Disclaimer: Linked Equipment wanted to provide a starting point for companies considering extraction solutions that are concerned about the safety of their facilities, kitchens and labs. This is by no means an all-inclusive list. Regulations and requirements change state by state. If you would like to obtain turnkey facilities that meet or exceed safety regulations in your area, please contact Linked Equipment. We take the guesswork out for you. All of these safety features are included in our extraction labs.

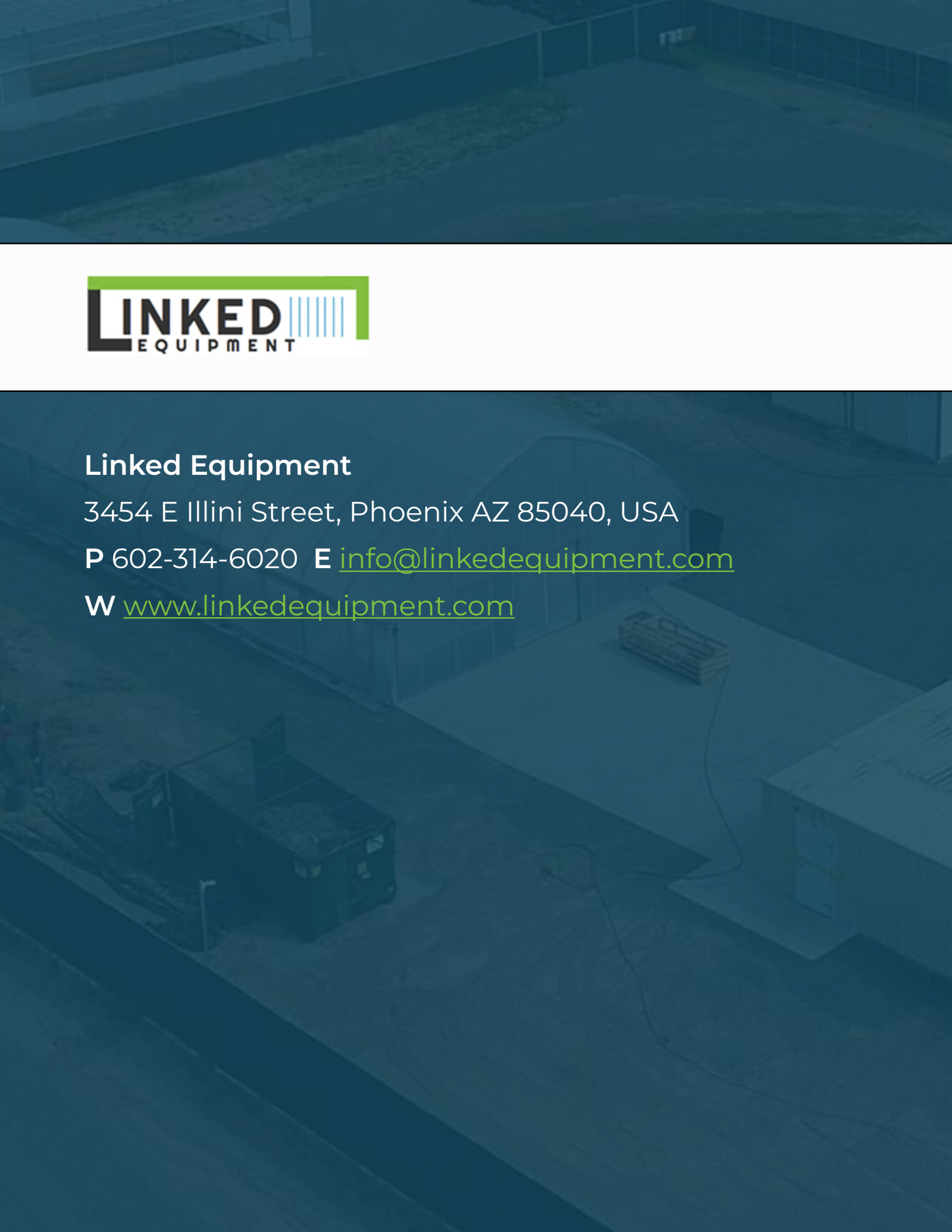
About Linked Equipment

Linked Equipment specializes in designing and building Intermodular Steel Building Units (ISBUs), also known as shipping containers. Our professional engineers transform shipping containers into state-of-the-art cannabis extraction labs, and at a fraction of the cost of traditional lab builds.

At Linked Equipment, we prioritize safety and security in our C1D1 and C1D2 extraction labs. Our cannabis extraction labs are technologically advanced and have undergone 3rd party engineering peer review to ensure we supply our clients with the highest quality labs. Also, Linked Equipment extraction labs are fully customizable and are easy to scale up rapidly and expedite your time-to-market.

We design and build our parts to work together. When we source equipment, it is from vendors built into our design specs from the outset, not as an afterthought. Our C1D1 and C1D2 extraction labs are designed to meet all state and county regulations, depending on your state and county. Linked Enterprises systems have been professionally engineered and are technologically advanced extraction pods that meet all regulations in legalized markets.

We can custom build your C1D1 and C1D2 extraction labs that can scale easily with your needs and be configured in a number of arrangements.



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