

CANNABIS: EXPLODING ONTO THE SCENE

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The legalization of cannabis has raised a number of questions for the insurance industry, not least of all, how to handle property claims. Naturally, when people think of cannabis-related property claims, their minds go straight to commercial growing facilities and they shudder at the thought of a crop loss combined with a business interruption claim. While that represents a serious concern for insurers — and rightly so — we have noticed an increasing number of incidents of a different kind. The incidents are tied to a process called BHO extraction which can lead to large losses from resulting property damage and injury to occupants.

WHAT IS BHO EXTRACTION?

BHO generally refers to “butane hash oil” or “butane honey oil” — because of its colour and consistency. BHO is a type of cannabis concentrate made using hydrocarbon solvents, such as butane, to extract the plant of its essential oils, including THC. It’s efficient and cost-effective, and when performed in a controlled environment using a closed-loop system, it’s generally safe. The process is also incredibly easy to replicate at home, which is where the problem lies because it’s often performed with significantly less sophisticated equipment and fewer precautions. Information on how to carry out a BHO extraction can easily be found online, and all of the equipment necessary for a basic setup can likewise be purchased online or in stores (cannabis included):¹

- Cannabis
- Extraction tube
- Coffee filter
- Butane
- Pyrex dish

Dried cannabis is packed into the extraction tube. At one end of the tube is a cap with some type of filter, and at the other end is a gas-inlet cap to receive the butane. The butane is injected into the tube where it liquefies. The liquefied butane reacts with the cannabis, extracting the THC, and then passes through the filter into a holding dish. Finally, any leftover butane is burned off through an evaporation process usually performed in a pot or a double boiler on a cooktop.

The main issue with this setup is that it’s an open extraction, as opposed to a closed-loop. What that means is the butane is released into the air instead of being contained. Because butane is heavier than air, the vapour can collect in low lying areas if not properly ventilated. A single spark at the wrong time could result in something far more potent than any cannabis derivative.

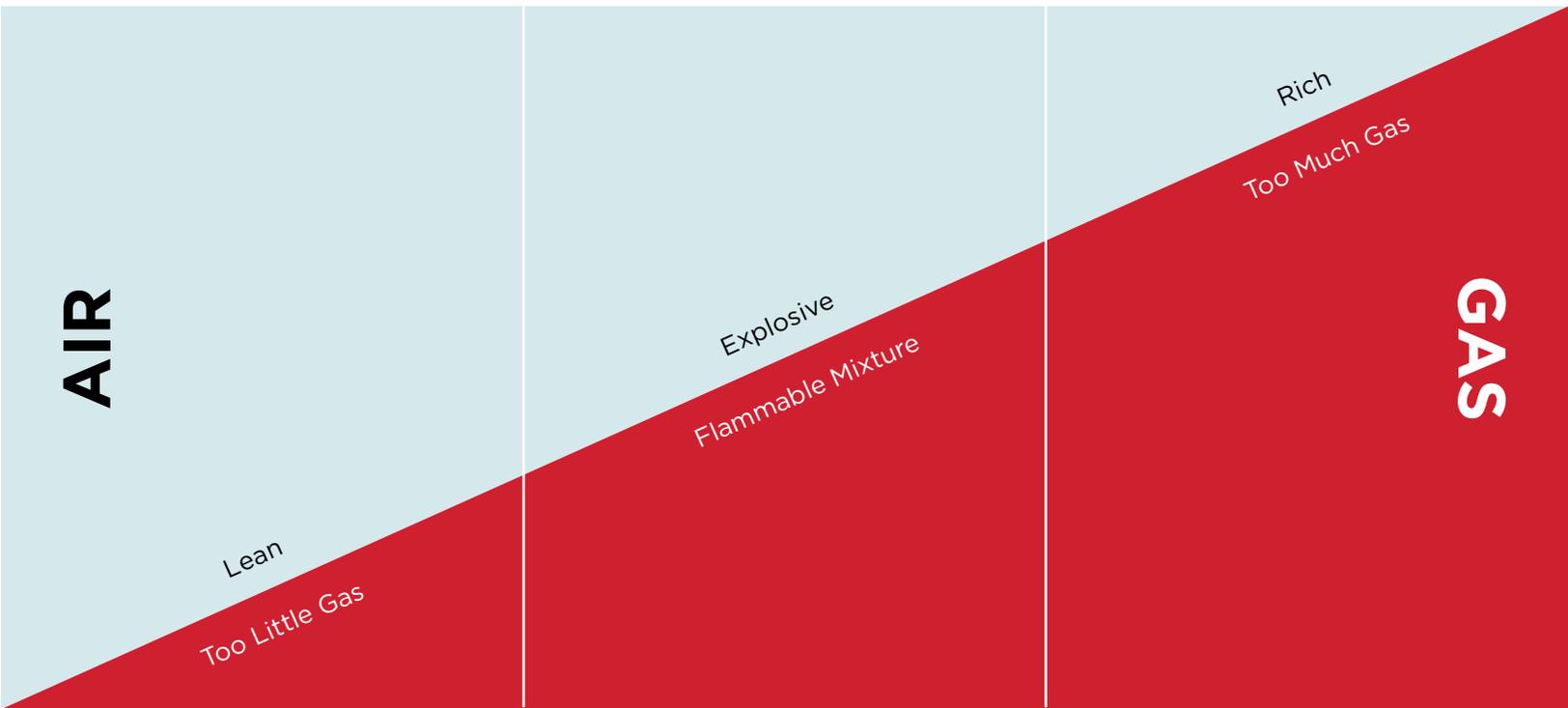


HOW EXPLOSIONS HAPPEN

You may think that the more fuel in a room, the bigger the explosion. But that isn’t the case. For an explosion to occur, you need the right mixture of air and gas. And every gas has an upper and lower explosion limit. Meaning, if the fuel and air mixture in the room is too low or too high, it won’t ignite. When there is not enough fuel in the room, we say that the mixture is too lean. When there is too much fuel, the mixture is too rich. If the fuel to air mixture in the room is too lean or too rich, you could light a whole pack of matches and the fuel simply will not ignite.

¹ Williams, Jason. “Marijuana Butane Honey Oil (BHO) Extraction Fire and Explosion Investigations.” 2017, <https://www.omfpoa.com/wp-content/uploads/2017/06/BHO-Paper-Final-PDF.pdf>

GAS-TO-AIR MIXTURE



So, during a BHO extraction, if too much butane gets released into the room it can actually prevent an explosion — at least for a time. I recently attended a scene where the explosion occurred roughly two hours after the BHO extraction. What happened? The amount of butane released during extraction resulted in a mixture that was too rich. However, once the extraction was complete, doors and windows were opened, and enough fresh air entered the room to create an explosive mixture. All it took was a cigarette lighter to ignite the fuel and cause a big enough explosion to blow out the doors and windows. But it also could have been triggered by electrical arcs or static electricity, both of which have been identified as successful ignition sources.²

WHAT TO LOOK FOR IN A “FIRE” OR “EXPLOSION” CLAIM

It’s important to note that when these files come in, they don’t make reference to cannabis or hash oil or a BHO extraction. They simply come across your desk as a fire or explosion. Therefore, you must look for visible traces that identify these files as a BHO explosion. At many of the scenes I have examined over the years, there are telltale signs that an extraction process took place, including but not limited to, displaced walls and windows, thermal damages to the users, butane cans, bags of cannabis, and ABS pipe used for the extraction process.

² DEH, D. o. (2014). Butane Hash Oil, A Study for First Responders. California.

IS THERE SUBROGATION POTENTIAL?

While cannabis was legalized on October 17, 2018, cannabis extracts, along with edible cannabis and cannabis topicals only became “available for legal sale as of October 17, 2019.” And while it is now legal for people to make their own edibles at home, under the Cannabis Act, the production of cannabis extracts made using organic solvents such as butane is explicitly prohibited, unless authorized.

Furthermore, individuals extracting BHO are not ignorant of the possible risks. One website selling equipment even reminds its customers to “follow safety precautions to avoid blowing up the neighborhood!” Hydrocarbons such as butane also come with clear labelling explaining that, if misused, the product can explode. If the user is warned and chooses to disregard that warning, which results in a loss, is that cause for subrogation?

Explosions from BHO extraction are not a new phenomenon brought on by the legalization of cannabis. The U.S. Drug Enforcement Administration (DEA) says 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, according to the agency’s annual drug threat assessment.³ However, the worry is that with legalization, more people may experiment with BHO extraction at home. An opinion shared by Sgt. Guy Pilon, clandestine lab co-ordinator with the Edmonton Police Service: “What’s going to happen – and this is just my prediction – is that people are going to do a butane hash extraction at home and

they’re going to blow themselves up.”⁴ And if this proves to be true, it’s critical that insurers know what to do and who to call.

³Sullivan, Andy. “Exploding danger: U.S. marijuana oil labs pose deadly, destructive hazard.” Reuters, June 4, 2019, <https://www.reuters.com/article/us-usa-drugs-insight/exploding-danger-u-s-marijuana-oil-labs-pose-deadly-destructive-hazard-idUSKCN1T51F4>

⁴Graveland, Bill. “‘Blow themselves up:’ Police worried about home butane hash oil extractions.” CBC, Nov 18, 2018, <https://www.cbc.ca/news/canada/calgary/butane-hash-oil-extraction-1.4910812>



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Tom is a NFPA 1033 certified Fire and Explosion Investigator with over 15 years of experience conducting complex investigations into large losses, incendiary fires, explosions, and fatal fires. His professional experience includes 5 years with the Office of the Fire Marshall, 10 years with Kingston Fire and Rescue, and 20 years with the Canadian Armed Forces, during which he was recognized by the Government of Canada for leadership excellence. Tom has instructed numerous fire investigations courses and has testified as an expert witness on federal criminal cases in Ontario Provincial Courts.

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