



Policy Center

Public Health & Safety

Delta-8 THC and Beyond

Hemp-derived Delta-8 THC burst onto the scene in 2020 and has proliferated the hemp product space filling the demand for Delta-9 THC products by consumers for whom and in markets where D9-THC is prohibited. D8 products from edibles to vapor cartridges to tinctures can be found in virtually every convenience store, and can easily be found and ordered online.

Delta-8 THC is...

Delta-8 tetrahydrocannabinol, also known as Delta-8 THC (D8), is a psychoactive substance found in the *Cannabis sativa* plant, of which marijuana and hemp are two varieties. D8 is an isomer of Delta-9-THC (D9) meaning they have the same molecular formula but have slight differences structurally. D8 has psychoactive and intoxicating effects very similar to its Schedule 1 sibling, D9.

D8 manufacturers and marketers claim that the 2018 Farm Bill protects their products because they are derived from federally compliant hemp biomass and made into products that contain under “0.3% D9-THC by dry weight.” This interpretation of the Farm Bill is being used to skirt the Controlled Substances Act by selling a form of THC under the guise of “legal hemp,” and as we will see later in this discussion, that includes naturally-occurring hemp-derived D9 in addition to synthesized hemp-derived D8.

Delta-8 THC is not...

First, D8 has not been evaluated or approved by the Food and Drug Administration (FDA) for safe use in any context. Second, D8 is not naturally occurring in any appreciable amount in marijuana or hemp. Third, experts estimate a kilogram of naturally-occurring D8 from hemp would cost over \$250,000,000 because it would take *so much* hemp biomass to accumulate the needed amount of D8.

If D8 does not occur naturally in commercially viable amounts; where does the D8 on the market come from, and why is this problematic? Caustic chemicals, like sulfuric acid, are used to synthesize D8 from CBD isolate. The industry has a glut of virtually worthless CBD isolate that is becoming more and more difficult to sell because of its commoditization, and CBD operators are under pressure from investors to turn their worthless CBD isolate into something more profitable and much more in demand - psychoactive and intoxicating D8.

These CBD operators have enlisted the help of chemists to turn their CBD isolate into D8 (which also contains a whole host of other “tag-along” chemicals that are part of the synthesization process). In addition to D8 being contaminated by D9, other adulterating compounds have been identified - Delta-10-THC (D10), Delta-7-THC (D7), and Delta-6a10a-THC (D6a10a); but have unknown effects on the human body. Other *unidentified and unknown* compounds are also left behind during synthesis which could lead to a public health crisis.

Exacerbating the problem, no clinical testing has been done on the effects of these chemicals, and no public-health based testing requirements currently exist. With no federal regulation of D8, these products are sold online or in smoke shops, vape shops, and convenience stores - often to those under 21 or even to minors.

What else is there?

Now that these manufacturers have seen the huge demand for D9 alternatives, they are looking for the next chemical compound they can synthesize from CBD that will get their customers high. The next few compounds to hit the market will likely be D10, D7, D6a10a, THC acetate ester (THC-O), and hexahydrocannabinol (HHC).

Have you seen this story before?

By now you are probably seeing eerie similarities to the days of K2 and Spice with compounds that mimic the effects of D9 being sold as a “legal alternative” to D9. Like the days of K2 and Spice, the manufacturers’ chemists are planning ahead for the likely crackdown on D8 with the compounds mentioned above and likely many more on the drawing board. Unless comprehensive regulations are implemented, the same game of “whack a mole” will start with this new class of synthetic cannabinoids.

Synthetic cannabinoids are not the only problem, however.

When manufacturing D8 products, D9 is also produced and is “dragged along” into and adulterating the final product. Manufacturers provide customers a Certificate of Analysis (COA) of the cannabinoid content of their products and often shop for labs that lack the ability (equipment and personnel) to differentiate D9 from D8 resulting in COAs that show that the products are compliant for D9 content when they actually are not. Products not compliant for D9 content are Schedule 1 narcotics, and independent testing has identified that many D8 products are, in fact, “hot” for D9 with levels routinely over 5.0% D9.

With D8 becoming so popular and accepted in the unregulated market, manufacturers are now producing products with intoxicating levels of hemp-derived D9 claiming them as legal and compliant because they were made from compliant hemp biomass and the end product contains under 0.3% D9 by dry weight. This interpretation of the Farm Bill results in edible products that are more potent than regulated marijuana edibles in states like Colorado and California.

A typical gummy bear can weigh about 5 grams, and applying the 0.3% D9 limit, that gummy bear could contain 15mg of D9 and be “legal.” Additionally, a 30-count bottle of those gummy bears would contain 450mg of total D9. By contrast in regulated adult-use marijuana markets like Colorado; D9 limits for a single serving is 10mg of D9, and edible packages are limited to 100mg of total D9.