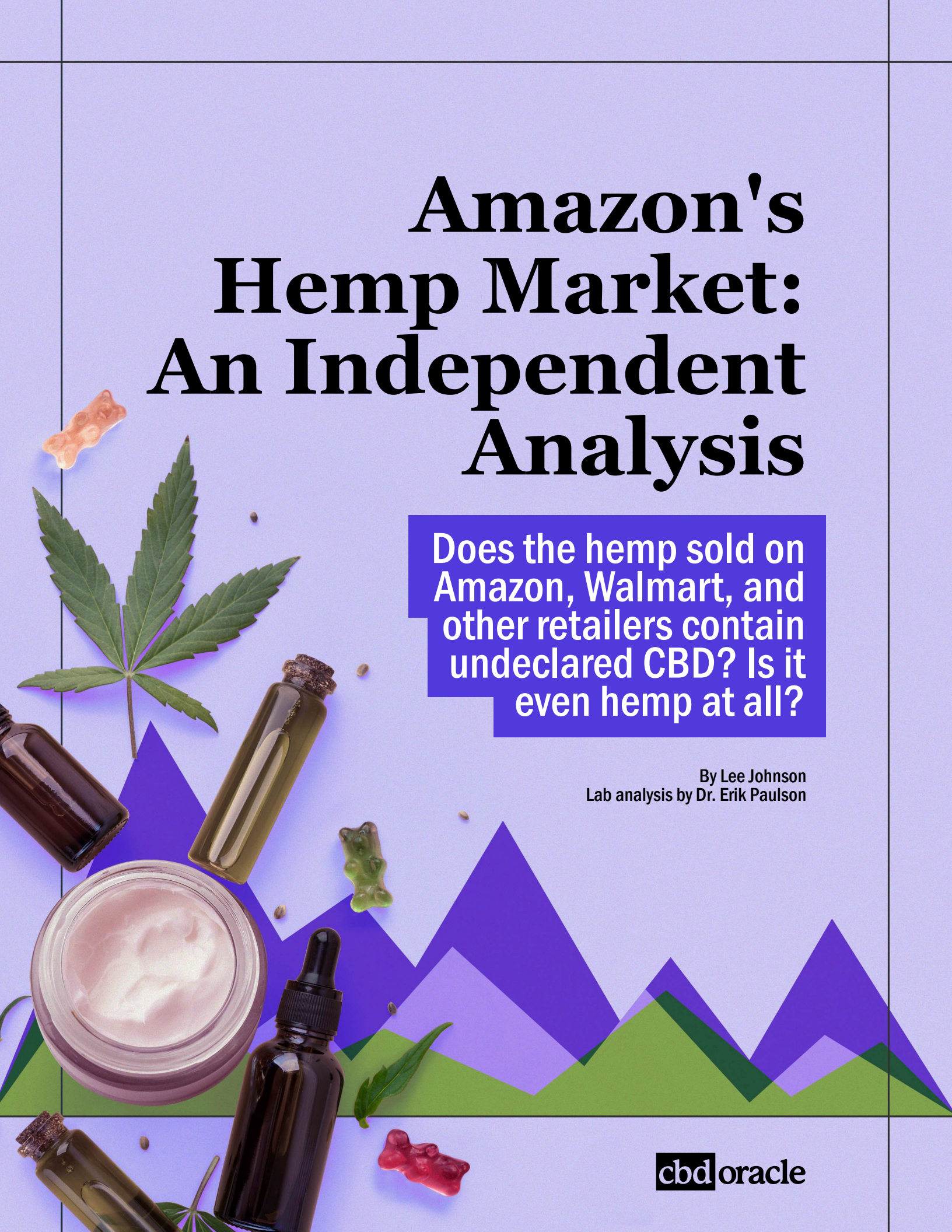


# Amazon's Hemp Market: An Independent Analysis

Does the hemp sold on  
Amazon, Walmart, and  
other retailers contain  
undeclared CBD? Is it  
even hemp at all?

By Lee Johnson  
Lab analysis by Dr. Erik Paulson





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# Abstract

## Background

Amazon policy bans CBD in most product types, but there are many “hemp gummies” sold on the platform that may contain CBD or other cannabinoids

## Method

CBD Oracle purchased 56 hemp products sold by Amazon, eBay, Walmart, Alibaba, and other retailers, and had them lab tested by InfiniteCAL Labs to determine their contents. The marketing of the products was also analyzed for unapproved medical claims and other issues.

## Results

30% of products contained undeclared CBD, and 36% of products contained no hemp at all. Three products contained large doses of delta-8 THC. Around half of all product pages made an unapproved medical claim.

## Conclusion

Amazon’s CBD policy is poorly enforced, which has led to a multitude of misleading, low-quality products flooding the marketplace. Many of these products are in violation of state and federal laws.



# Background

Hemp was made legal to sell for commercial purposes in the US with the passage of the 2018 Farm Bill. This law established that any product of a Cannabis sativa plant with less than 0.3% delta-9 THC by dry weight is classified as a “hemp” product. While current issues span far beyond CBD, with novel cannabinoids like delta-8 THC taking much of the recent attention, the CBD industry was front and center when this bill was passed.

The massive online retailer Amazon functions as a marketplace for third-party sellers, and as such they had to contend with this issue after the Farm Bill passed. The company decided<sup>[1]</sup> that CBD products were not permitted to be sold on its platform, with later changes allowing CBD in the form of topical creams and lotions provided they comply with applicable laws and regulations. This means that products like CBD gummies are not permitted on the platform, regardless of their delta-9 THC content.

However, a simple search on Amazon for “cbd gummies” reveals many products. These are labeled as “hemp” but they make questionable promises of high doses of “hemp extract” and list benefits that a customer may expect from CBD, such as “calming” and “promoting sleep.” However, customers are not given clear and unambiguous information about what these products contain, and so are left to purchase “in the dark,” so to speak, with no assurance of what they’re actually buying or whether it can possibly have the promised effects.

**The goal of this investigation is to determine what these products contain and whether it matches what is promised to consumers.**

## 2018 Farm Bill

Classifies any product of a Cannabis sativa plant with less than 0.3% delta-9 THC by dry weight as a “hemp” product.



Amazon does not permit CBD products to be sold on its platform



However, a simple search for “cbd gummies” reveals many products.





# Methodology

CBD Oracle purchased 56 popular hemp products from Amazon's online marketplace in December 2023 and January 2024. These products were chosen based on a search on the platform for "cbd gummies," "hemp" and similar terms used by some brands (e.g. "delta gummies"), as well as some products from specific brands such as GummiMi that CBD Oracle was aware of from initial research.

In total, there were 45 gummies, 8 tinctures, 2 topical creams, and one pack of mints.

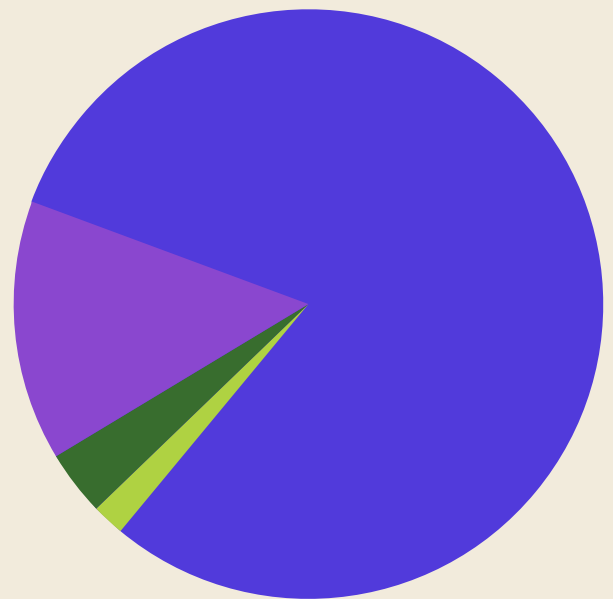
## 56 Hemp Products

45 Gummies

8 Tinctures

2 Topical Creams

1 Pack of Mints



## Lab Testing

These products were sent, unopened, to InfiniteCAL Labs for lab testing. Full scientific details of the testing methodology are [available here](#).

## Cannabinoid Potency Testing

Each product was tested for cannabinoids and their potency.

Each product was tested for cannabinoids and their potency. In particular, the testing looks for  $\Delta^9$ -THC,  $\Delta^8$ -THC, CBD, THCa, CBDa, CBG, CBGA, CBN, THCV, CBDV and CBC. This was done using ultra high performance liquid chromatography with a diode array detector (UHPLC-DAD), after being homogenized and mixed with an appropriate solvent.

## Gas Chromatography-Mass Spectrometry Testing

Products which were confirmed by standard potency testing to contain no cannabinoids were sent for further testing by GC-MS/MS (gas chromatography, tandem mass spectrometry).

This was to identify if they contain any hemp oil at all, because they may contain cannabinoid-free hempseed oil.

If this wasn't the case, it enabled InfiniteCAL to determine exactly what the products contained.

## Safety Testing

Five initial products were also submitted for safety testing.

The methodology of these varies for specific tests: pesticides and mycotoxins (combined GC-MS/MS and LC-MS/MS), heavy metals (inductively coupled plasma mass spectrometry, ICP-MS), residual solvents (headspace gas chromatography mass spectrometry, HS-GC-MS), microbials (real-time polymerase chain reaction, qPCR) and foreign materials (by eye and using a digital microscope magnifier).





## Market Analysis

As well as analyzing the products themselves, CBD Oracle also looked into the marketing of the hemp products. In particular, we investigated whether products came with a certificate of analysis (COA) from the company, whether listing complied with the INFORM Consumers Act and whether they made any unapproved medical claims. We also estimated the size of the overall hemp market on Amazon.

## Advertised vs. Confirmed Dosages

We looked at the dosages advertised by the hemp products and compared these with the quantities of cannabinoids determined by lab testing. In this analysis, we assumed the advertised dosage referred to cannabinoid content, rather than “hemp” content, although these dosages generally don’t specify what they’re referring to. Anything within 10% of the detected amount was considered an accurate dosage.

Additionally, where a unit was not specified, the dosage was taken to be in milligrams, which is standard practice for the hemp industry and would likely be assumed by most consumers.



# Results

## Lab Testing



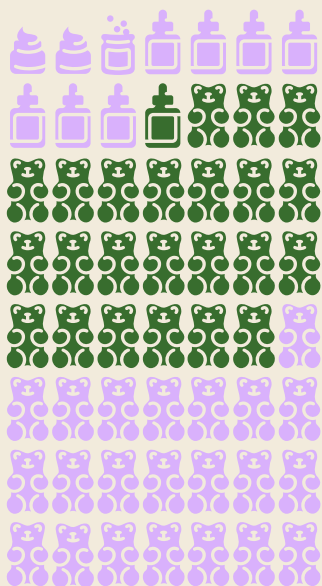
**30%**  
of Products  
Contained  
CBD



Of the 56 products tested, 30% contained CBD and were in violation of both Amazon policy and the federal Food, Drug and Cosmetic Act (FD&C Act).

Considering just the 17 products which were confirmed to contain CBD, they had an average of 547 mg per package, meaning the total for all the gummies or the whole bottle of oil. There was quite a lot of variation within this too, with one product containing just 28 mg per package and another containing 1,582 mg.

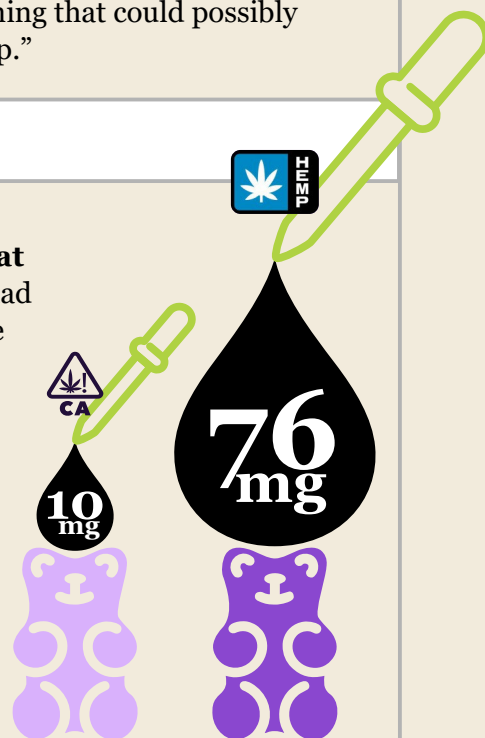
**43%**  
of Products  
Had No Hemp  
At All



Almost two-thirds of products (62.5%) contained no cannabinoids, and GC-MS/MS testing confirmed that over a third of products (43%) contained no hemp of any kind. This means there is no hemp seed oil, no hemp cannabinoids or anything that could possibly justify saying these products were “hemp.”

### Some Products Had Tons of Delta-8 THC

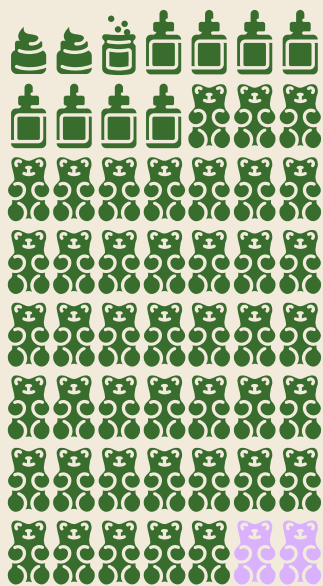
In total, **6 products contained THC at detectable levels**, and three of them had very high quantities of delta-8 THC. The three highest-THC products contained 641, 2,507 and 3,028 mg of THC, with the vast majority of this being delta-8 THC, which is banned in many states<sup>[2]</sup>. The most potent gummy contained 76 mg of THC per piece, well above what would be acceptable in a state-legal marijuana edible (even after accounting for the reduced potency of delta-8 relative to delta-9).





# 96%

of Products Did Not  
Provide Accurate  
Dosage Information



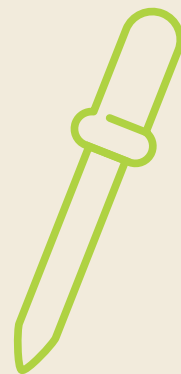
96% of products either didn't give dosage information or gave dosage information that was inaccurate. On average, the products in the study contained just 25% of the promised dosage in terms of cannabinoids. While the "dose" specified usually didn't say what exactly it measured, customers would likely assume this referred to cannabinoids in the context of a hemp gummy.

It is worth noting that in many cases, the promised dosage would have worked out to more than the total mass of the product, and so it was impossible for these claims to be accurate.



**Safety  
Testing  
Revealed  
No Issues**

All five products that were tested for safety came back with a clean lab report.



**of the  
promised  
dosage**  
on average,  
per product



## Market Analysis

The three COAs we found were not on Amazon and required visiting the companies' independent websites.

**95%**  
were not backed by a certificate of lab analysis (COA)



One of these COAs also didn't include safety testing, putting the percentage of products not tested at over 96%.



**Over Half**  
of Product  
Pages Made an  
Unapproved  
Medical Claim

Based on the FDA's guidance<sup>[3]</sup> on what constitutes a medical claim, 52% of product pages on Amazon made an unapproved medical claim about the product. In particular, products made claims about pain relief, anxiety relief, sleep promotion and even the common cold. While many products made medical claims verbally, it was more common for product pages to include an image of a body part (for example, a back or knee) with red patches or other signifiers of what the FDA calls "abnormal tissue" and to claim or imply the product provides relief from this.

It is worth noting that the most blatant medical claims were found on products intended for pets.




**50%**  
of Product Listings  
Had INFORM  
Consumers Act  
Violations<sup>[4]</sup>

This bill requires that online marketplaces collect information about sellers and in some cases, disclose it to consumers in a conspicuous way. In particular, if the seller earns more than \$20k in a 12-month period, the marketplace must provide customers with a method of having "direct, unhindered communication" with the seller. 50% of products met this income threshold without providing a method of communication on their product pages or in order confirmations, as required by the Act.



These violations could cost Amazon up to \$1.3 million, at \$50,120 per offense.



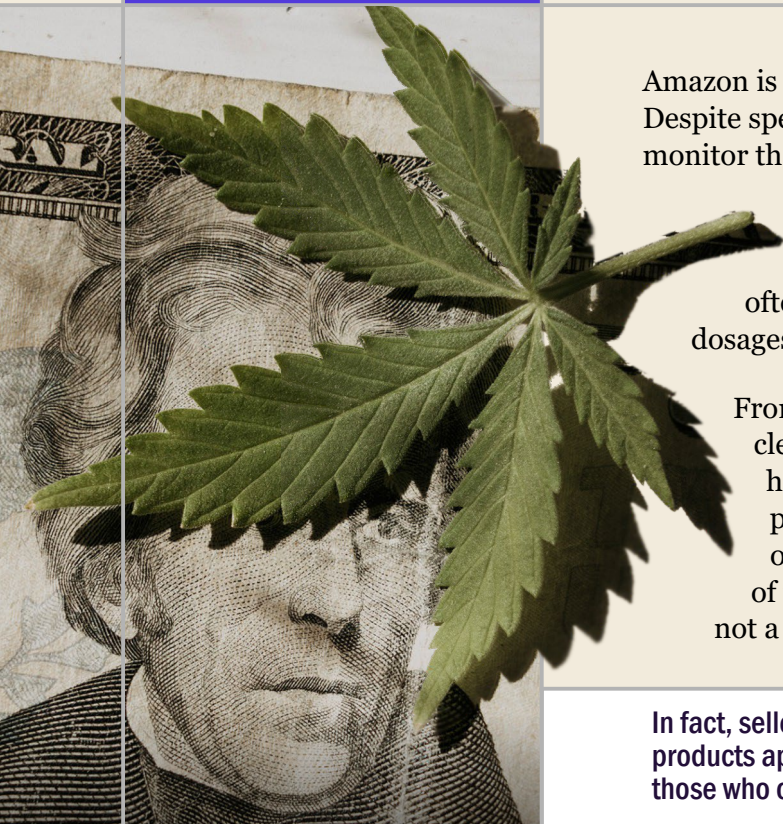


# \$64 Million

## Amazon's Hemp Market Estimate

Based on the information displayed by Amazon, the subset of products included in this analysis and other products identified through searches, we estimate that Amazon's hemp market generates approximately \$64 million in revenue per year. However, owing to the uncertainty in this method, there is a plausible range from \$36 million right up to \$125 million per year.

### Interpretation



Amazon is turning a blind eye to the hemp on its platform. Despite specifically hiring a company (LegitScript) to help monitor the marketplace for disallowed CBD products, CBD

Oracle was able to identify 17 products containing it from a sample of 56, not to mention others containing delta-8 THC. Moreover, these products often make unapproved medical claims, promise absurd dosages and may not even contain hemp at all.

From CBD Oracle's interviews with Amazon sellers, it's clear that there are enforcement actions taken against hemp sellers. However, the widespread availability of poorly-disguised CBD on the marketplace and the lack of action on multiple reports we made over the course of this investigation reveals that enforcement is either not a priority or is in serious need of more resources.

In fact, sellers who opt to be honest about the contents of their products appear to be at greater risk for enforcement actions than those who obfuscate the truth.

## Recommendations for Amazon, Walmart, and Other Online Retailers

Big e-commerce platforms like Amazon need to start taking this issue seriously. Whether they want it or not, there is CBD on their platform, and their current level of enforcement is not sufficient to remove it.

There are two approaches to solving this problem.

1.

Devote **more staff** to enforcement on hemp products, including either acting on the information given by LegitScript about offending products or replacing LegitScript with a more competent service, depending on where exactly the issue with the current system is. Solving the problem this way would require both **re-evaluating all currently available hemp products** and **continually monitoring the market** going forward.

2.

**Change Amazon policy on CBD to be more permissive.** Without strong enforcement, banning CBD only incentivizes lying. If Amazon allowed CBD but required that manufacturers used GMP-certified facilities and provided regular lab reports from ISO/IEC 17025:2017 accredited labs, scammers would be discouraged, and honest, high-quality companies would thrive. This approach would also require work on enforcement, but even with current enforcement levels, it would shift the balance in favor of reliable products that deliver what they offer.





# Conclusion

Amazon's hemp market is marred by dishonest actors selling low-quality products based on misleading claims, all the while being unclear about what exactly they're selling.

This situation persists because Amazon is not enforcing its rules in a consistent fashion and it appears not to question products that claim to be "hemp" without elaborating on exactly what that means.

Customers are given no certainty by the current market, honest sellers feel victimized and the main people making money are those willing to lie about their products and Amazon taking a cut of their sales.

## Data Availability

The full dataset from the analysis is [available in this spreadsheet](#).

The accompanying blog post has more information on the analysis and results:  
<https://cbdoracle.com/news/amazon-hemp-market-study/>

## References

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## About the Authors

### Lee Johnson

Lee Johnson is the senior editor at CBD Oracle, and has been covering science, vaping and cannabis for over a decade. He has a MS in Theoretical Physics from Uppsala University. At CBD Oracle, he focuses on research-driven deep dives into topics ranging from medical uses for CBD to industry and user statistics, as well as general guides and explainers for consumers.

### Erik Paulson, PhD

Erik Paulson, PhD is Lab Manager at InfiniteCAL, and was responsible for conducting the lab analyses and reporting the results. Erik earned his PhD in organometallic chemistry in a joint program operated by the University of California, San Diego and San Diego State University, after spending 5 years teaching high school chemistry. He has worked on developing and validating methods for potency, residual solvent, and terpenes analyses at InfiniteCAL since 2019.