WILEY RULE RESEARCH
Report No. 1 · November 2026

The Cost of Looking Away

Poisonings, emergency visits, deaths and children exposed

Concentrated 7-OH, intoxicating hemp, lab-made cannabinoids and illegal flavored disposable vapes are already in US poison center logs, emergency rooms and death records. This national report documents that harm, and how the United States can restore the promise of honest labels and safe products.

50 **of 30,665**
orders to stop selling, out of 30,665 FDA retail violations, Oct 2024 to Oct 2026

7,699
nicotine vape exposures in children 5 and under, 2024

3,434
kratom poison center exposures in 2025, up from 258 in 2015

233
kratom-associated deaths reported to poison centers, 2015 to 2025

Dr. Harvey W. Wiley (1844 to 1930). Harris & Ewing, Library of Congress, LCCN 2016862478 (public domain).

WILEY RULE RESEARCH
Report No. 1

TITLE
The Cost of Looking Away: Poisonings, emergency visits, deaths and children exposed

SERIES
Wiley Rule Research, Report No. 1

VERSION
Version 1.0

PUBLISHED
November 20, 2026

ONLINE
thewileyrule.org/reports/the-cost-of-looking-away

DATA
thewileyrule.org/data

CONTACT
thewileyrule.org/contact

CORRECTIONS
thewileyrule.org/corrections

COVER PHOTO
Dr. Harvey W. Wiley (1844 to 1930). Harris & Ewing, Library of Congress, LCCN 2016862478 (public domain).

About The Wiley Rule

> *If it goes in our bodies, prove it's safe and say what's in it.*

The Wiley Rule is a national nonprofit that works for strong food and drug policy in the United States: sound regulation, proof of safety before a product reaches a shelf, and clear, honest labels. We follow the line from Harvey Wiley's 1906 law to the gaps that exist today, including those left by the 1994 Dietary Supplement Health and Education Act. The sharpest current examples are new synthetic and concentrated drugs, such as concentrated 7-OH, kratom products, intoxicating hemp-derived products and illegal disposable vapes, sold in smoke shops, convenience stores, gas stations and online. Through careful, nonpartisan science and public education, we explain the chemistry and the evidence, show the real risks of these products, and show how regulatory gaps let them reach store shelves without proof they are safe or contain what they claim. We share what we learn with the public, schools, health professionals and public officials, and we speak up for common-sense safeguards.

The Wiley Rule, Inc. is a 501(c)(3) tax-exempt public charity (EIN 43-2466269), effective October 16, 2026.

About this report

Every figure links to a public source in Appendix B. Allegations are labeled as allegations. The Wiley Rule is non-partisan; it does not endorse candidates or parties.

Data availability

The datasets behind this report are free to download and query at thewileyrule.org/data, under the Creative Commons Attribution 4.0 International license (CC BY 4.0). Each row keeps its record type and a link to its source.

Suggested citation

The Wiley Rule. 2026. *The Cost of Looking Away: Poisonings, emergency visits, deaths and children exposed*. Wiley Rule Research, Report No. 1. Version 1.0, November 20, 2026. https://thewileyrule.org/reports/the-cost-of-looking-away

© 2026 The Wiley Rule, Inc. Contact us through thewileyrule.org/contact.

Contents

	Key findings	4
1	Executive summary	6
2	Wiley's promise and its erosion, 1883 to today	8
3	The market today	11
4	The chemistry	14
5	Label versus lab	28
6	Human cost	31
7	The cost of inaction	36
8	The federal agencies' record	38
9	The ban-then-replace cycle	42
10	The states	47
11	The United States versus the world	51
12	Who is behind it	56
13	Where it is sold	74
14	Who supplies it: the network	80
15	Illegal but unenforced	89
16	Kids and young people	97
17	The fix: proof of safety before sale	99
18	Recommendations by audience	101
19	Methods, data and limits	103

APPENDICES

A	State scorecard	105
B	Sources	107
C	Data access	123
D	Register of FDA kratom import alert listings	124
E	State by state: banned, sold, enforced	127

Key findings

01 Harm is rising.

US poison centers logged 258[1] kratom exposures in 2015 and 3,434[1] in 2025, with 233[1] deaths reported across those years, a more than tenfold rise in reports per million drug exposures.[1] 7-OH exposures in the first half of 2026 already exceed all of 2025.[2]

02 Almost no violation stops a sale.

Out of 30,665 FDA retail violations from October 2024 to October 2026, just 50 led to an order to stop selling. 22,741 ended in a warning letter and 7,874 in a civil money penalty action.[3]

03 Small children are paying for it.

7,699[4] nicotine vape and e-liquid exposures in children age 5 and under in 2024, up from 7,074[5] in 2023. In delta-8 cases, children under 6 made up 30.4%[6] of exposures and 57.8%[6] of critical-care admissions. FDA reported that 41[7] percent of 2,362[7] delta-8 exposures from January 2021 to February 2022 involved patients under 18.

04 They are sold where people buy gas and snacks.

Judging by retailer names, about 52 percent of FDA retail violations were at gas stations and convenience stores. 71.5 percent of 520 tobacco and vape shops surveyed nationally said they sold kratom,[8] and at least 542 store addresses had two or more FDA e-cigarette violation decisions in two years.[3]

05 Illegal on paper, unenforced in practice.

In 37 of the 47 jurisdictions that ban at least one of these products, we found no public enforcement record for at least one banned product; Oklahoma, Rhode Island and Virginia each have three banned product groups with none. FDA has filed penalty complaints against 192 retailers for unauthorized products, about 0.05 percent of at least 380,000 tobacco retailers,[9][10] and its last unauthorized-product charge at retail was decided on December 11, 2025.[3]

06 The supply chain is on the public record.

Government and court records link 412 companies, people, brands and enforcement actions through 446 sourced links, including a Kansas City 7-OH hub, a 7-OH brand traced from California to Charlotte smoke shops, and vape distributors that kept selling for years after FDA warning letters (Section 14). FDA kratom import alerts list 110 entries in 6 countries (Appendix D). A listing, complaint or suit is not a finding of guilt.

07 Enforcement is mostly letters.

FDA issued 187,071 marketing denial orders for e-cigarettes in FY2025[11] and has authorized 48,[12] but filed 12 injunction complaints and 14 manufacturer penalty complaints that year.[13] Delta-8 sellers received 23 FDA warning letters from 2022 to 2025 with no follow-on court action that we could find (Section 8).

08 Concentrated 7-OH is a different product from kratom leaf.

7-OH is less than 2 percent of leaf alkaloids,[14] but tablets average about 31 morphine milligram equivalents per serving, against 2.7 for powders.[15]

09 The chemistry is traceable, and it is moving toward stronger compounds.

7-OH, MGPI and the lab-made MGM-15 and MGM-16 all bind the mu-opioid receptor far more tightly than leaf mitragynine in published assays, and DEA placed MGPI, MGM-15 and MGM-16 in Schedule I in August 2026.[16] Section 4 maps the structures, receptor data and metabolism from PubChem and peer-reviewed sources.

10 Labels do not match the lab.

All 27 delta-8 vapes tested were inaccurately labeled,[17] 45 percent of disposable vape nicotine samples were off their label by more than 10 percent,[18] and half of low-THC cannabis samples in one study secretly held a synthetic cannabinoid.[19]

11 The products changed faster than the law.

UNODC has now logged 1,525[20] new psychoactive substances worldwide, and 50 new ones were first notified in the EU in 2025.[21] US law still lists drugs largely one at a time: DEA issued 5[22] temporary scheduling orders in 2026.

12 Regulation works where it is tried.

Delta-8 poison center exposure rates were 1.36 per 100,000 in unregulated states against 0.17 where it was banned,[6] and the UK and China saw large drops after broad, class-based controls.[23,24]

13 Money follows the gap.

Federal lobbying reported by kratom industry groups and companies grew from $180,000 in 2019 to $1.16 million in 2025, and by hemp industry groups and companies from $161,000 to $1.55 million (all issues reported, Lobbying Disclosure Act filings).[25] The record shows a concentrated supply chain: a few US brand owners and distributors, and overseas makers named in federal trade and import records.

> ***Out of 30,665 violations, just 50 led to an order to stop selling.***
>
> FDA retail compliance checks, October 1, 2024 to October 31, 2026[3]

01 SECTION 1

Executive summary

The damage already on the record

The damage is already in the record. US poison centers logged 258[1] kratom exposures in 2015 and 3,434[1] in 2025, with 233[1] deaths reported across those years; 79%[1] of those deaths involved more than one substance. America's Poison Centers counted 593[2] exposures involving 7-OH in all of 2025, and 901[2] in the first half of 2026; 38.8[2] percent of 7-OH-only exposures had a serious outcome. In 2024, poison centers recorded 7,699[4] nicotine e-cigarette and e-liquid exposures in children age 5 and under. Concentrated 7-OH, intoxicating hemp, lab-made cannabinoids and illegal flavored disposable vapes are sold in gas stations, smoke shops and online before anyone has shown they are safe.

> ***Out of 30,665 violations, just 50 led to an order to stop selling.***
>
> FDA retail compliance checks, October 1, 2024 to October 31, 2026[3]

Repeat violators keep selling. From October 2020 to October 2026, 49 stores were cited in five or more separate inspections within 36 months; only 11 were ever ordered to stop selling. None of the 1,067 stores fined two or more times since October 2024 has ever received an order to stop selling.[26]

Children and teenagers are in that same record. Nicotine vape and e-liquid exposures in children age 5 and under rose from 7,074[5] in 2023 to 7,699[4] in 2024. In 2025, about 1,440,000[27] middle and high school students were current e-cigarette users; among current youth users, 66.3[27] percent used disposables and 89.4[27] percent used flavored products. Poison centers recorded 4,925[6] exposures with delta-8 THC as the primary substance in 2021 and 2022; 15.5%[6] were admitted to a hospital unit, children under 6 made up 30.4%[6] of exposures and 57.8%[6] of critical-care admissions, and FDA reported that 41[7] percent of 2,362[7] delta-8 exposures from January 2021 to February 2022 involved patients under 18.

Death records and emergency rooms tell the same story, and they undercount. Florida medical examiners listed mitragynine as a cause in 182[28] deaths in 2023. A CDC review of overdose deaths from July 2016 to December 2017 found kratom was a cause in 59.9% (91 of 152)[29] of kratom-positive deaths. In Kansas, emergency visits tied to kratom and 7-OH totaled 224[30] from April 26 to July 18, 2026; after the state scheduled 7-OH, weekly visits rose from 11[30] to 46[30], and 85[30] percent involved withdrawal. 7-OH breaks down in stored blood, falling 89% lower after 112 days[31], so deaths may go unrecognized.[31]

Where these products are sold, the law is rarely enforced. FDA inspectors recorded 30,665 retail tobacco violations from October 2024 to October 2026, about 52 percent at gas stations and convenience stores; 22,741 ended in a warning letter and just 50 in an order to stop selling.[3] FDA's last charge against a retailer for selling an unauthorized tobacco product was decided on December 11, 2025. 47 of the 50 states and DC make at least one of these products illegal to sell, yet in 37 of them we found no public enforcement record for at least one banned product. The supply chain is not a mystery: government and court records link 412 companies, people, brands and enforcement actions, from foreign makers and importers to the stores (Sections 13 to 15).

In 1906 the United States promised that food and drugs sold to the public would be honestly labeled and free of hidden poisons. Harvey W. Wiley, the chemist who fought for that law, spent his last years warning that it was being taken apart.[32] The gap he described is the one these products now occupy.

The chemistry explains why. Each time one molecule is banned, a slightly different one takes its place, and the replacement is often stronger and less studied. 7-OH (7-hydroxymitragynine) is less than 2 percent of the alkaloids in natural kratom leaf,[14] yet FDA reports it is about 13 times more potent than morphine in a tissue assay.[14] Concentrated 7-OH tablets average about 31 MME[15] per serving. Lab tests now show what changed: more than 98 percent of 7-OH-labeled products analyzed in one 2026 study were of semi-synthetic origin,[33] and products sold as kratom extract held 22 to 75 mg of 7-OH per gram, against 0.05 to 0.15 mg in raw leaf.[34,35] Newer lab-modified analogs bind the opioid receptor more tightly still (Section 4).

While those numbers rose, federal agencies have acted, but mostly with paper. FDA has sent more than 1,000 warning letters to vape retailers,[36] while only 48[12] e-cigarettes are authorized and illegal flavored and single-use products make up most of the market by industry estimates.[37] Of the seven companies FDA warned about concentrated 7-OH in 2025, two faced a federal seizure.[38] States have filled part of the gap: 25 states and DC have acted on concentrated 7-OH (Appendix A), but laws differ at every border.

Other countries have shown a better way. The United Kingdom's 2016 blanket ban on unlisted psychoactive substances closed the open head-shop trade, and last-year use among 16 to 24 year olds fell from 2.6 to 1.2 percent.[23] After China placed all synthetic cannabinoids under class control in 2021, their share of new-substance samples fell from 68 to 9 percent.[24] The European Union requires novel foods to be authorized before they are sold.[39] New Zealand's experience is the warning: a pre-market system that let products sell on interim approval before safety was shown had to pull them.[40]

The cost of looking away is already written in these records. This report recommends one principle for the whole category: **proof of safety before sale**. Any product meant to be inhaled, swallowed or absorbed for a psychoactive or drug-like effect should need an approval, a registered listing and an honest, lab-verified label before it reaches a shelf. Anything that has not met that bar should be presumed unlawful, so regulators no longer have to chase each new molecule after people are hurt. We set out model statutory language, recommendations for Congress, federal agencies, states, retailers and platforms, and parents, and every number in this report links to its public source.

02 SECTION 2

Wiley's promise and its erosion, 1883 to today

How the burden of proof moved from sellers to the public, and what that has cost

The poisonings, emergency visits and deaths in this report did not appear from nowhere. They are what happens when the seller no longer has to prove a product is safe before it is sold.

Harvey Washington Wiley became chief chemist of the US Department of Agriculture in 1883. He measured what was in the food supply, tested common preservatives on volunteers in the "Poison Squad" studies, and helped write the 1906 Pure Food and Drugs Act, the first national law against misbranded and adulterated food and drugs.[41] The core of his idea was simple: the seller, not the shopper, should carry the burden of showing that a product is what it says and will not poison anyone.

The timeline below is the same sourced history shown on The Wiley Rule homepage. It shows a pattern. Strong protections came after disasters, such as the 1937 Elixir Sulfanilamide deaths that led to the 1938 requirement that new drugs be shown safe before sale. Each later carve-out, from the GRAS exception in 1958 to the 1994 supplement law and the 2018 hemp definition, moved a category of products back to "sell first, prove harm later."

1883 **A chemist takes on adulterated food.** Harvey W. Wiley becomes chief chemist of the U.S. Department of Agriculture, expands its studies of food adulteration and campaigns for a national food and drug law.[41,42]

1902 **The Poison Squad tests food chemicals on people.** With $5,000 from Congress, Wiley's volunteers eat measured doses of common preservatives such as borax and benzoate. The studies draw national attention to what is being added to food.[41,42,43]

1906 **The Pure Food and Drugs Act.** Congress bans interstate commerce in misbranded and adulterated foods, drinks and drugs. Wiley, called the father of the law, is put in charge of enforcing it.[41,42]

1908 **His findings are sent to a second board.** After fights over saccharin, benzoate of soda and other additives, the Secretary of Agriculture appoints a Referee Board led by Ira Remsen of Johns Hopkins to repeat Wiley's human trials. Several of the disputes end up in court.[42,44]

1911 **The Supreme Court narrows the law.** In U.S. v. Johnson, the Court rules that the 1906 Act bans false statements about a drug's ingredients but not false claims that it cures disease. Congress responds in 1912 with a fraud standard that is hard to prove.[41]

1912 **Wiley resigns.** Wiley leaves government in 1912 and spends the rest of his career working for consumers outside it.[41,42]

1929 **Wiley calls it "a crime against the food law".** A year before his death, Wiley publishes The History of a Crime Against the Food Law, his account of how the law meant to protect the public was weakened after it passed.[32,42]

1938 **After 107 deaths, drugs must be shown safe first.** In 1937, Elixir Sulfanilamide, made with the poison diethylene glycol, kills 107 people, many of them children. The 1938 Federal Food, Drug, and Cosmetic Act requires new drugs to be shown safe before sale.[41,45]

1958	**Food additives need approval, with a GRAS exception.** New food additives must be shown safe, except substances "generally recognized as safe" (GRAS). The exception becomes a main route for new ingredients. Companies can reach their own GRAS conclusions, and since 1997 telling FDA has been voluntary.[41,46,47]
1976	**The Proxmire Amendment.** The Vitamins and Minerals Amendments stop FDA from limiting the potency of vitamins and minerals in supplements, or from regulating them as drugs based on potency alone.[41]
1994	**Supplements can be sold without proof of safety.** The Dietary Supplement Health and Education Act classes supplements as food. Most can be sold without showing FDA they are safe or contain what the label says, and FDA must prove harm after they are on shelves.[41,48,49]
1997-2016	**GRAS becomes voluntary notice.** FDA proposes in 1997, and finalizes in 2016, a system in which companies may notify FDA of their own GRAS conclusions. Notification is voluntary, so a company can decide an ingredient is safe without telling FDA.[47,50]
2004	**Ephedra banned, years after reports of harm.** FDA declares supplements with ephedrine alkaloids adulterated because they present an unreasonable risk, citing a growing number of adverse events. It is the first ban of a supplement ingredient under DSHEA.[41,51]
2009-2024	**Premarket review for tobacco, and a flood of unauthorized disposables.** The 2009 Tobacco Control Act requires new tobacco products to get FDA authorization. In 2020, FDA's enforcement priorities targeted flavored cartridge e-cigarettes, not disposables. A Senate investigation counted over 5,800 disposable products on sale by 2024, up about 1,500 percent from early 2020.[41,52,53]
2011	**Food Safety Modernization Act.** FSMA gives FDA new food-safety powers, including mandatory recall authority. It does not add pre-market review or mandatory product listing for dietary supplements.[41,54]
2012	**Ban one molecule, meet the next.** Congress places 26 synthetic cannabinoids, cathinones and related drugs in Schedule I. Makers keep changing the chemistry: the UN's early warning system has seen up to 175 new psychoactive substances reported for the first time in a single year.[55,56]
2016	**Kratom scheduling announced, then withdrawn.** DEA announces its intent to temporarily place mitragynine and 7-OH in Schedule I (August 31), then withdraws the notice (October 13) and opens a comment period.[57,58]
2018	**A hemp definition opens a new market.** The 2018 Farm Bill defines hemp by its delta-9 THC content alone. Intoxicating hemp-derived products such as delta-8 spread under that definition, which Congress rewrote in November 2025.[59,60]
2024-2025	**A potent opioid, labeled "not for human consumption".** Concentrated 7-OH tablets, gummies and shots spread to gas stations, smoke shops and online stores, often marked "not for human consumption" or sold as something other than food or drugs. FDA calls them novel potent opioid products not proven safe for any use.[61,62]
2025	**FDA moves against concentrated 7-OH.** Two weeks after announcing warning letters to seven companies, FDA recommends that 7-OH be controlled under the Controlled Substances Act and states that 7-OH is not lawful in dietary supplements or conventional foods.[63,64]
2025-2026	**Congress rewrites the hemp definition.** A November 2025 law measures total THC and excludes lab-made and high-THC hemp products. The synthetic-cannabinoid exclusion takes effect November 12, 2026; the 0.4 milligram per container limit takes effect December 11, 2026.[59,60,65]
2026	**DEA proposes emergency scheduling.** DEA publishes a notice of intent to temporarily place 7-OH and mitragynine pseudoindoxyl above a set threshold in Schedule I, noting that no finding has been made that they are safe below it.[66]
Today	**One substance at a time.** 25 states and DC have acted on concentrated 7-OH, but the 1994 supplement framework, with no premarket safety review and no required product listing, is still in place. Each new product is handled after it is already on shelves.[41,67]

What changed, in one line. Drugs must be shown safe before sale. Most products in this report never enter that pathway. They are sold as "botanicals," hemp, novelty items, or goods marked "not for human consumption," and regulators must prove harm after they are already on shelves.[62]

03 SECTION 3

The market today

The products behind the poisonings, emergency visits and deaths

The products that produced those poisonings, hospital stays and deaths are not rare or hidden. They are sold in gas stations, smoke shops and online, often with flavors and packaging that appeal to young people, and most have never been authorized for sale.

Four product families dominate the problem this report addresses: concentrated 7-OH and other semi-synthetic kratom products; intoxicating hemp-derived and semi-synthetic cannabinoids such as delta-8 THC and HHC; lab-made drugs sold as legal highs, including synthetic cannabinoids, cathinones, tianeptine and nitazene opioids; and illegal flavored disposable vapes.

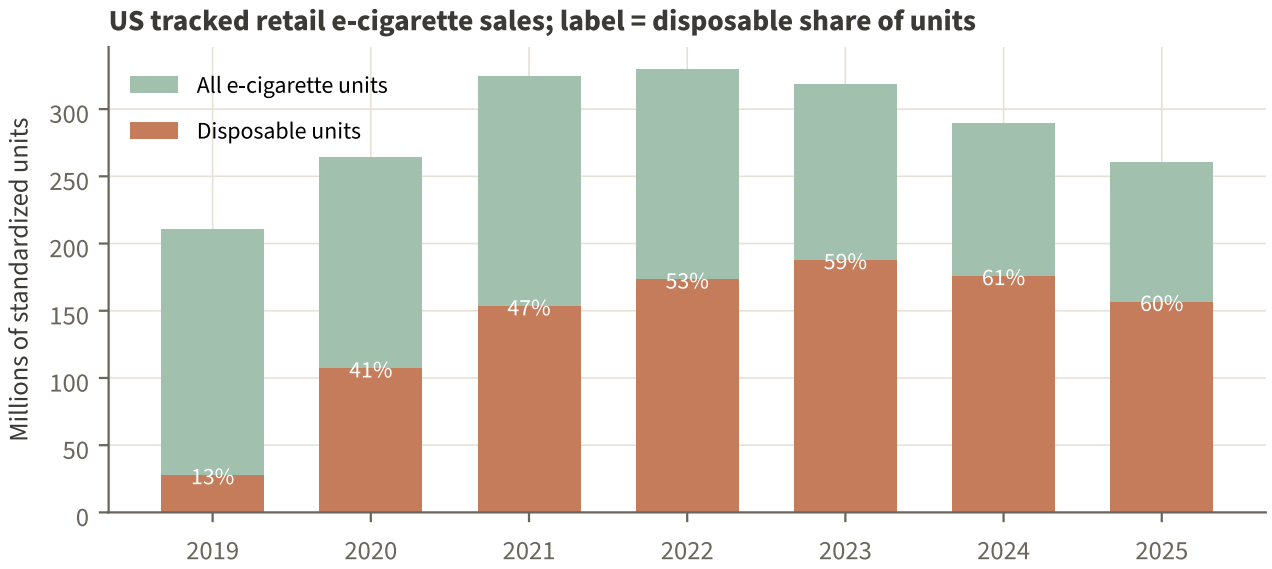
Illegal disposable vapes

In tracked US retail channels, disposables went from 13.2%[68] of e-cigarette units in 2019 to a majority of units in recent years.[68] In the 4 weeks ending December 2025, unauthorized products were 69.4%[69] of e-cigarette dollar sales, and 97.6%[69] of disposable dollar sales. A Senate investigation counted more than 5,800 disposable products on sale by 2024, up about 1,500 percent from early 2020.[53] FDA has authorized 48[12] e-cigarette products in total.

The same Senate report found that FDA-authorized products were just 2.4 percent[53] of the US vaping market in 2023. (This is a different figure from the 2.4 percent disposable share of 2019 shown in Exhibit 1.)

EXHIBIT 1

Disposables took over US e-cigarette sales



Source: The Wiley Rule research database[68]

Industry filings confirm the scale. In its 2025 annual report, British American Tobacco estimates that illegal flavored and single-use vapor products are about 70 percent[37] of the total US vapor market, a company estimate rather than an independent measurement. Altria reported $2,128 million in pre-tax e-vapor impairments in 2025 and attributes them partly to ineffective enforcement against illicit flavored disposables.[70] We cite these filings as evidence of market size only. The Wiley Rule does not target these companies' products in its outreach.

Concentrated 7-OH and semi-synthetic kratom

Researchers identified 304[71] distinct 7-OH and mitragynine pseudoindoxyl products for sale online between September 2024 and February 2025. Kratom use itself is widespread: about 5 million[1] Americans had ever used kratom as of 2023. Concentrated 7-OH tablets, gummies and shots spread through gas stations, smoke shops and online stores, often marked "not for human consumption."[61] Florida inspectors pulled 17,311[72] packages of 7-OH from stores in two months after the state's emergency rule.

Hemp-derived intoxicants

The 2018 Farm Bill defined hemp by delta-9 THC content alone, and intoxicating products such as delta-8 spread under that definition. Congress rewrote it in November 2025: the synthetic-cannabinoid exclusion took effect November 12, 2026, and a limit of 0.4 milligrams combined total per container[73] takes effect December 11, 2026.[65] In 2024, 12.3%[74] of 12th graders reported past-year delta-8 use.

Lab-made "legal highs"

UNODC has recorded 1,525[20] unique new psychoactive substances worldwide, and 755[75] were identified on the market in 2024 alone. Their average lifespan on the market is less than two years[20], which is shorter than a typical scheduling process. Tianeptine, an antidepressant not approved in the US and sold as a "supplement" or "nootropic," saw US poison center exposures rise 525%[76] in rate from 2018 to 2023.

04 SECTION 4

The chemistry

Why the replacements reaching people are stronger and less studied

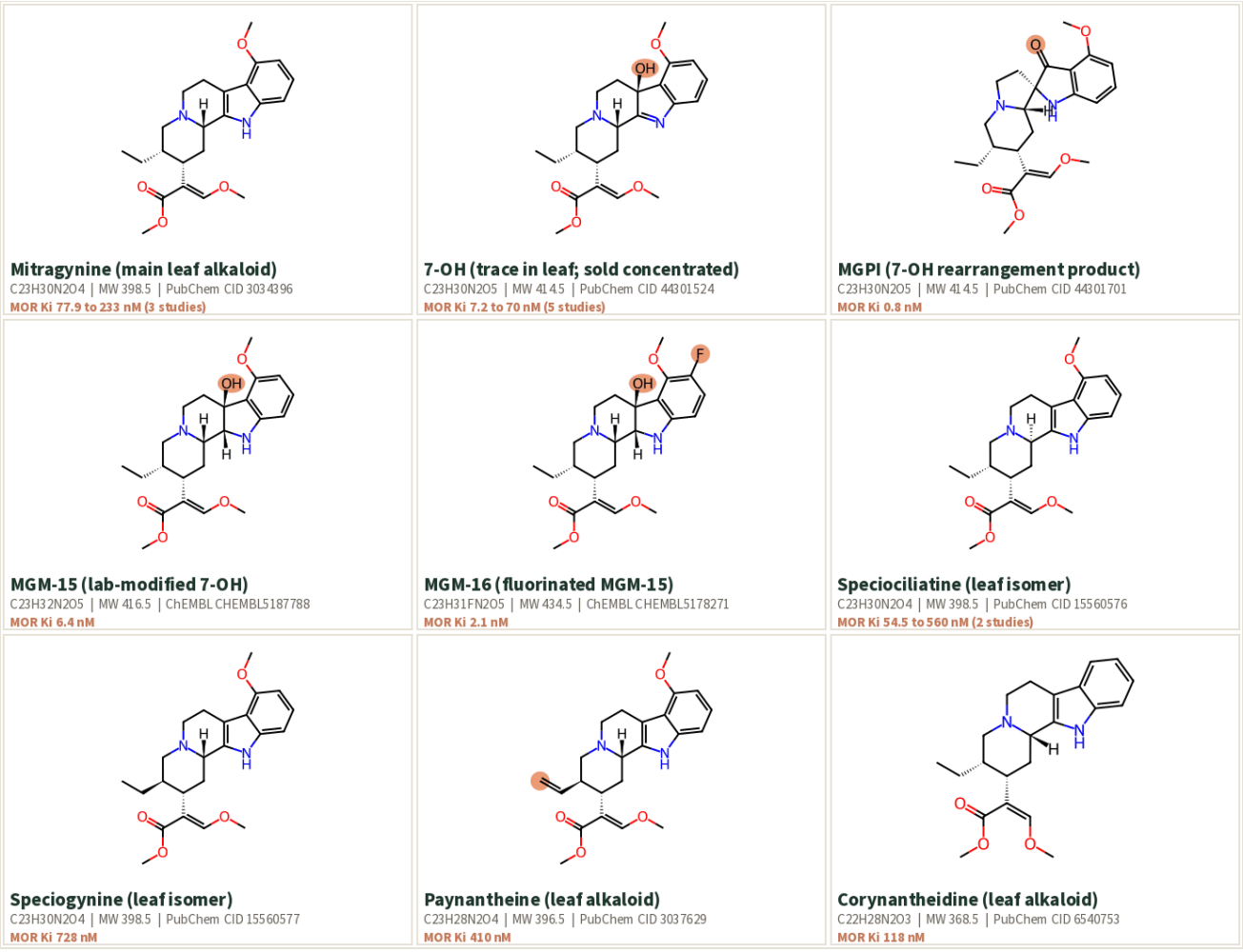
> Scope: this section stays at the level of effect, potency, contaminants and regulation. It does not describe how to make, extract, convert or dose any product.

The kratom family, molecule by molecule

Every structure below is drawn by software (RDKit) from the published isomeric SMILES string in PubChem, with the PubChem compound ID (CID) printed on the tile; MGM-15, MGM-16 and 3-dehydromitragynine have no PubChem record and are drawn from ChEMBL. Highlighted atoms are the ones that differ from mitragynine, the main leaf alkaloid, so a reader can see exactly what changed. Mu-opioid receptor (MOR) binding constants (Ki) are printed under each structure from peer-reviewed assays; a lower Ki means tighter binding.

EXHIBIT 2

The kratom alkaloid family: structures drawn from PubChem and ChEMBL, changed atoms highlighted

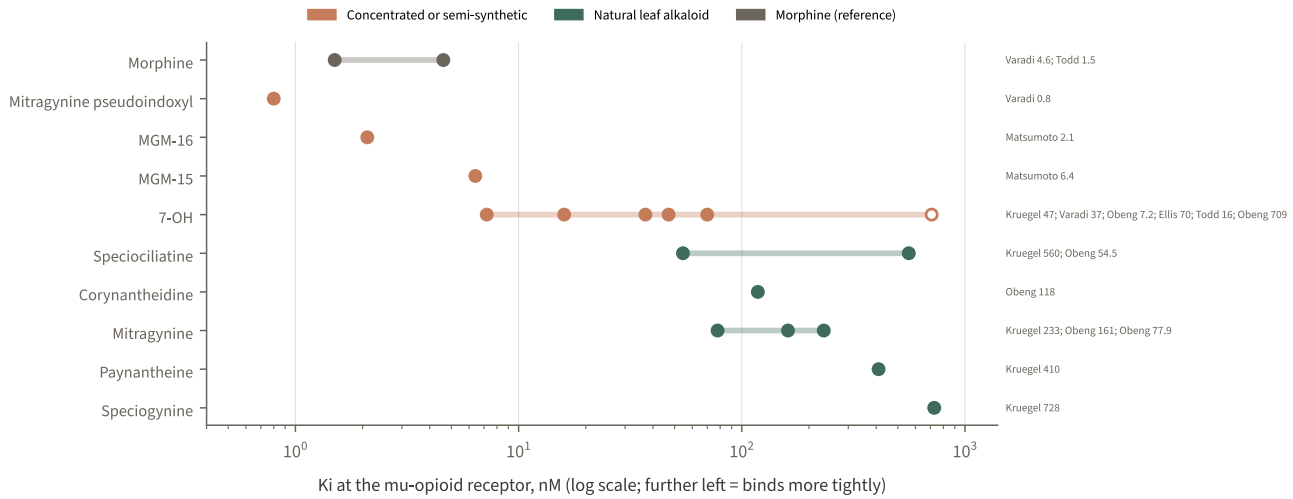


Source: structures rendered with RDKit from PubChem isomeric SMILES (CID on each tile) or ChEMBL; MOR Ki values from the peer-reviewed assays listed [77,78,79,80,81,82,83,84,85,86,87,88]

Three things stand out. First, 7-OH differs from mitragynine by one oxygen atom (C23H30N2O5 against C23H30N2O4), but binds the receptor about 9 times[88] more tightly. Second, MGPI, which forms from 7-OH in human plasma, binds more tightly than morphine in the same mouse-receptor assay (0.8 nM[89] against 4.6 nM[89] for morphine). Third, MGM-15 and MGM-16 are not found in the leaf. They were described in a 2014 pharmacology paper[90] and, more than a decade later, MGM-15 turned up in consumer products: tablets sold as a "research chemical" contained 10.9 mg per tablet (plus or minus 0.2)[91] of MGM-15 and no natural kratom alkaloids at all.

EXHIBIT 3

Mu-opioid receptor binding (Ki) by compound and study



Source: peer-reviewed binding assays (author and year on each point); open circle marks a value the authors flagged as an outlier[86,87,88,89,90,92,93]

Compound	MOR Ki (study, receptor source)	Potency vs morphine (assay)
Morphine	1.5 nM (Todd 2020, human MOR)[93]; 4.6 nM (Varadi 2016, mouse MOR)[89]	reference
Mitragynine	77.9 nM (Obeng 2021, human MOR)[88]; 161 nM (Obeng 2020, human MOR)[87]; 233 nM (Kruegel 2016, human MOR)[86]	about 0.13 times morphine (weaker) (modelled morphine-milligram-equivalent factor (geomean))[15]
7-OH	7.2 nM (Obeng 2020, human MOR)[87]; 16 nM (Todd 2020, human MOR)[93]; 37 nM (Varadi 2016, mouse MOR)[89]; 47 nM (Kruegel 2016, human MOR)[86]; 70 nM (Ellis 2020, human MOR)[92]; 709 nM (Obeng 2021, human MOR (authors' outlier))[88]	about 4.5 times morphine (IV respiratory depression in rats)[94]
Mitragynine pseudoindoxyl	0.8 nM (Varadi 2016, mouse MOR)[89]	about 20 times morphine (guinea-pig ileum (isolated tissue))[95]
MGM-15	6.4 nM (Matsumoto 2014, guinea-pig brain MOR)[90]	about 12 times morphine (guinea-pig ileum, derived from reported pD2 difference (about 1.1 log units))[90]
MGM-16	2.1 nM (Matsumoto 2014, guinea-pig brain MOR)[90]	about 240 times morphine (mouse tail-flick antinociception)[90]
Speciociliatine	54.5 nM (Obeng 2020, human MOR)[87]; 560 nM (Kruegel 2016, human MOR)[86]	not published
Corynantheidine	118 nM (Obeng 2020, human MOR)[87]	not published
Paynantheine	410 nM (Kruegel 2016, human MOR)[86]	not published
Speciogynine	728 nM (Kruegel 2016, human MOR)[86]	not published

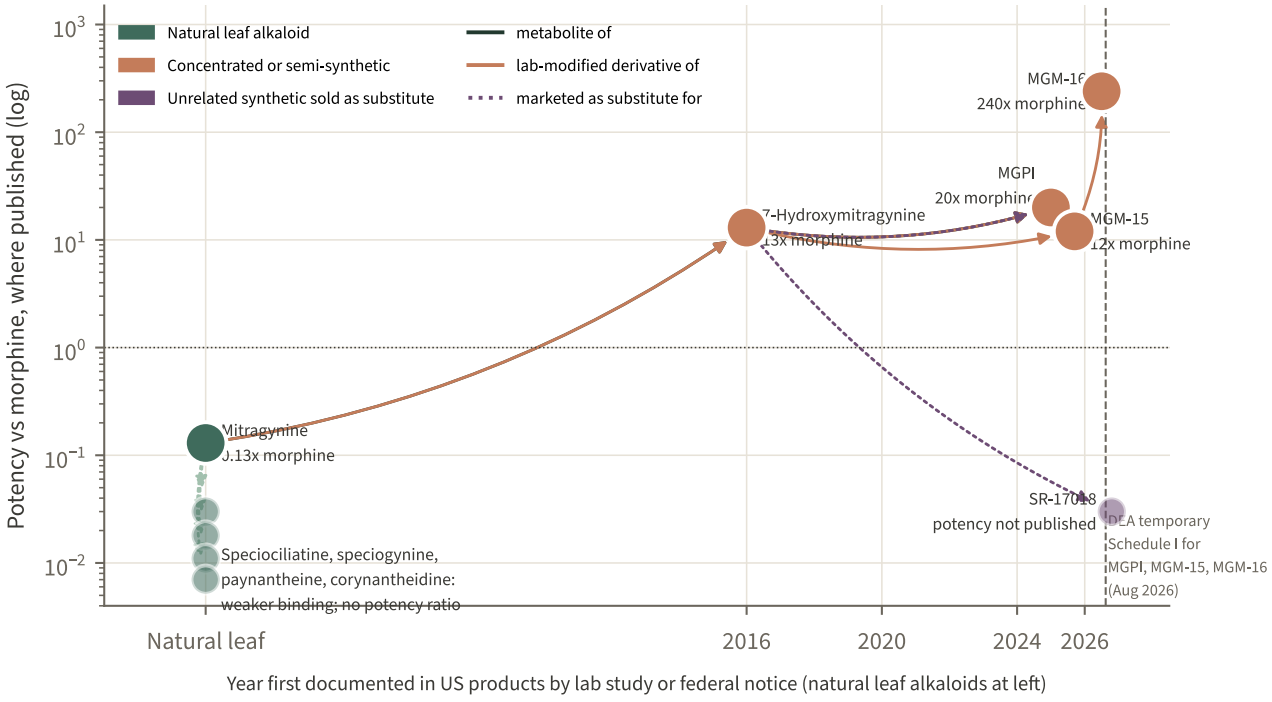
Ki values differ by laboratory, receptor source and method; ranges are shown, not averages. Potency figures are assay-specific and are not human dose equivalents.

Family tree: from leaf to lab

The family tree places each compound by the year it was first documented in US products, by lab study or federal notice, and by its potency relative to morphine where a published figure exists. The arrows show what the chemistry literature reports: which compounds are metabolites of which, which are lab-modified derivatives, and which unrelated synthetics have been marketed as substitutes. The trend runs up and to the right: every compound that followed leaf mitragynine into products is far stronger than it, and each arrived on shelves before any regulator had reviewed it.

EXHIBIT 4

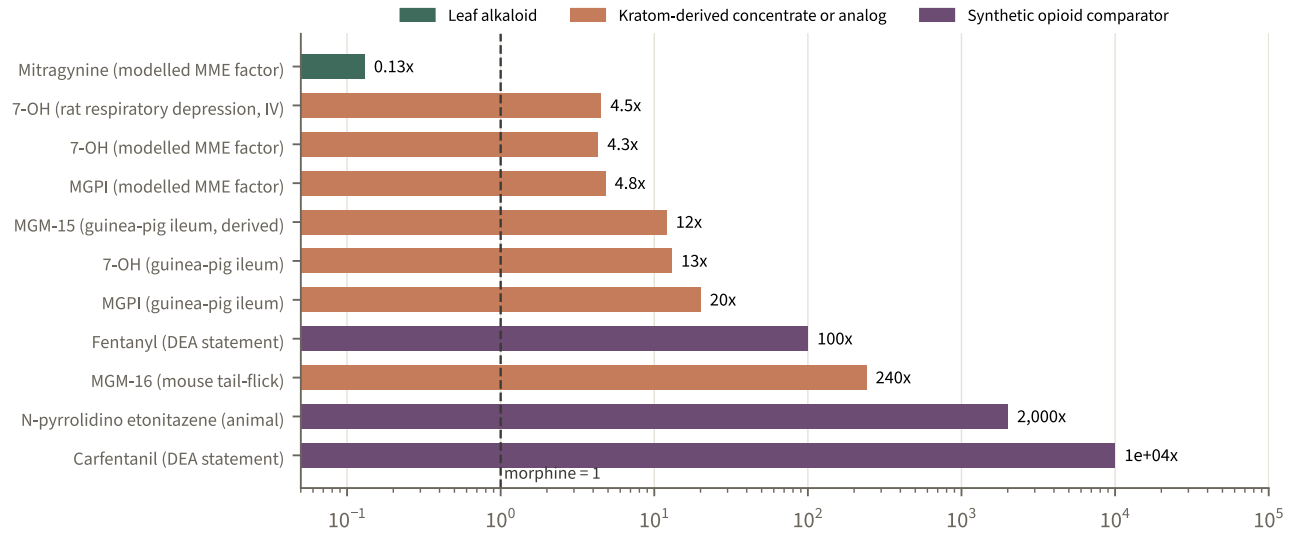
Family tree: from leaf alkaloid to lab-made opioid, by year documented in products and potency vs morphine



Source: The Wiley Rule chemistry graph (chem_nodes, chem_edges); potency and dates from the sources listed [14,15,16,71,90,91,95,96,97,98]

EXHIBIT 5

Published potency relative to morphine (assay-specific; not human dose equivalents)



Potency relative to morphine (log scale). Assays differ; these are not human dose equivalents.

Source: peer-reviewed assays, FDA and DEA statements as listed [14,15,90,94,95,99,100,101]

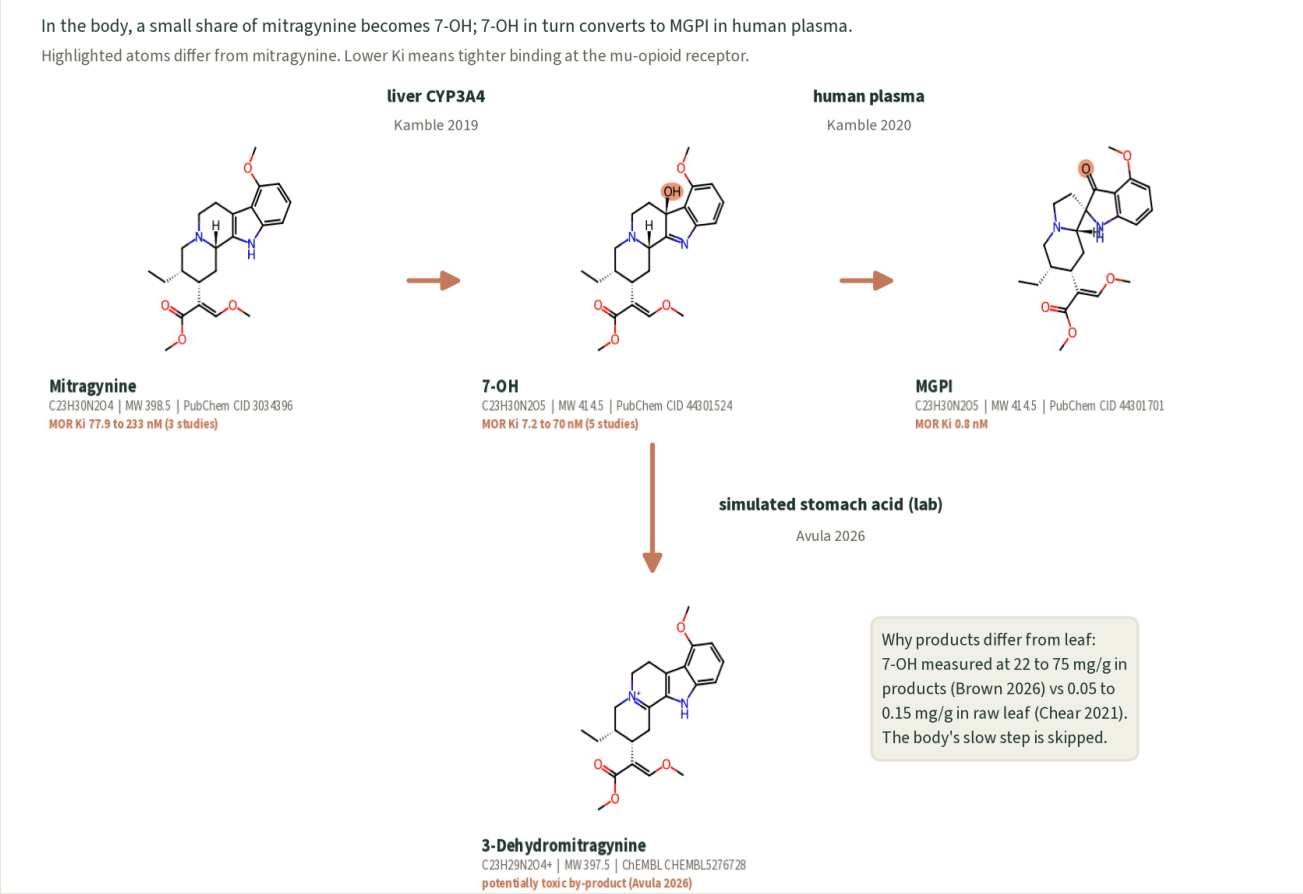
> Potency comparisons come from different assays (isolated tissue, animal respiratory depression, modelled morphine milligram equivalents). They show direction and scale, not human dose equivalence, and must not be read as dosing information.

What happens in the body

The liver enzyme CYP3A4 turns a small share of mitragynine into 7-OH. [102] In human plasma, 7-OH in turn converts into MGPI, which is more potent still. [103] In simulated stomach acid, 7-OH also degrades to 3-dehydromitragynine, which the authors describe as a potentially toxic by-product. [33] With leaf, the body's slow first step limits how much 7-OH is formed. Concentrated products skip that step.

EXHIBIT 6

What happens in the body and in the stomach: mitragynine to 7-OH to MGPI, and 7-OH degradation



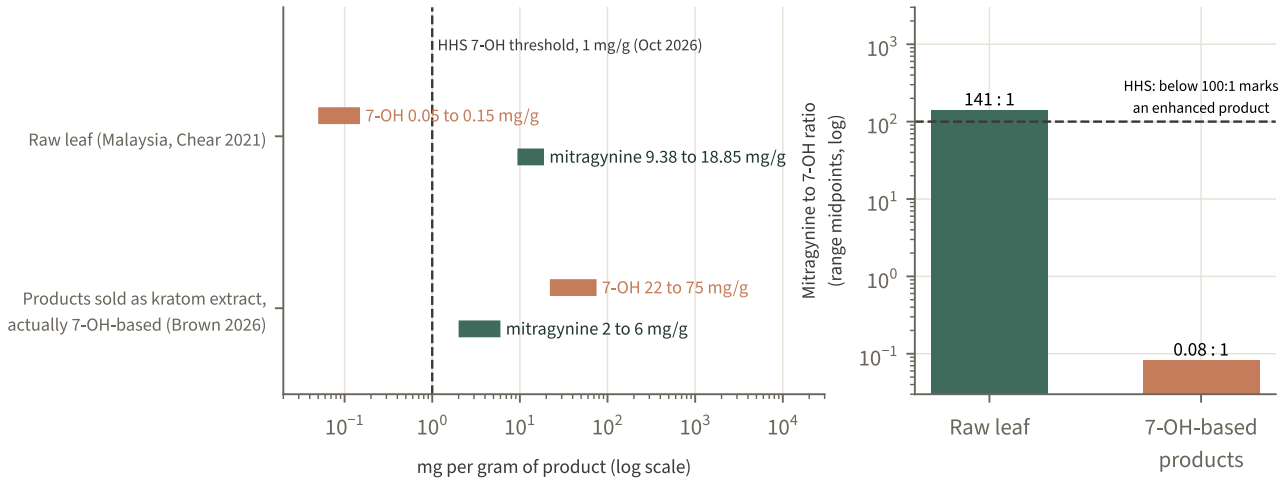
Source: Kamble 2019 (CYP3A4); Kamble 2020 (human plasma); Avula 2026 (simulated gastric conditions, lab study)[33,34,35,77,78,79,102,103,104]

Leaf versus product: what the lab measures

In raw Malaysian leaf, 7-OH was measured at 0.05 mg/g[35] to 0.15 mg/g[35], against 9.38 mg/g[35] to 18.85 mg/g[35] of mitragynine. In a 2026 AOAC study, products sold as "kratom extract" held 22 mg/g[34] to 75 mg/g[34] of 7-OH and only 2.0 mg/g[34] to 6.0 mg/g[34] of mitragynine. The ratio is inverted, which is the signature of an enhanced product. HHS has recommended treating products as enhanced above 1 mg/g; ratio 100:1[105] (mitragynine to 7-OH). In a survey of MGPI products, 71 percent of 51[98] also contained 7-OH and 69 percent[98] had a child-appealing flavor or scent. DEA's toxicology program has logged 85 cases, 55 fatal[106], from biological samples in 7-OH cases.

EXHIBIT 7

Leaf versus product: measured 7-OH and mitragynine, and the HHS enhanced-product line



Source: Chear 2021; Brown 2026 (AOAC); HHS recommendation (Oct 2026) [34,35,105]

Product tested	Measured content	Evidence
Raw kratom leaf	Mitragynine 9.38-18.85 mg/g; 7-OH 0.05-0.15 mg/g	lab analysis (peer reviewed) [35]
Raw kratom leaf (AOAC method)	Mitragynine 11.8 mg/g; 7-OH not detected (<0.004% w/w)	lab analysis [34]
Commercial 'kratom' products 2016 (8 products)	7-OH 109-509% above expected natural levels in 7 of 8	lab analysis [107]
Pressed pill, Florida store (news test, 2023)	7-OH 15 mg per pill	news investigation [108]
Products labeled 'kratom extract' but 7-OH-based	7-OH 22-75 mg/g (2.2-7.5%); mitragynine 2.0-6.0 mg/g; 5-28% above label	lab analysis [34]
Tablets, films, liquid shots	Alkaloid profiles vary; unlabeled alkaloids common; 7-OH and 3-dehydromitragynine frequently present	lab analysis [109]
38 commercial products (multiple forms)	7-OH and MGPI present in several tablet and capsule products; m/z 415 to 190 transition alone can give false-positive 7-OH	lab analysis [110]
MGM-labeled tablets	MGM-15 10.9 +/- 0.2 mg per tablet; no natural alkaloids	lab analysis [91]
Online marketplace, 304 products (Sep 2024-Feb 2025)	82.2% 7-OH-only chewable/sublingual tablets, shots or gummies; 14.5% 7-OH+MGPI; 3.3% MGPI-only;	market surveillance [111]
Online MGPI products (51)	71% MGPI+7-OH, 24% MGPI only; 76% chewable tablets, 18% liquids; 69% child-appealing flavor or scent; 63% bright colors	market surveillance [98]
Kava plus kratom products	Kava poison-center reports 203 in 2025, 30% (61) involved kratom; serious outcomes 32% vs 12% in 2000	surveillance [112]
Biological samples from 7-OH cases (DEA TOX)	Mean 7-OH 463 ng/mL; 85 cases, 55 fatal; co-detected fentanyl, bromazolam, ketamine	surveillance [106]
Postmortem blood (51 cases)	Mitragynine:7-OH ratio about 31 in femoral blood	forensic [113]

Product tested	Measured content	Evidence
Regulatory thresholds	7-OH above 1 mg/g solids or 1 mg/mL liquids, or mitragynine:7-OH below 100:1 (HHS, 9 Oct 2026); leaf excluded at 0.05% or less by dry weight (ACMT)	regulatory[105]

Lab measurements of product content. Vendor certificates, dosing statements and rows without an independent source are excluded.

Kratom: the danger is the concentrated metabolite

The human harm in this report has a chemical cause: each time one molecule is restricted, a slightly different, often stronger and less studied one takes its place, and it reaches people before anyone has measured what it does to them.

Mitragynine, the main alkaloid in kratom leaf, binds the mu-opioid receptor weakly. 7-OH has about 9 times its affinity[88] and more than 10 times[114] the affinity of morphine. FDA's 2025 assessment reports that 7-OH is more than 3-fold greater than morphine[14] in preclinical respiratory depression, the effect that makes opioids lethal. The body makes small amounts of 7-OH from mitragynine; in whole-leaf kratom the exposure ratio is about 0.15 to 0.31[115]. Concentrated products change that ratio. An emergency medicine journal reported a death tied to a tablet containing 29 mg per tablet[116], and a 2026 toxicology assessment put tablet products at an average of 31 MME[15] per serving, against 2.7 MME[15] for powders.

Natural leaf potency also varies widely, about about 0.3% to 3.5% by weight[117] mitragynine by weight, and commercial products range from 0.7% to 38.7% by weight[118]. Only lab testing tells a buyer what is inside. In 2016, 7 of 8 commercial kratom capsules tested held 109 to 520 percent more 7-OH than raw leaf.[96]

Synthetic cannabinoids: full agonists that keep changing shape

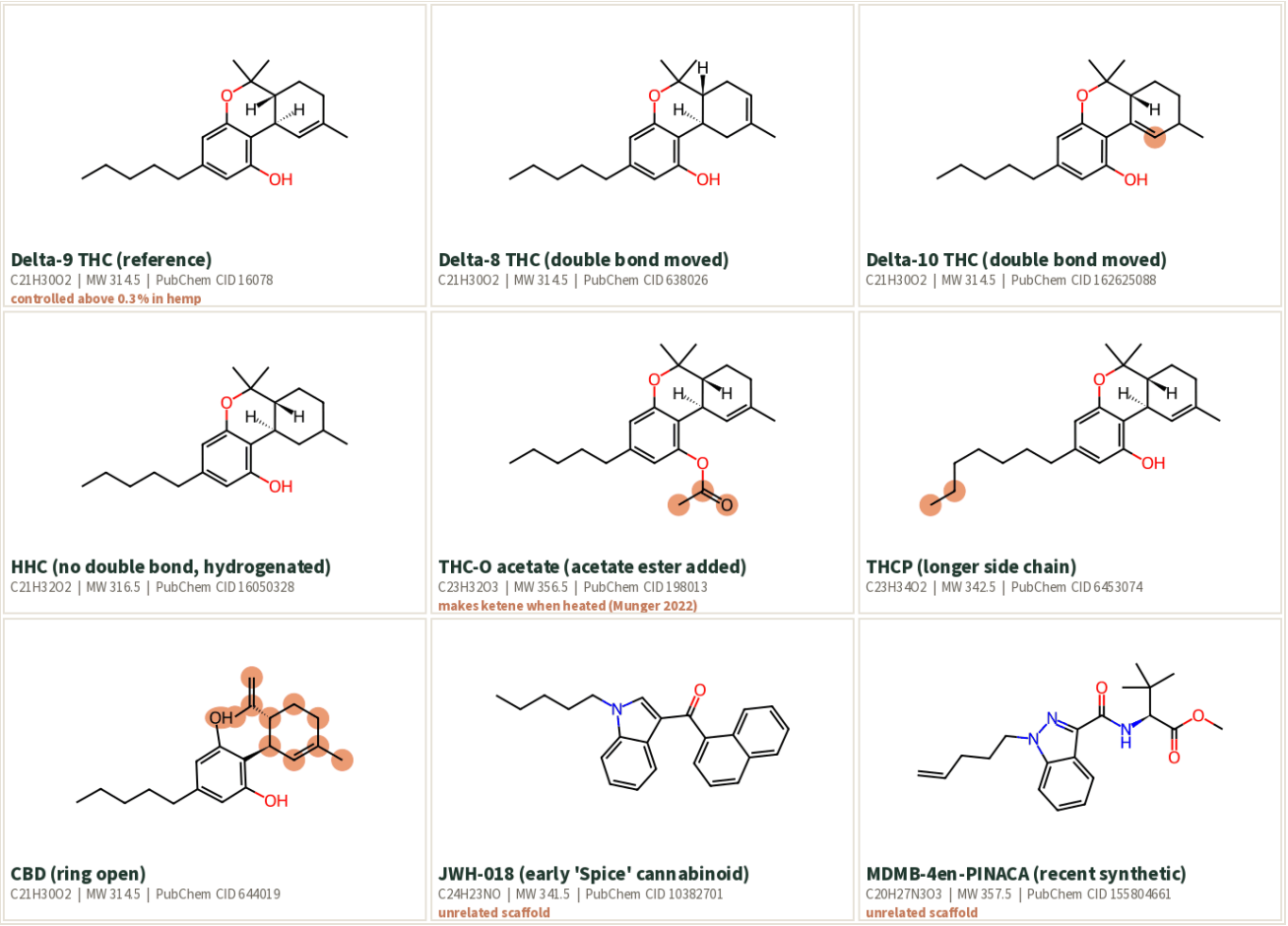
THC is a partial agonist at the CB1 receptor. Lab-made synthetic cannabinoids are full agonists; the strongest tested was about 260 times[119] more effective at CB1 than THC. Makers repeatedly altered structures to stay outside lists of banned chemicals.[120] Contamination adds its own harm: a 2018 Illinois outbreak of severe bleeding was tied to synthetic cannabinoids laced with a rat poison.[121]

Cannabinoids: one scaffold, many small edits

Delta-8 and delta-10 THC differ from delta-9 only in where one double bond sits; HHC removes it; THC-O adds an acetate group; THCP lengthens the side chain. The early "Spice" cannabinoid JWH-018 and the recent MDMB-4en-PINACA are built on unrelated scaffolds that were designed to hit the same receptor. The timeline shows how quickly each edit reached the market after the previous one was restricted.

EXHIBIT 8

Cannabinoids: small edits to the THC scaffold, and synthetic cannabinoids on unrelated scaffolds



Delta-9 THC (reference)
C21H30O2 | MW 314.5 | PubChem CID 16078
controlled above 0.3% in hemp

Delta-8 THC (double bond moved)
C21H30O2 | MW 314.5 | PubChem CID 638026

Delta-10 THC (double bond moved)
C21H30O2 | MW 314.5 | PubChem CID 162625088

HHC (no double bond, hydrogenated)
C21H32O2 | MW 316.5 | PubChem CID 16050328

THC-O acetate (acetate ester added)
C23H32O3 | MW 356.5 | PubChem CID 198013
makes ketene when heated (Munger 2022)

THCP (longer side chain)
C23H34O2 | MW 342.5 | PubChem CID 6453074

CBD (ring open)
C21H30O2 | MW 314.5 | PubChem CID 644019

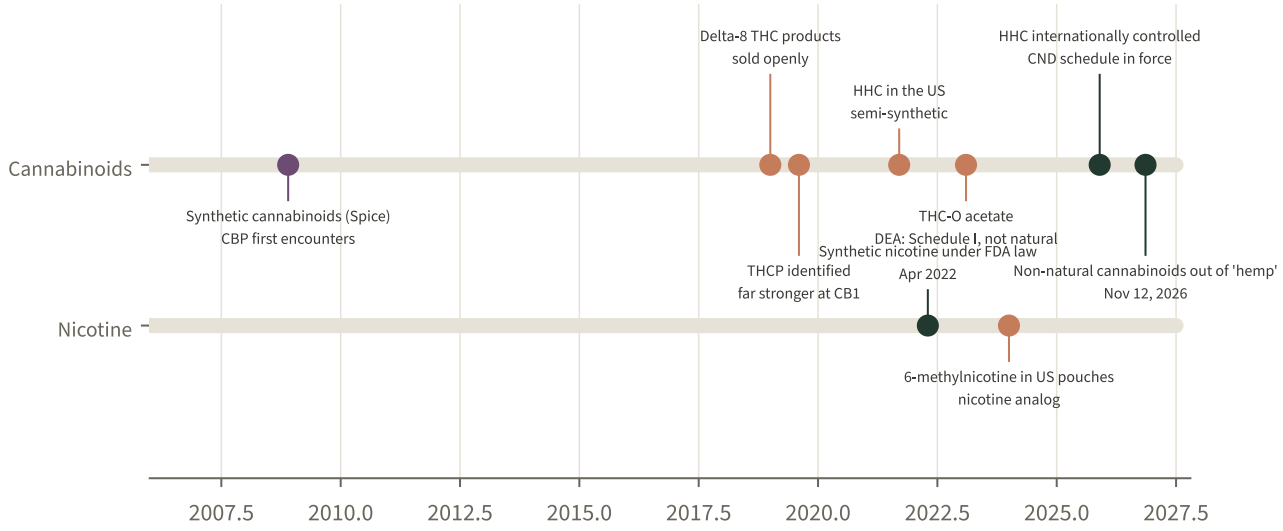
JWH-018 (early 'Spice' cannabinoid)
C24H23NO | MW 341.5 | PubChem CID 10382701
unrelated scaffold

MDMB-4en-PINACA (recent synthetic)
C20H27N3O3 | MW 357.5 | PubChem CID 155804661
unrelated scaffold

Source: structures rendered with RDKit from PubChem isomeric SMILES (CID on each tile) [122,123,124,125,126,127,128,129,130,131]

EXHIBIT 9

When each cannabinoid and nicotine variant appeared, and when the law moved



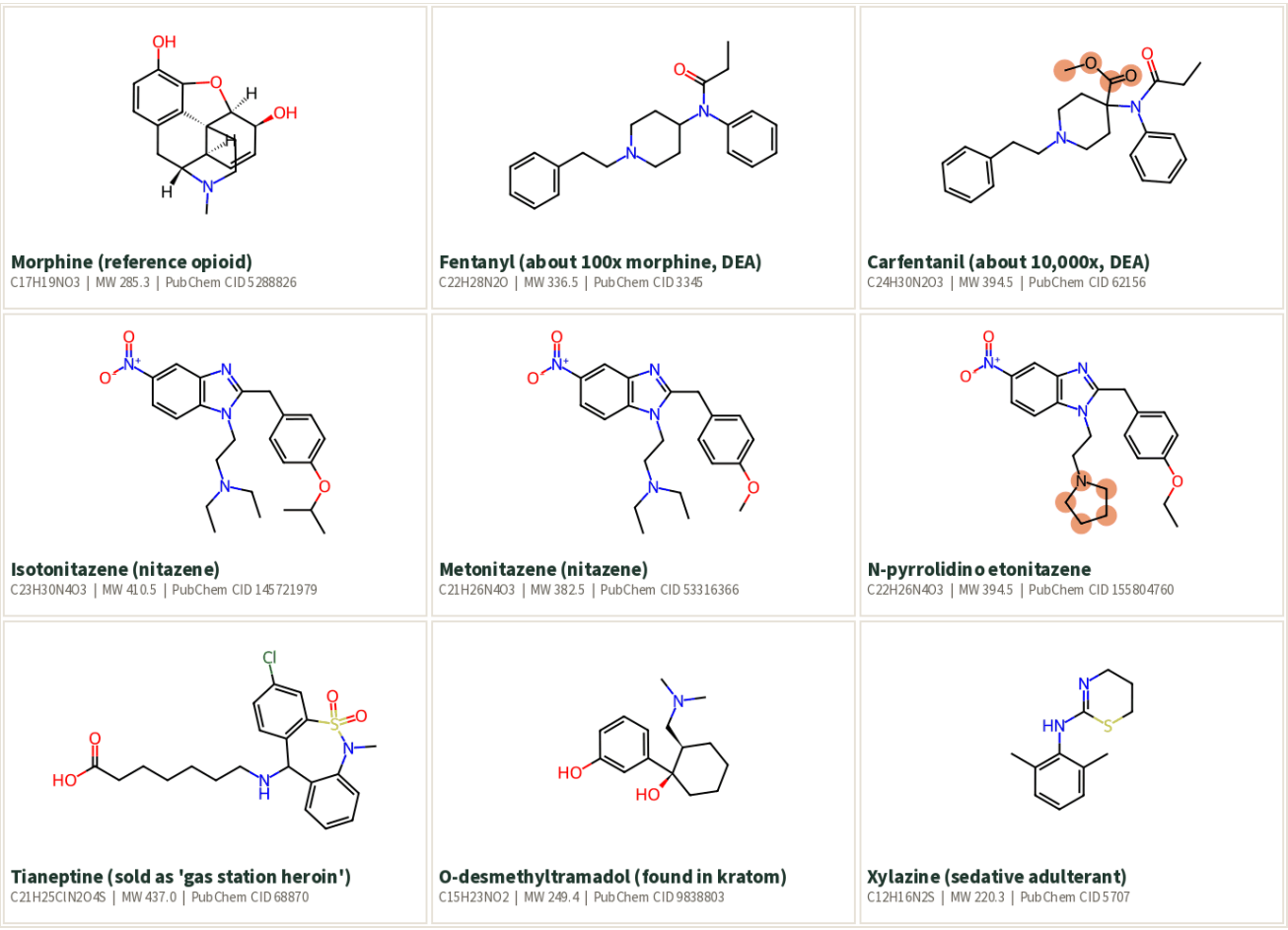
Source: The Wiley Rule timeline (sources listed) [73,132,133,134,135,136]

Nitazenes and fentanyl analogs: small tweaks, much stronger opioids

One nitazene, N-pyrrolidino etonitazene, was about 10 times [99] more potent than fentanyl and about 2,000 times [99] more potent than morphine in animals. These drugs come off the receptor slowly, so overdoses may need more naloxone. [137,138] After isotonitazene was scheduled, metonitazene replaced it. [139] Carfentanil-involved deaths rose about sevenfold [140] from early 2023 to mid-2024.

EXHIBIT 10

Opioid comparators and adulterants found alongside kratom-type products



Source: structures rendered with RDKit from PubChem isomeric SMILES (CID on each tile); potency statements from DEA [100,101,141,142,143,144,145,146,147,148,149]

Hemp-derived and semi-synthetic cannabinoids: unlabeled and sometimes stronger

Testing of 27 delta-8 vaporizers found none accurately labeled; they held unlabeled cutting agents, heavy metals and reaction byproducts.[17] THCP binds CB1 similar to a potent full agonist[132],[132] and vaping cannabinoid acetates can form the toxic gas ketene.[131]

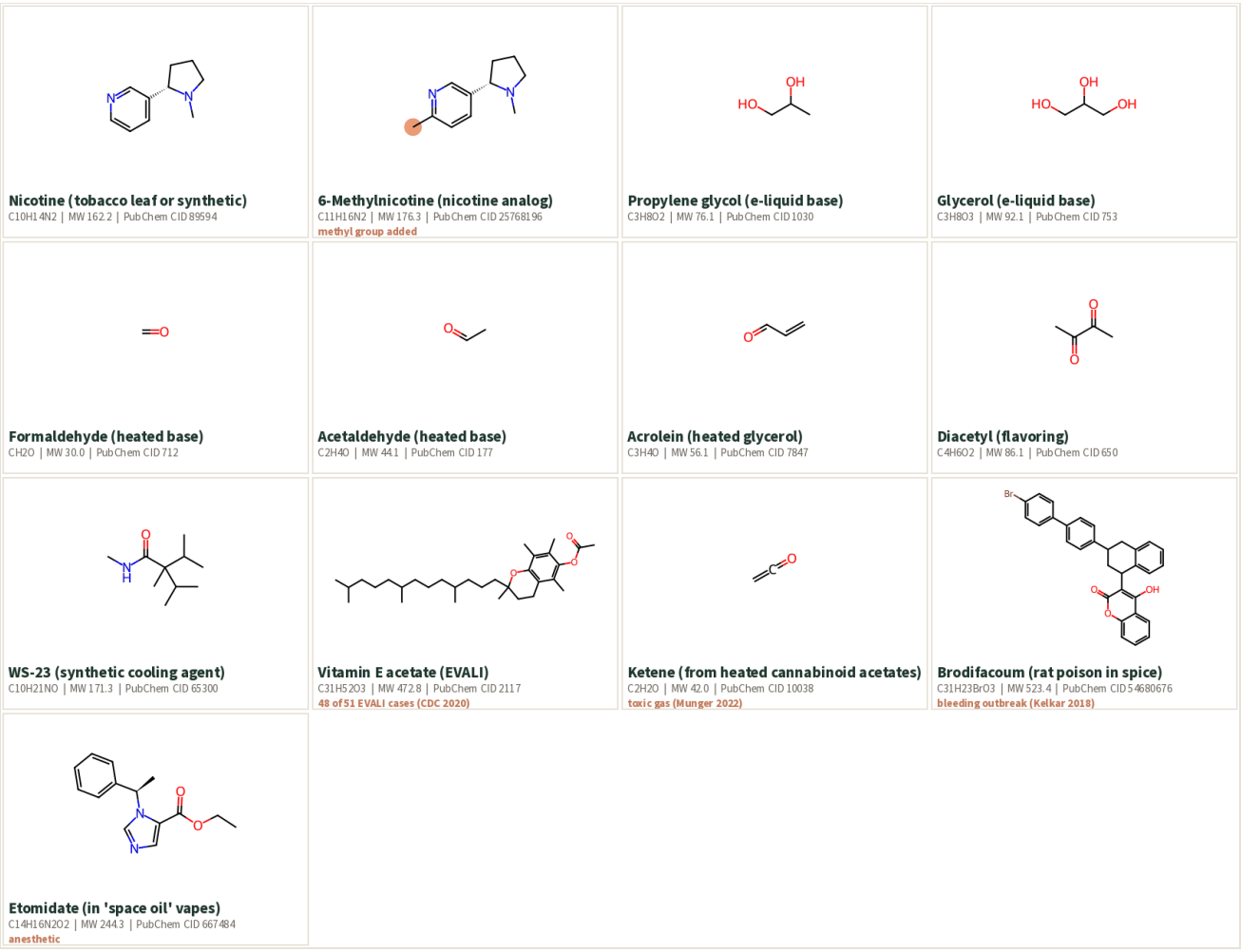
Illegal disposable vapes: metals, heat-made toxins, high nicotine

About half or more of e-cigarette samples in one study exceeded health-based limits for metals such as chromium and nickel,[150] and popular disposables have shown lead up to 175 ppm.[151] Vitamin E acetate was found in the lung fluid of 48 of 51[152] lung-injury (EVALI) patients tested. The US high-nicotine sales share rose from 12 to 75 percent between 2013 and 2018.[153] Sellers have also used chemistry to dodge rules: nicotine analog 6-methylnicotine now appears in oral pouches at 8 to 25 mg[135].

The structures below show the vape side of the problem: nicotine and its methyl analog, the two liquids that carry them, the toxic compounds that heating can form, and the contaminants and adulterants that have been found in illegal products.

EXHIBIT 11

Vape chemistry: nicotine, its analog, e-liquid bases, heat-made toxins and contaminants found in illegal products



Source: structures rendered with RDKit from PubChem isomeric SMILES (CID on each tile); findings from the studies listed [121,131,154,155,156,157,158,159,160,161,162,163,164,165,166,167]

Family	Main danger	Potency signal	Contaminant or label signal
Concentrated 7-OH	Opioid receptor agonist; respiratory depression	About 13x morphine in tissue assay [14]	7 of 8 capsules far above leaf 7-OH [96]
Synthetic cannabinoids	Full CB1 agonists; seizures, cardiac crises	Up to about 260x THC efficacy [119]	50% of low-THC samples spiked [19]
Nitazenes	Mu-opioid agonists; may need more naloxone	About 10x fentanyl (animal) [99]	Found in powders sold as heroin [168]

Family	Main danger	Potency signal	Contaminant or label signal
Delta-8, HHC, THCP	Intoxicating cannabinoids, often semi-synthetic	THCP binds CB1 like a potent full agonist[132]	27 of 27 vapes mislabeled[17]
Illegal disposable vapes	High nicotine; metals; heat-made toxins	US Elfbar about 42 mg/mL nicotine[169]	Lead up to 175 ppm[151]
Tianeptine	Full mu-opioid agonist sold as a nootropic	Full mu-opioid agonist[170]	Exposure rate up 525%, 2018 to 2023[76]

Symptoms and how they arise

The symptom evidence table links the effects reported to poison centers and in case reports to the receptor mechanism that explains them, and to the strength of the evidence.

Symptom or finding	Proposed mechanism	Evidence type	What the evidence shows
Sedation, coma, loss of consciousness	Mu-opioid agonism in brainstem and cortex	surveillance; case report	Sleepiness or loss of consciousness reported by poison centers after 7-OH; 38.8% of single-substance 7-OH exposures had serious outcomes, 20.5% hospitalized.[2]
Respiratory depression	Mu-opioid effect on brainstem respiratory centers	animal; case report; surveillance	IV 7-OH depressed breathing 4.5x more potently than morphine in rats; fully reversed by naloxone. Mitragynine alone did not (increased rate). One human case of cardiopulmonary arrest revived with naloxone. Poison centers list trouble breathing.[2]
Seizures	Mechanism unclear: adenosine, adrenergic, serotonergic and proconvulsant effects proposed; withdrawal and co-ingestants also implicated	case report; surveillance	Systematic review: 42 articles screened, 11 included, 20 patients, little toxicology confirmation. Case series of 11 Malaysian users with recurrent seizures. Poison centers list seizures with 7-OH.[171]
Myoclonus, tremor, abnormal movements	Not established; opioid neurotoxicity, seizure mimic, withdrawal or toxin co-exposure are hypotheses (hypothesis only, not sourced)	case report	ICU case after kratom product: intermittent generalized myoclonus and perioral twitching, EEG without seizures, resolved in 48 h (other drugs also detected). Neurology abstract: recurrent encephalopathy with abnormal movements in chronic kratom user. Reversible basal ganglia T1 hyperintensity with seizure in another case. No published tic-like case with 7-OH found.[172]
Nausea, vomiting, constipation	Opioid effects on chemoreceptor trigger zone and gut	human trial; surveillance; animal	7-OH and MGPI reduced GI transit in mice.[2]
Tachycardia, hypertension, agitation, sweating	Adrenergic activity of mitragynine; withdrawal; sympathetic activation	surveillance; human cross-sectional	Poison centers list rapid heart rate, high blood pressure, agitation, sweating. Regular kratom users had higher odds of sinus tachycardia (OR 8.6).[2]
QT prolongation, Brugada pattern, ventricular arrhythmia	hERG and sodium channel block (mitragynine IC50 0.3-2.5 uM in vitro)	in vitro; case report	Reversible Brugada pattern and QTc prolongation after kratom (case); Brugada unmasked after smoking a kratom cigarette in a young man with a twin sibling's sudden death; VF during sport with kratom and caffeine; VT requiring ECMO. Users' ECGs overall similar to controls except borderline QTc and tachycardia.[173]
Liver injury	Idiosyncratic, mostly cholestatic	case report; cohort	11 DILIN cases, all jaundiced, median latency 14 days, all recovered; systematic review of 32 cases.[174]
Hypogonadism, hyperprolactinemia	Opioid suppression of GnRH	case report; human cross-sectional	One case: low testosterone and raised prolactin normalized in 2 months off kratom. A study of 19 chronic tea users found no testosterone change.[175]
Psychosis, delirium, self-harm	Substance-induced psychosis, withdrawal; contribution of co-ingestants	case report	Case titled 7-OH-induced psychosis and delirium; self-amputation with cannabis and kratom products; withdrawal psychosis with 7-OH plus nicotine pouches requiring intubation; suicidal ideation in two 7-OH withdrawal cases.[176]

Symptom or finding	Proposed mechanism	Evidence type	What the evidence shows
Insomnia and sleep disruption	Opioid withdrawal; noradrenergic rebound	survey; case report	Sleep difficulty among commonly reported withdrawal symptoms in Malaysian users; insomnia in 7-OH withdrawal case.[177]
Cognition, learning, memory	Not established for 7-OH	none found	No 7-OH human cognitive data retrieved.
Adolescent and developing-brain effects	Not studied for 7-OH or MGPI	surveillance only	Poison centers received 53 7-OH cases from 1 Feb to 30 Apr 2025, 6 in people under 18. Products have child-appealing flavors and packaging (69% of MGPI products). An adolescent medicine commentary calls for screening in vape-shop-exposed youth.[178]
Dependence and tolerance	Mu receptor adaptation	case report; animal; survey	Tolerance within days and severe use disorder within weeks in case reports; rodent self-administration.[179]
Withdrawal (acute)	Noradrenergic rebound after mu agonist removal	case report; animal	Onset within 8 h; COWS peak 14 in one case, 31 in an MGPI case; supportive care resolved acute signs in 72-96 h; precipitated withdrawal after buprenorphine start in one case; rodent withdrawal at least 5 days after mitragynine.[178]
Pulmonary injury (ingested or inhaled)	Hypersensitivity, alveolar hemorrhage, ARDS, secondary hypoxia	case report; forensic series	Systematic review of 24 reports: diffuse alveolar hemorrhage (3), ARDS (3), eosinophilic pneumonitis (2); all clinical patients survived. No vape-specific data.[180]
Overdose death	Respiratory depression, often with other depressants	surveillance; case report; allegation	DEA TOX: 85 cases since 2019 with 7-OH, 55 fatal, median age 36, mean 7-OH 463 ng/mL, often with other drugs. Los Angeles Medical Examiner: 3 fatal 7-OH overdoses with alcohol present. NPDS 2015-2025: 233 kratom-associated deaths, 79% in multi-substance reports. Civil complaint alleges a 36-year-old died after buying 7-OH tablets (allegation only).[106]
Rhabdomyolysis and neurologic deficits after immobilization	Prolonged unconsciousness	case report	A 2026 case report of rhabdomyolysis, renal failure and chronic neurologic deficits after prolonged immobilization from a 7-OH product (abstract not reviewed).[181]
Neonatal withdrawal	Placental transfer of opioid-active alkaloids	case report; systematic review	Neonatal abstinence syndrome after maternal kratom tea; six case reports reviewed.[182]

> **The throughline.** In every family, a molecule is identified or banned, a slightly changed one appears, and the new one is stronger, less studied, and often mislabeled. A list of banned chemicals will always trail the next structure. A rule requiring proof of safety before sale puts the burden on the product, not on the next emergency room.

05 SECTION 5

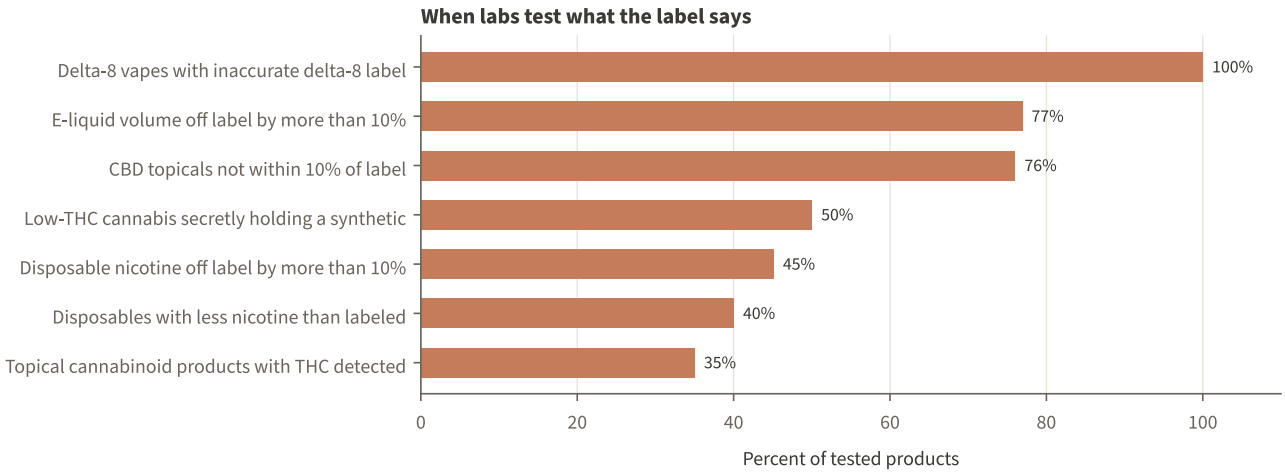
Label versus lab

When the package is wrong, the people who use it pay

A false or incomplete label is how a child swallows a concentrated opioid tablet, a teenager inhales an unlisted synthetic, or a parent never knows what was in the package. Honest labels were the heart of the 1906 law. Independent testing of the products in this report shows the label is often wrong, in both directions: too little of the advertised ingredient, too much, or something unlisted and dangerous.

EXHIBIT 12

Label versus lab: share of tested products that failed



Source: The Wiley Rule research database[17,18,19,183,184]

The contaminant map pulls together the lab findings in our database by product family and by type of problem: heavy metals, hidden drugs and adulterants, toxins made by heating, label versus measured content, and microbial contamination. A filled cell means at least one peer-reviewed or government test found the problem; an empty cell means we hold no test, not that the product is clean.

EXHIBIT 13

Contaminant and adulterant map: what lab tests have found, by product family

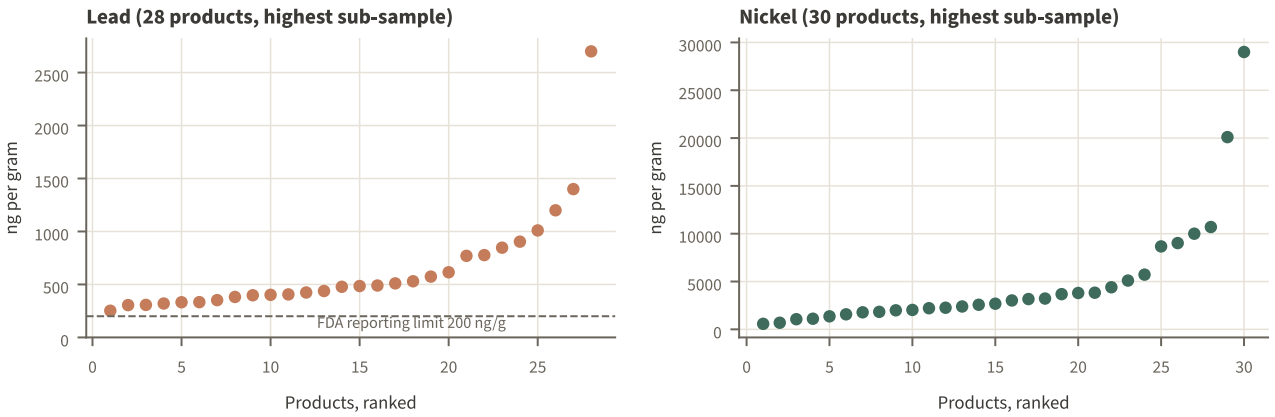
	Heavy metals	Hidden drug or adulterant	Heat-made toxin or by-product	Label vs measured	Microbial
Kratom and 7-OH	Lead and nickel above safe oral intake in 30 tested products	Unlabeled alkaloids and 3-dehydromitragynine common		7 of 8 capsules 109 to 520% above leaf 7-OH	Salmonella outbreak: 199 cases in 41 states
Delta-8 and THC-O vapes	Heavy metals in delta-8 vaporizers	Unlabeled cutting agents; undescribed cannabinoid	Acetates such as THC-O form ketene gas when vaped	27 of 27 vapes mislabeled	
Illegal disposable nicotine vapes	Lead up to 175 ppm from leaded parts		About half or more of samples over metal limits (Cr, Mn, Ni, Pb)	45% of nicotine samples off label by over 10%	
Illicit THC cartridges (EVALI)		Vitamin E acetate in lung fluid of 48 of 51 patients			
Synthetic cannabinoids		Rat poison (brodifacoum) caused bleeding outbreak		Half of low-THC cannabis samples spiked	
School and shop vapes (UK, Ireland)		Synthetic cannabinoids in 13% of English school vapes; HHC in Irish shop vapes			
Mushroom-labeled gummies		3 of 5 brands held unlabeled Schedule I drugs			
Phenibut products				Still sold after FDA warnings, up to 1,164 mg per serving	

Source: peer-reviewed and government lab tests in The Wiley Rule database; an empty cell means no test held, not a clean result [17,18,19,96,109,121,131,150,151,152,185,186,187,188,189]

FDA's own tests of 30 kratom products found nickel in all 30 and lead above its 200 ng/g reporting limit in 28. FDA gives no test date, and these are products FDA chose to test, not a market sample.

EXHIBIT 14

Heavy metals measured by FDA in 30 kratom products



Source: FDA laboratory analysis of kratom products for heavy metals (same data as thewileyrule.org/data/charts) [185]

- Of 89 CBD-labeled topical products tested, only 24%[183] were within 10 percent of the label; THC was found in 35% (37 of 105)[183] of 105 products.
- Delta-8 THC was found in 19 of 20 retail products, but advertised and measured amounts were only weakly related (rho = 0.40 (weakly positive)[190]); delta-9 THC appeared in 35% (7 of 20)[190].
- In disposable vapes, 45.1% (23 of 51)[18] nicotine samples and 76.9% (30 of 39)[18] e-liquid volume samples deviated from the label by more than 10 percent. A 2025 study found 10 of 25 (40%)[184] devices below their labeled nicotine.
- After FDA warnings in 2019, 4 of 4 brands[189] tested still contained phenibut, at up to 1,164 mg per serving[189].
- In Virginia, 3 of 5 brands[188] of tested "nootropic" gummies labeled as mushroom products contained unlabeled Schedule I drugs, and 5 people, including a 3-year-old, needed hospital evaluation.[188]
- A 2024 outbreak tied to mushroom-labeled chocolate bars sickened 180[191] people, with 73[191] hospitalizations.
- Abroad, the same problem appears in vapes: in England, 13%[187] of vapes confiscated at schools contained synthetic cannabinoids, and in Ireland, 28 of 76[192] shop vapes tested contained HHC or related cannabinoids.

Labels also carry the wrong legal signals. Products sold as "not for human consumption" sidestep food and drug rules while being made to be swallowed or inhaled. Only 19[193] states had labeling requirements for kratom products as of June 2026.

06 SECTION 6

Human cost

Poison centers, emergency rooms, deaths, addiction and children exposed

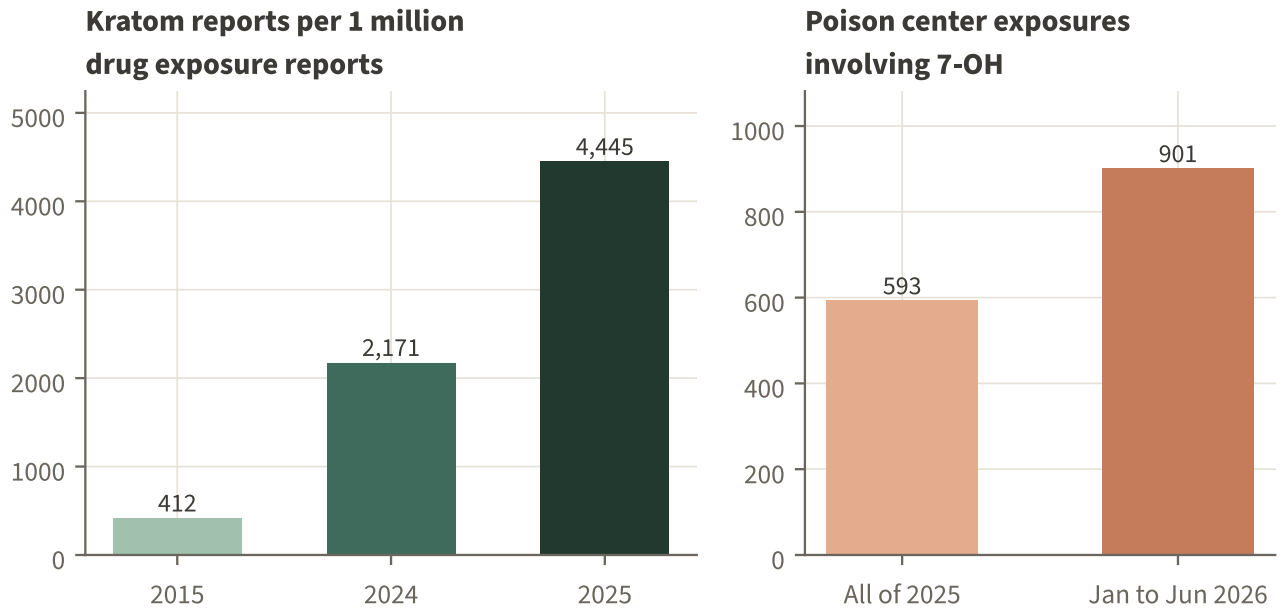
7,699 nicotine e-cigarette and e-liquid exposures in children age 5 and under reported to US poison centers in 2024, up from 7,074 in 2023.[4,5]

Kratom and 7-OH

CDC reports US poison center kratom exposures rose from 258[1] in 2015 to 3,434[1] in 2025, with 233[1] deaths reported from 2015 to 2025; 79%[1] of those deaths involved more than one substance. America's Poison Centers counted 593[2] exposures involving 7-OH in 2025 and 901[2] in the first half of 2026, and 38.8[2] percent of 7-OH-only exposures had a serious outcome.

EXHIBIT 15

Kratom and 7-OH reports to US poison centers



Source: The Wiley Rule research database[1,2]

Death data undercount. 7-OH breaks down in stored blood, falling 89% lower after 112 days[31] after 112 days, so deaths may go unrecognized.[31] Where examiners look, they find it: Florida medical examiners listed mitragynine as a cause in 182[28] deaths in 2023. A CDC review of overdose deaths from July 2016 to December 2017 found kratom was a cause in

59.9% (91 of 152)[29] of kratom-positive deaths. In Kansas, emergency visits tied to kratom and 7-OH totaled 224[30] from April 26 to July 18, 2026.

Hemp-derived products

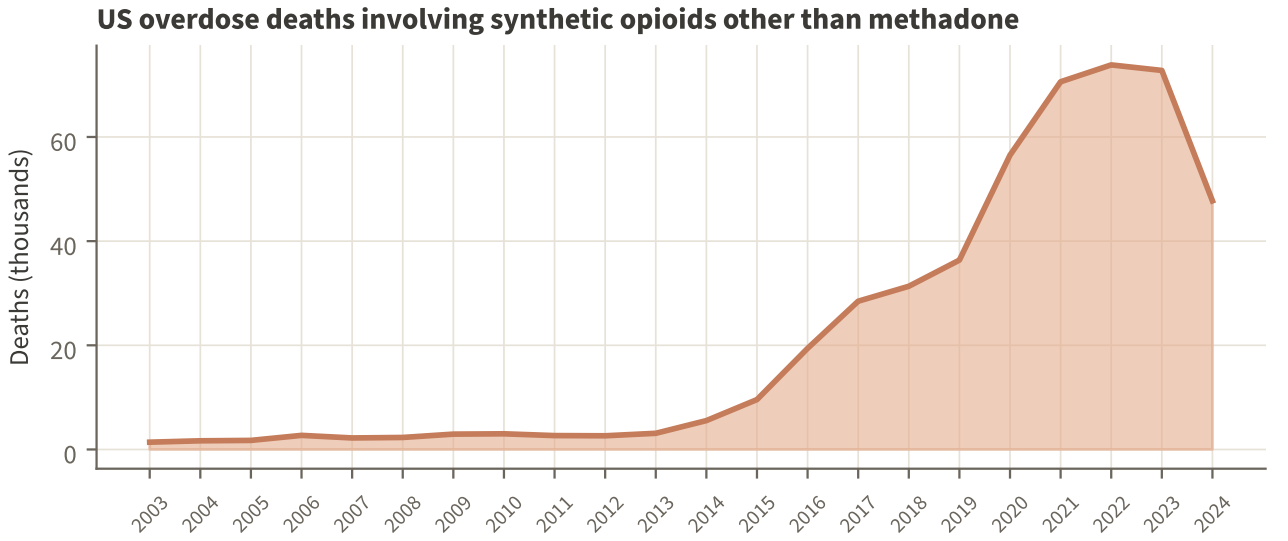
Poison centers recorded 4,925[6] exposures with delta-8 THC as the primary substance in 2021 and 2022; the population rate rose 79.2%[6] in one year, and 15.5%[6] of exposures were admitted to a hospital unit.

Lab-made drugs

Synthetic cannabinoid calls to poison centers reached 7,779[194] in 2015, and bath salts calls 6,137[194] in 2011. Vaping lung injury (EVALI) put 2,807[195] people in the hospital or killed them by February 2020, with 68[195] confirmed deaths. US deaths involving synthetic opioids other than methadone peaked at 73,838[196] in 2022 and were 47,735[197] in 2024.

EXHIBIT 16

Synthetic opioid overdose deaths, United States



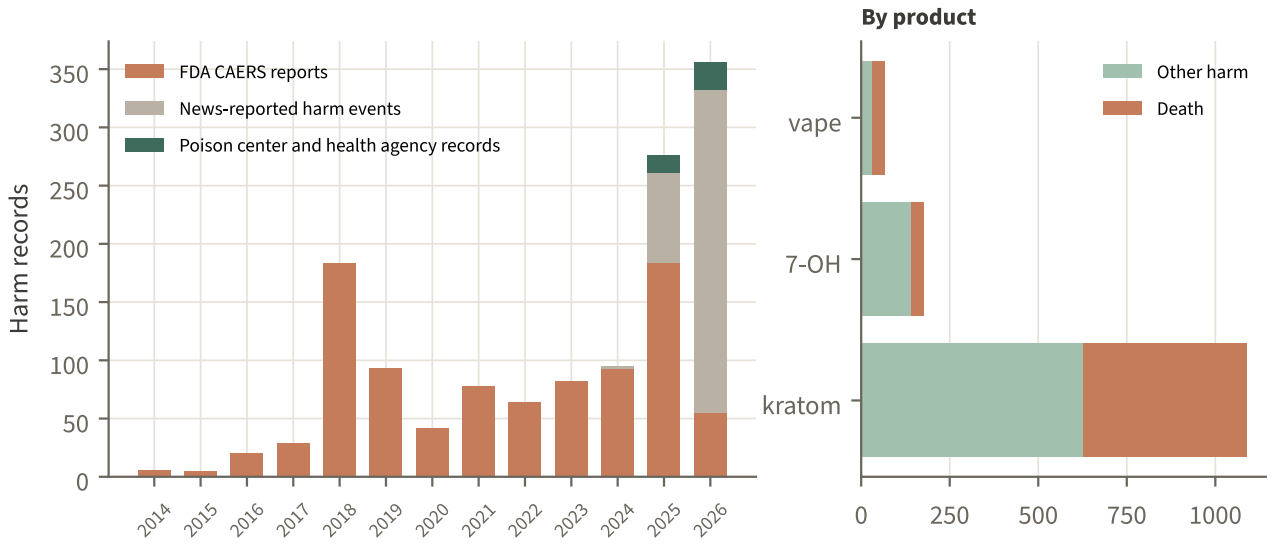
Source: The Wiley Rule research database[196]

What the harm records show

Our harm database holds 1,331 individual records from FDA's adverse event system (CAERS), news reports and poison center and health agency releases, including 533 records that report a death. These are reports, not verified cases: CAERS reports are unconfirmed and can be duplicated, and news counts track media attention. Most records carry no state, so we do not map them. The value of the records is in the pattern, which matches the surveillance data above: a sharp rise in 2025 and 2026 led by 7-OH.

EXHIBIT 17

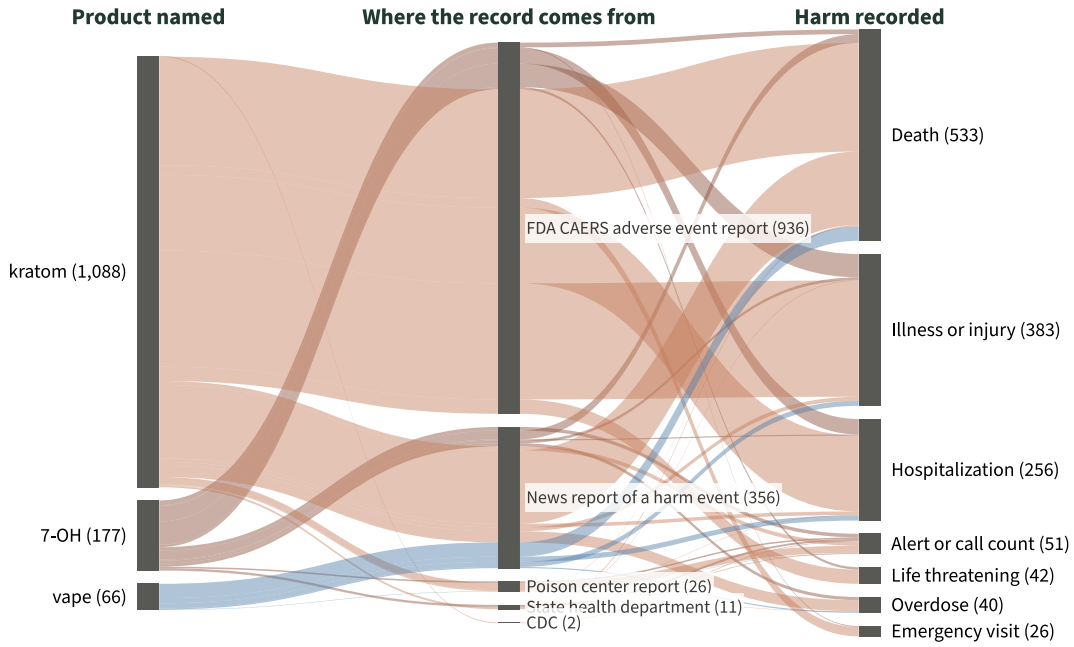
Harm records by year and source, and by product (unverified reports)



Source: The Wiley Rule harm database: FDA CAERS (openFDA), news reports, poison center and health agency releases[198]

EXHIBIT 18

Harm records traced from product to source to outcome



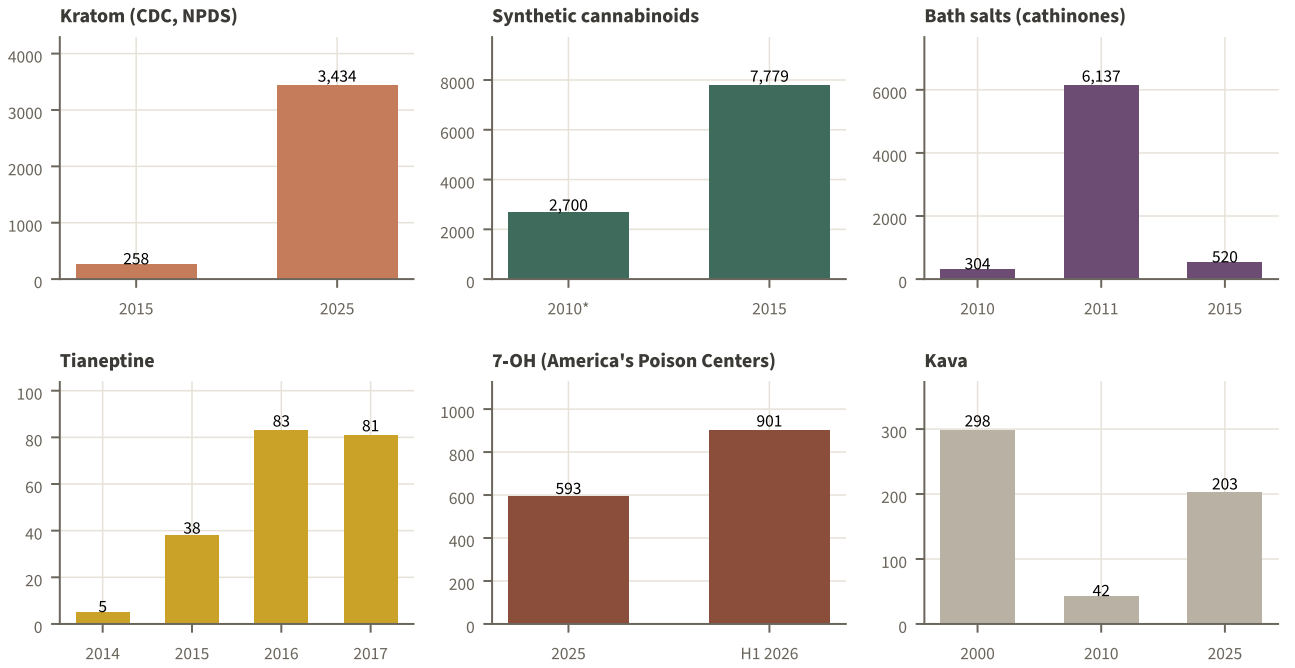
Source: The Wiley Rule harm database (aggregate counts; reports are unverified and may duplicate)[198]

Product	Records	Death	Illness or injury	Hospitalization	Life threatening	Overdose	Emergency visit	Health alert	By source
kratom	1,088	463	303	201	36	29	24	12	caers 818, cdc 2, news 242, poison_center 21, state_health 5
7-OH	177	34	67	42	6	8	2	14	caers 118, news 49, poison_center 4, state_health 6
vape	66	36	13	13		3			news 65, poison_center 1

Counts of records in The Wiley Rule harm database (hidden records excluded). One record can describe one person or an aggregate; reports are unverified. Sources: FDA CAERS via openFDA, news reports, poison center and health agency releases.[198]

EXHIBIT 19

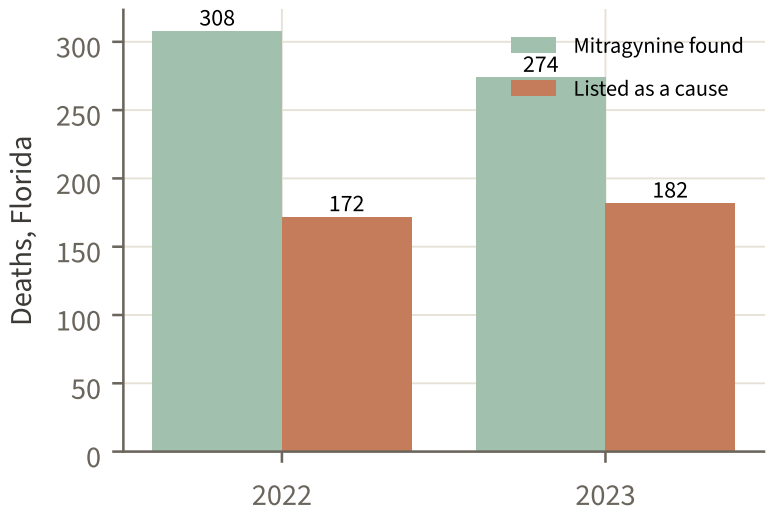
Poison center and surveillance counts by product family



Source: CDC, America's Poison Centers, CRS and peer-reviewed studies as listed[1,2,133,194,199,200]

EXHIBIT 20

Florida medical examiners: deaths with mitragynine found and listed as a cause



Source: Florida Department of Law Enforcement, Medical Examiners Commission[28]

> **Get help now.** Anyone who thinks a child or adult has been exposed can call Poison Help at 1-800-222-1222[201], free and confidential, 24 hours a day.

Adverse event systems miss most cases. One estimate cited by federal reviewers put reporting of severe dietary-supplement adverse events to FDA at less than 1%[202].

07 SECTION 7

The cost of inaction

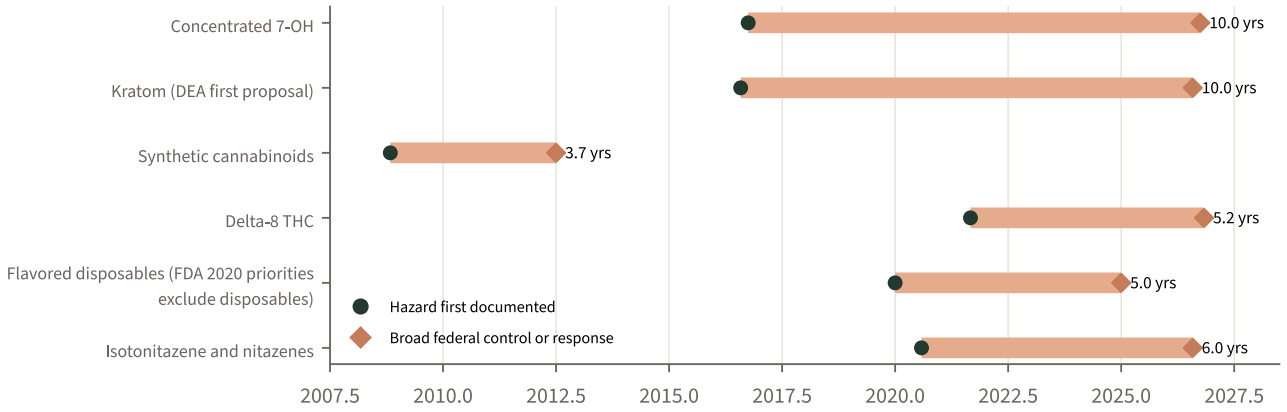
Every year of delay is measured in exposures, addiction and deaths

Every year of delay is already counted in poison center calls, emergency visits and deaths. Kratom reports per million drug exposure reports rose from 412[1] in 2015 to 4,445[1] in 2025 while federal scheduling stalled for a decade. FDA cited about 4 tianeptine poison center cases in 2013[203] and about 350[203] in 2024. We searched for a national estimate of the dollar cost of that harm and found none. No federal agency, peer-reviewed study or industry source in the record we reviewed prices the harm from concentrated 7-OH, intoxicating hemp, lab-made legal highs and illegal disposables as a category, and we have not invented one. What the record also shows is time: the gap between when a hazard was documented and when the law moved, and what happened in between.

Hazard	First documented	Federal response	What happened in between
Concentrated 7-OH and kratom	DEA proposes scheduling, Aug 2016, then withdraws, Oct 2016[57]	DEA notice of intent on 7-OH, Oct 14, 2026[66]	Kratom poison center reports per million rose from 412 (2015) to 4,445 (2025)[1]
7-OH spiked above leaf levels	Lab study, Oct 2016[96]	FDA warning letters, Jul 2025[64]	304 distinct 7-OH and pseudoindoxyl products found online by early 2025[71]
Flavored disposable vapes	FDA 2020 enforcement priorities target cartridges, not disposables[52]	Import alerts cover any unauthorized e-cigarette, Jan 2025[204]	Disposable share of high school users went from 2.4% (2019) to 26.5% (2020)[205]
Intoxicating hemp (delta-8)	CDC health alert, Sep 2021[206]	Hemp definition rewritten Nov 2025; exclusions effective Nov 12 and Dec 11, 2026[60]	4,925 delta-8 poison center exposures in 2021 to 2022[6]
Synthetic cannabinoids	CBP first encounters Spice-type products, Nov 2008[133]	DEA emergency scheduling, Mar 2011; Congress lists 26 substances, Jul 2012[133, 194]	Poison center calls reached 7,779 in 2015, after the 2012 law[194]
Tianeptine	Poison center calls begin a steep climb, 2014[199]	No federal scheduling action in our records	FDA-cited annual cases rose from about 4 (2013) to about 350 (2024)[203]

EXHIBIT 21

Years between first documented hazard and broad federal control or response



Source: The Wiley Rule timeline (sources listed) [16,52,57,66,73,96,133,194,204,206,207,208]

The closest sourced cost figures

Adjacent estimates exist, and they show the scale at stake, but none can be attributed to the products in this report. They are shown for context only.

Estimate	Amount	What it covers	Why it is not this report's number
Healthcare spending attributable to adult e-cigarette use, 2018	$15.1 billion [209]	All current adult e-cigarette use in the US	Covers all e-cigarettes, legal and illegal, and adults only
Excess healthcare spending per adult e-cigarette user, 2018	$2,024 per user per year [209]	Per current adult user	Same study; not specific to illegal disposables
Economic cost of opioid use disorder and fatal overdose, 2017	$1,021 billion [210]	All opioids in the US	Kratom-type products are a small, unmeasured share
National cost of harm from the products in this report	**No estimate found**	Concentrated 7-OH, intoxicating hemp, legal highs, illegal disposables	Data gap: no federal or peer-reviewed estimate exists

Delay has costs that businesses report themselves. Altria wrote down $2,128 million in e-vapor assets in 2025, citing in part "protracted ineffective enforcement" against illicit flavored disposables.[70] Federal officers have seized illegal vapes with stated retail values of $76 million in one 2024 operation,[211] $86.5 million in one 2025 operation,[212] and over $175 million in Operation Red Mist in 2026.[213] Seizures at that scale show how much reached the border; they do not show how much got through.

Delay also hides harm. 7-OH breaks down in stored samples, and many deaths involve more than one substance, so the counts in this report are a floor, not a ceiling.

> **Cost of inaction, stated plainly.** When the law waits for proof of harm, the proof is gathered in poison center logs, emergency rooms and medical examiner files. A pre-market rule moves that cost to the seller before sale.

SECTION 8

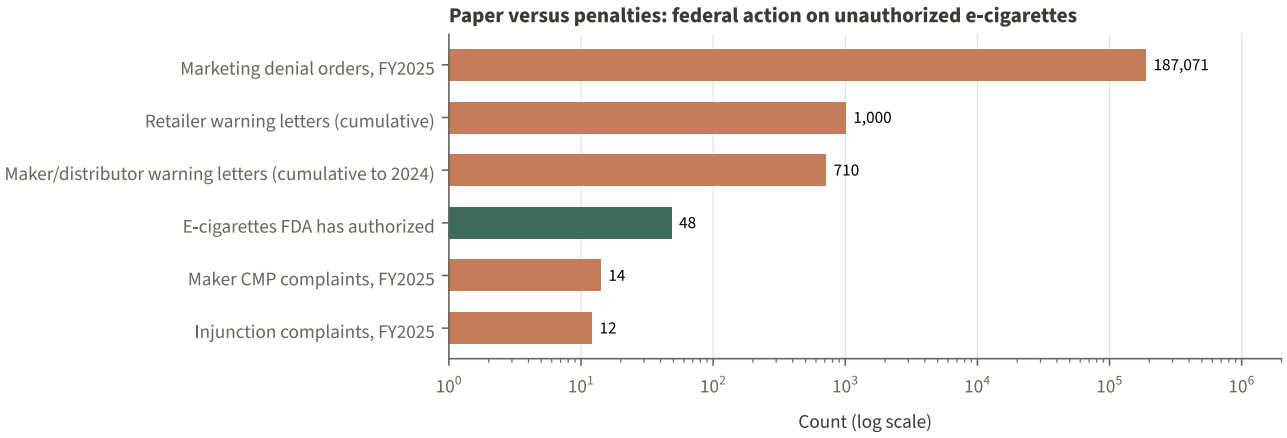
08 The federal agencies' record

Warnings are frequent; the harm keeps climbing

The poisonings and deaths in this report accumulated while federal agencies issued warnings far more often than they escalated. They have real authority over these products, and they have used it. The pattern in the record is that warnings are frequent and escalation is rare.

EXHIBIT 22

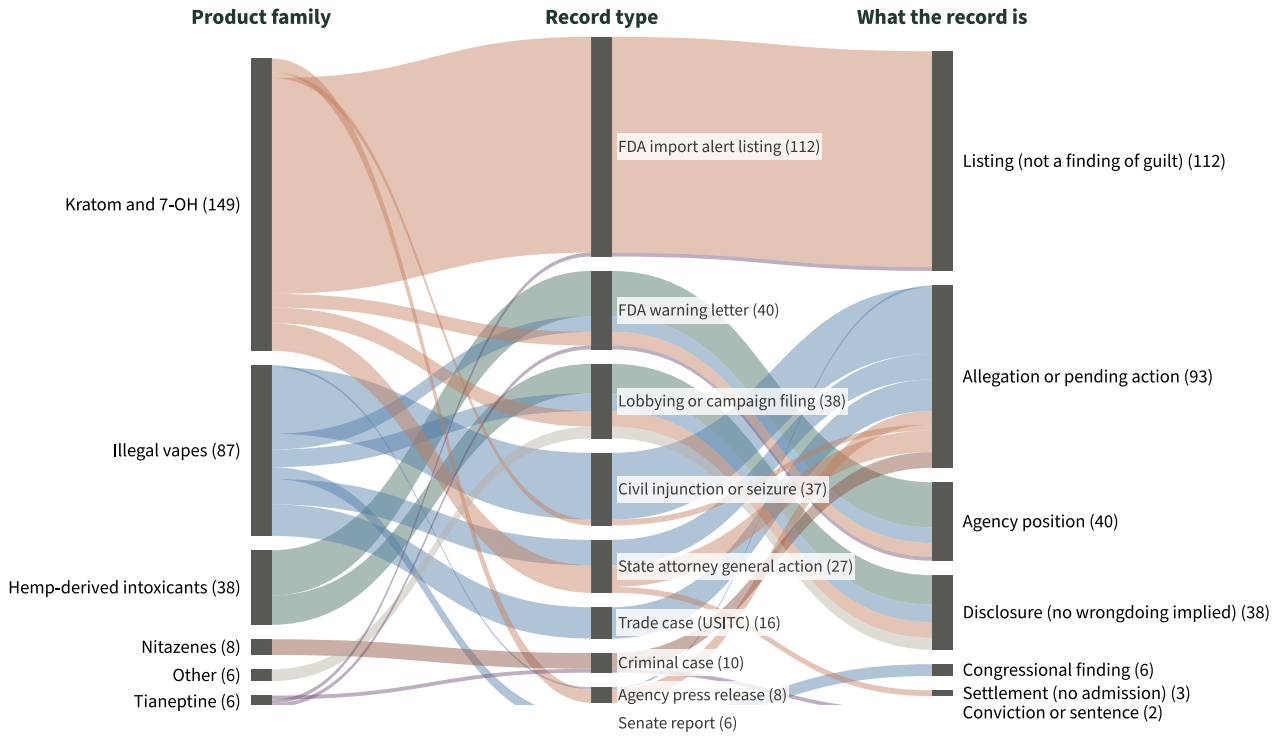
Federal action on unauthorized e-cigarettes: many letters, few penalties



Source: The Wiley Rule research database[11,12,13,36,214]

EXHIBIT 23

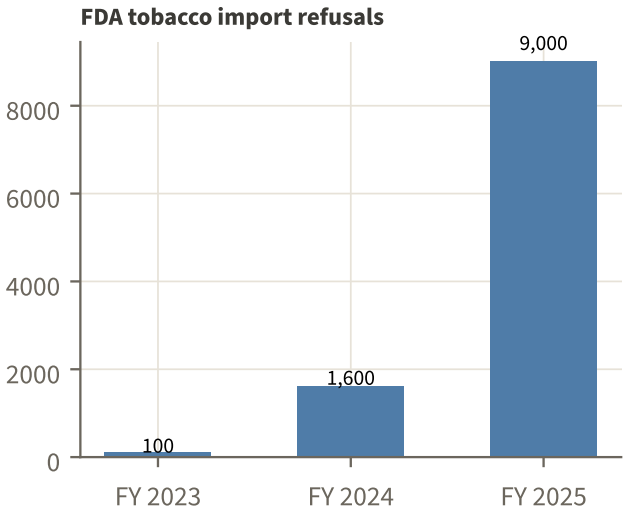
Government and court records by product family, record type and legal status

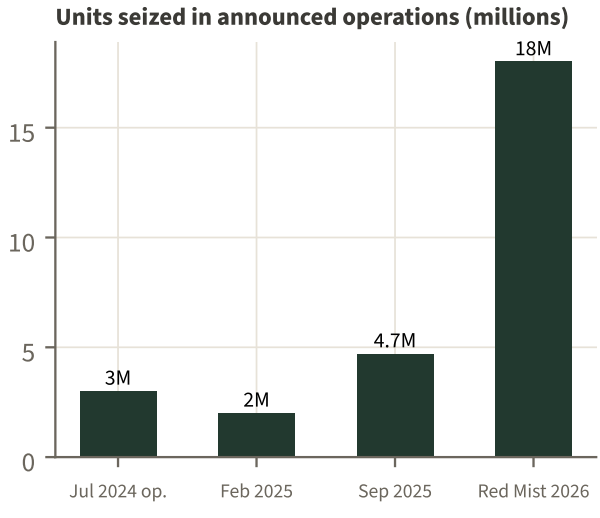


Source: The Wiley Rule actor records (each record links its government or court source; Appendix B) [215]

EXHIBIT 24

Import refusals and units seized in announced federal operations





Source: FDA and CBP releases as listed [13,211,212,213,216]

FDA

Vapes. FDA reported more than 710 warning letters to makers and distributors and more than 800 to retailers through 2024,[214] and more than 1,000 to retailers by May 2026.[36] In FY2025 it filed 12[13] injunction complaints and 14[13] manufacturer civil money penalty complaints, and issued 187,071[11] marketing denial orders. Import refusals rose from 100[13] in FY2023 to over 9,000[13] in FY2025 after FDA updated import alerts in January 2025 so that any unauthorized e-cigarette may be detained.[204] The Senate investigation found FDA never sent a warning letter to the maker of the top youth brand before it rebranded.[53]

7-OH. FDA announced seven warning letters on July 15, 2025,[64] and two weeks later recommended scheduling 7-OH and stated it is not lawful in dietary supplements or conventional foods.[63] Five months after the letters, the Justice Department seized about 73,000 units from facilities of two of the seven firms.[38]

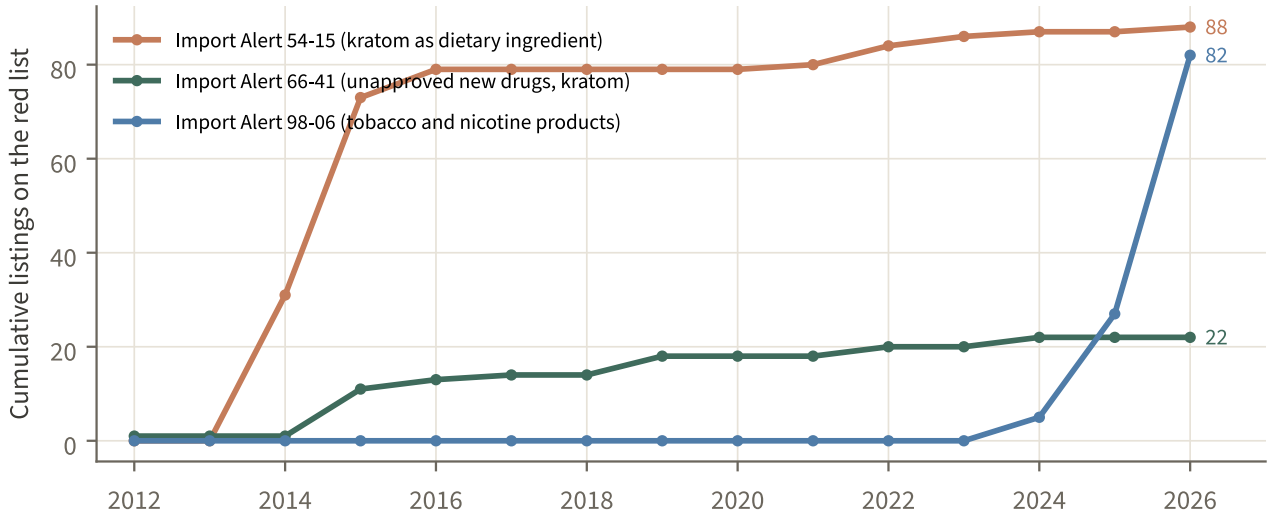
Delta-8. We found 23 FDA warning letters to delta-8 and hemp-derived product sellers from 2022 to 2025, 11 of them joint with the FTC over copycat snack packaging, and no follow-on seizure, injunction or penalty against those firms in the records we checked.

FDA import alerts

Import alerts let FDA detain shipments from listed firms without examining them. Kratom has been on Import Alert 54-15 (as an unapproved dietary ingredient) since 2014 and on 66-41 (unapproved new drugs) since 2012. Since 2024 FDA has added listings to Import Alert 98-06 for tobacco and nicotine products at a faster pace than kratom listings ever grew.

EXHIBIT 25

FDA import alert listings over time: kratom (54-15, 66-41) and tobacco and nicotine products (98-06)



Source: FDA Import Alerts 54-15, 66-41 and 98-06 (dates as listed by FDA)[217,218]

DEA

DEA proposed temporary control of mitragynine and 7-OH in August 2016 and withdrew the notice in October 2016.[58] Ten years later it placed three newer kratom-derived opioids in Schedule I (August 2026)[16] and published a notice of intent on 7-OH and mitragynine pseudoindoxyl (October 14, 2026).[66] DEA's tool is temporary scheduling, with an initial term of 2 years[219], and it has been used a few times a year. DEA's 2018 move to control all fentanyl-related substances as a class, made permanent by Congress in 2025, is the federal precedent for acting on a whole family at once.[220,221]

CDC

CDC's surveillance is the backbone of what is known: MMWR reports on kratom deaths and exposures,[1] the National Youth Tobacco Survey with FDA,[27] and a 2021 health alert on delta-8 adverse events.[206] CDC can describe the problem; it does not regulate products.

FTC

The FTC joined FDA warning letters to delta-8 sellers in 2023 and again in July 2024, when 5[222] more companies were warned over snack look-alikes.[223]

CBP

Customs and Border Protection has carried out the largest physical actions: 4.7 million[212] units in one 2025 operation with FDA[212] and more than 18 million[213] units in Operation Red Mist.[213]

CPSC

The Consumer Product Safety Commission enforces the Child Nicotine Poisoning Prevention Act of 2015, which since July 26, 2016 has required child-resistant packaging for liquid nicotine containers.[224] In November 2019, CPSC and FDA warned retailers that noncompliant liquid nicotine can bring civil penalties of up to $110,000 per violation[225].[225] Its public recall database shows 1 recall (July 1, 2021; about 1,000 units)[226] whose title names nicotine, vape or e-liquid.[226] Against 7,699 young-child nicotine exposures in a single year, one recall in a decade is a thin record. CPSC does not regulate the drug content of these products.

Date	CPSC record	What it shows
Jul 26, 2016	Child Nicotine Poisoning Prevention Act packaging rule takes effect[224]	Child-resistant packaging required for liquid nicotine containers
Nov 22, 2019	Joint CPSC and FDA warning to retailers[225]	Penalties of up to $110,000 per violation[225]
Jul 1, 2021	TBD Liquids recall (21-759)[226]	About 1,000 units of liquid nicotine without child-resistant packaging
2016 to 2026	1 recall (July 1, 2021; about 1,000 units)[226]	Only recall in the SaferProducts.gov recall API naming nicotine, vape or e-liquid

> **Pattern.** Of seven 7-OH warning-letter recipients, two faced federal seizure. Of 23 delta-8 warning letters, none faced follow-on federal court action in the records we checked. Most firms in the September 2025 vape sweep had earlier FDA warnings. Letters are not enough when a product can be relabeled and resold the next week.

09 SECTION 9

The ban-then-replace cycle

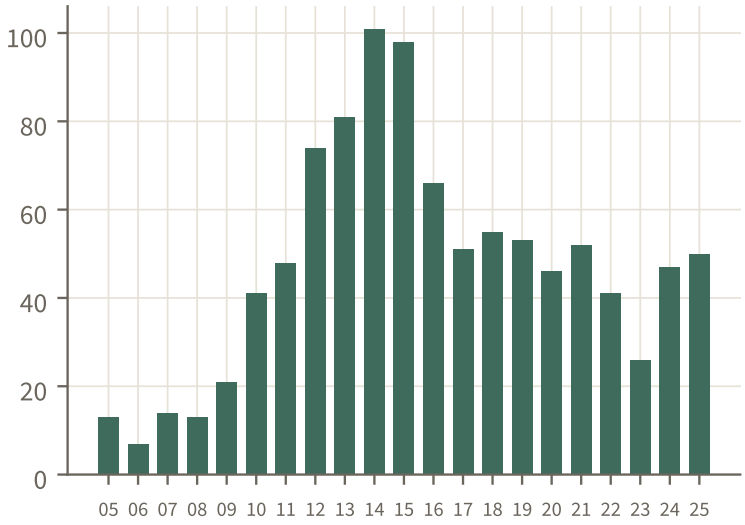
One molecule at a time cannot keep up, and people already dependent pay twice

Banning one substance at a time creates a market for the next one, and people are hurt in the gap. The data show the cycle in every family.

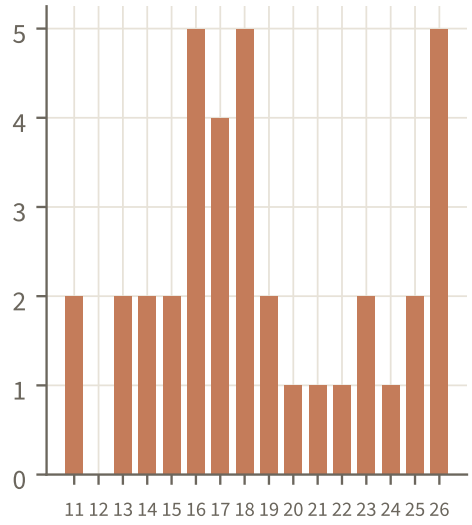
EXHIBIT 26

New substances keep arriving; US scheduling moves a few at a time

New psychoactive substances first notified in the EU each year



DEA temporary scheduling orders per year



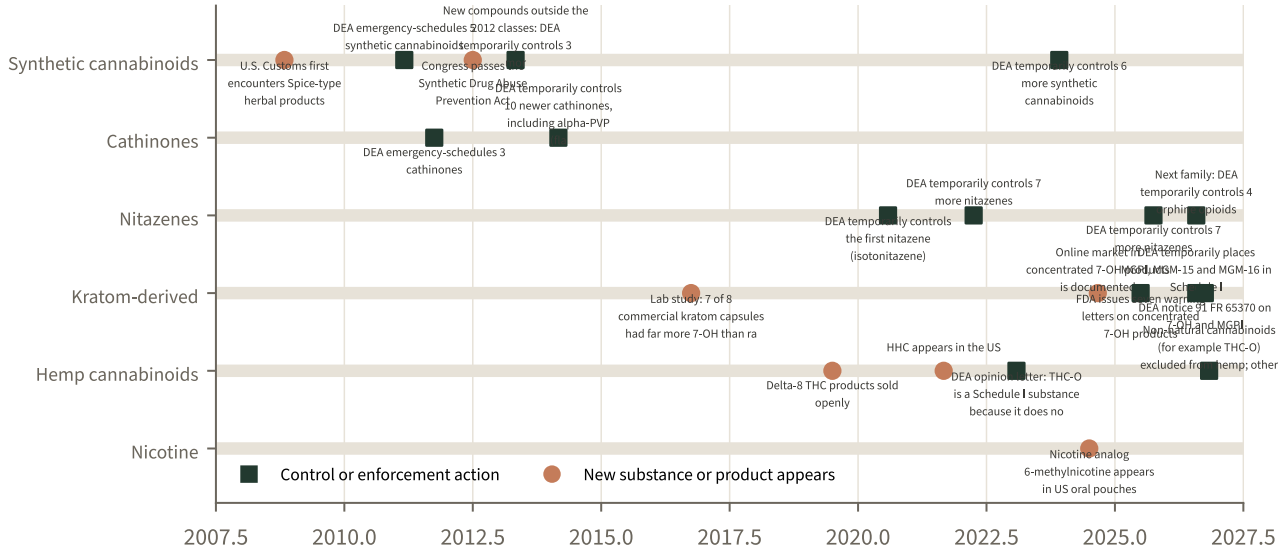
Source: The Wiley Rule research database[22,227]

Family	What was controlled	What came next
Synthetic cannabinoids	26 substances placed in Schedule I by Congress, 2012[194]	New compounds outside the 2012 classes, 2013; DEA still adding more in 2023[228,229]
Synthetic cathinones	DEA emergency-schedules 3 cathinones, 2011[230]	10 newer cathinones including alpha-PVP, 2014[231]
Nitazene opioids	Isotonitazene controlled, Aug 2020[207]	7 more nitazenes in 2022, 7 more in 2025, then 4 orphine opioids in 2026[208,232,233]
Nitazenes, China	China controls 10 nitazenes, 2024[234]	EU laboratories start seeing orphine replacements (same record)

Family	What was controlled	What came next
Concentrated 7-OH	FDA warning letters, Jul 2025[64]	Semi-synthetic MGPI, MGM-15 and MGM-16; DEA temporary Schedule I, Aug 2026[16]
Hemp cannabinoids	Delta-8 spreads after the 2018 hemp definition[59]	HHC appears in the US, 2021; DEA says THC-O is Schedule I, 2023[73,134]
Etomidate vapes	China controls etomidate, Oct 2023[235]	Look-alike compounds follow (same record)
Nicotine	Synthetic nicotine brought under FDA tobacco law, 2022	Nicotine analog 6-methylnicotine sold in pouches at 8 to 25 mg[135]

EXHIBIT 27

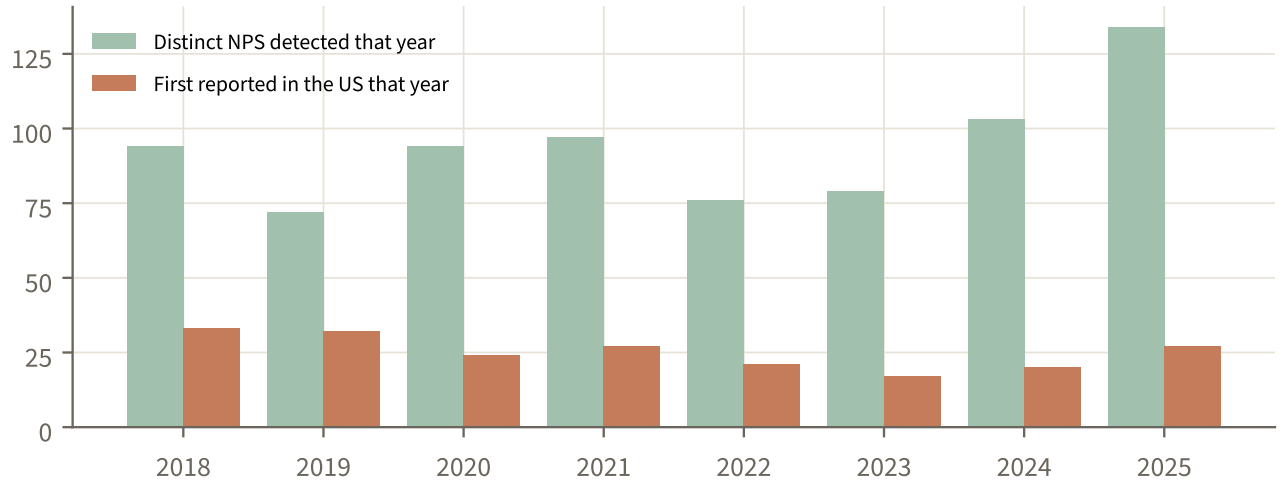
The ban-then-replace cycle, family by family



Source: The Wiley Rule timeline (sources listed)[16,64,66,71,73,96,133,134,135,194,207,208,228,229,230,231,232,233]

EXHIBIT 28

New psychoactive substances detected in the United States each year



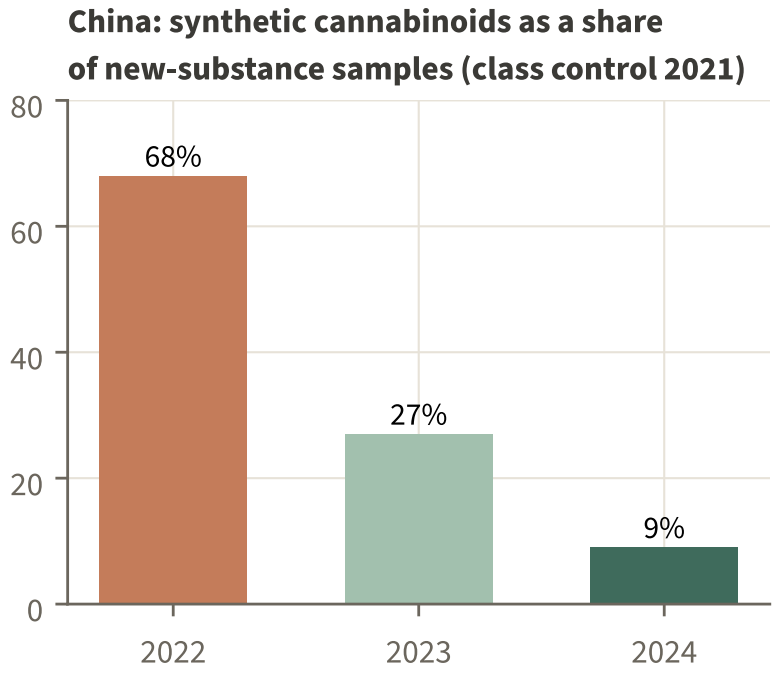
Source: Center for Forensic Science Research and Education (CFSRE) NPS Discovery[236]

What breaks the cycle

Class-based and effect-based controls work better than lists. After China placed all synthetic cannabinoids under class control in May 2021,[24] their share of new-substance samples fell from 68 percent[24] in 2022 to 9 percent (17 of 184)[24] in 2024. Japan's generic scheduling now covers 2,125[237] of its 2,480[237] designated substances. The UK adopted a generic definition for nitazenes in 2024.[238]

EXHIBIT 29

After class control, synthetic cannabinoids faded in China



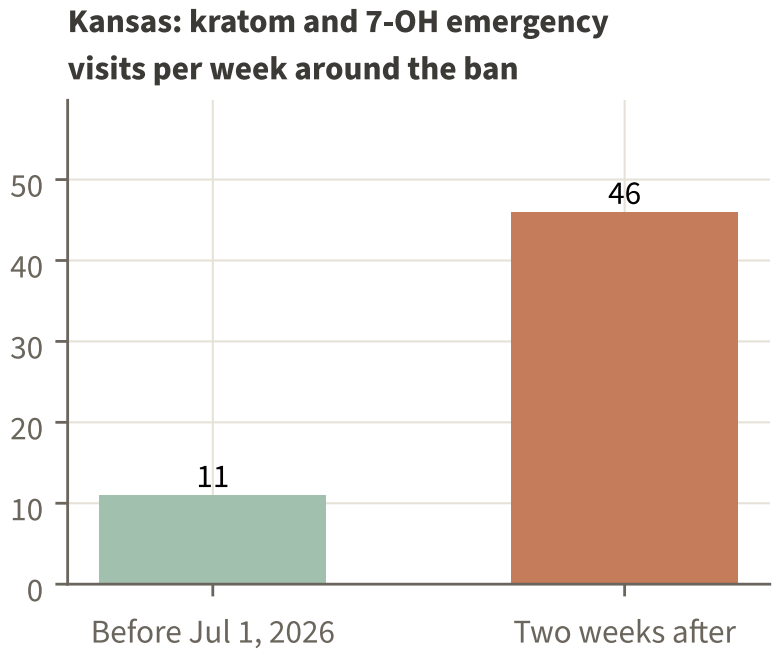
Source: The Wiley Rule research database[24]

A warning from Kansas

Bans without a care pathway carry their own harm, measured in emergency visits. After Kansas scheduled 7-OH, weekly emergency visits for kratom and 7-OH rose from 11[30] before July 1, 2026 to 46[30] two weeks after, and 85[30] percent involved withdrawal.[30] People already dependent on concentrated opioids need treatment access at the same time products leave shelves.

EXHIBIT 30

A ban without a care pathway: Kansas emergency visits



Source: The Wiley Rule research database[30]

10

SECTION 10

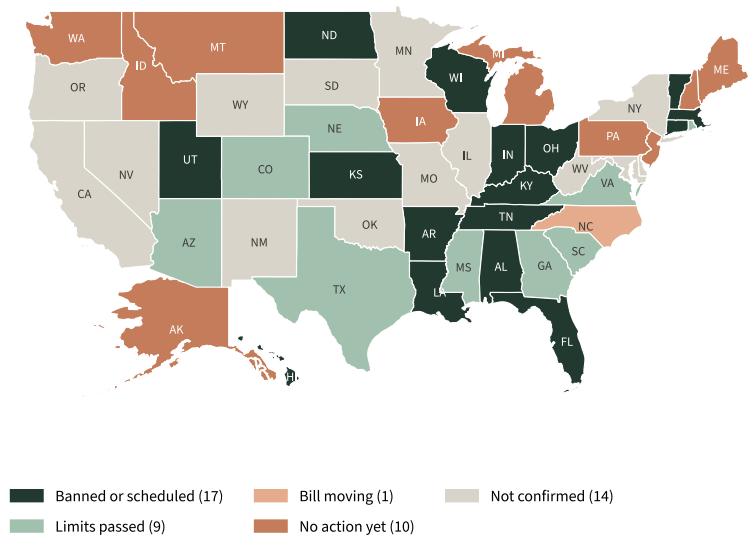
The states

A 50-state scorecard, and the exposure gap it leaves

The human cost is not the same in every state, because the laws are not. States have moved faster than Washington. As of June 2026, NCSL counted at least 31 states and D.C.[193] regulating kratom or its components in some way, up from 24 states and D.C.[239] in April 2025. Our own review, which counts only laws confirmed on an official state source, finds 16 states and DC that have banned or scheduled concentrated 7-OH and 9 more states with limits (Appendix A, with each state's source).

EXHIBIT 31

Where states stand on concentrated 7-OH



Source: The Wiley Rule state tracker; each state's official source is in Appendix A; boundaries US Census Bureau (cartographic, 1:20m)[67,240]

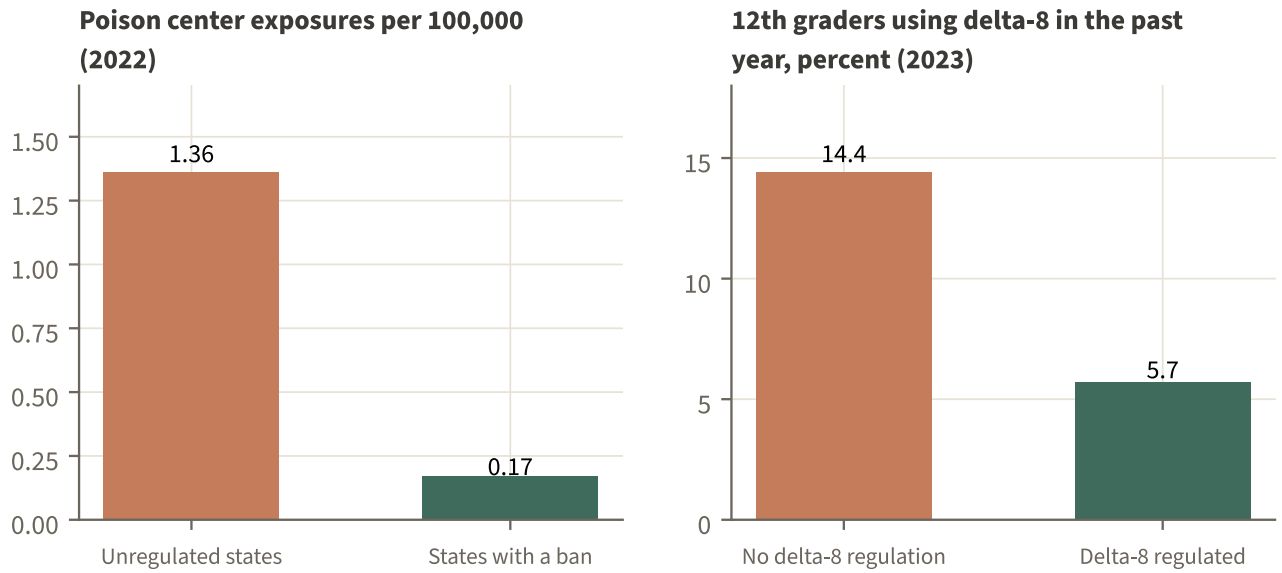
The result is a patchwork. A product banned in one state is legal across the line, and online sellers ship to both. Vape directory laws, which allow only products with an FDA authorization or pending application to be sold in a state, are in force or enacted in 15 states in our tracker. They can work, but evidence from Alabama, Oklahoma and Louisiana shows sales of unlisted products persisting, with more than half[241] of per-capita nicotine sales still unlisted and Louisiana sales rebounding within 8 months[241].

Some state policies show clear effects. After Massachusetts restricted flavored tobacco sales, average 4-week e-cigarette unit sales fell -89.4% (95% CI -92.7 to -84.7)[242]. Delta-8 shows the same thing. In 2022, poison center exposure rates were 1.36 (95% CI 0.95-1.77)[6] per 100,000 in states where delta-8 was unregulated and 0.17 (95% CI 0.06-0.27)[6] where it was

banned, and 12th-grade use was 14.4%[243] in states without delta-8 rules against 5.7%[243] in states that regulated it. These are associations, not proof of cause, but they point the same way.

EXHIBIT 32

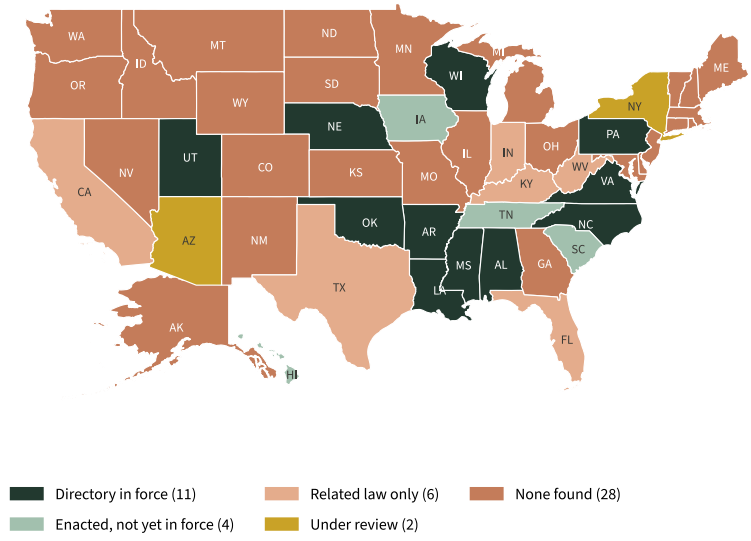
Where delta-8 was regulated, harms and youth use were lower



Source: The Wiley Rule research database[6,243]

EXHIBIT 33

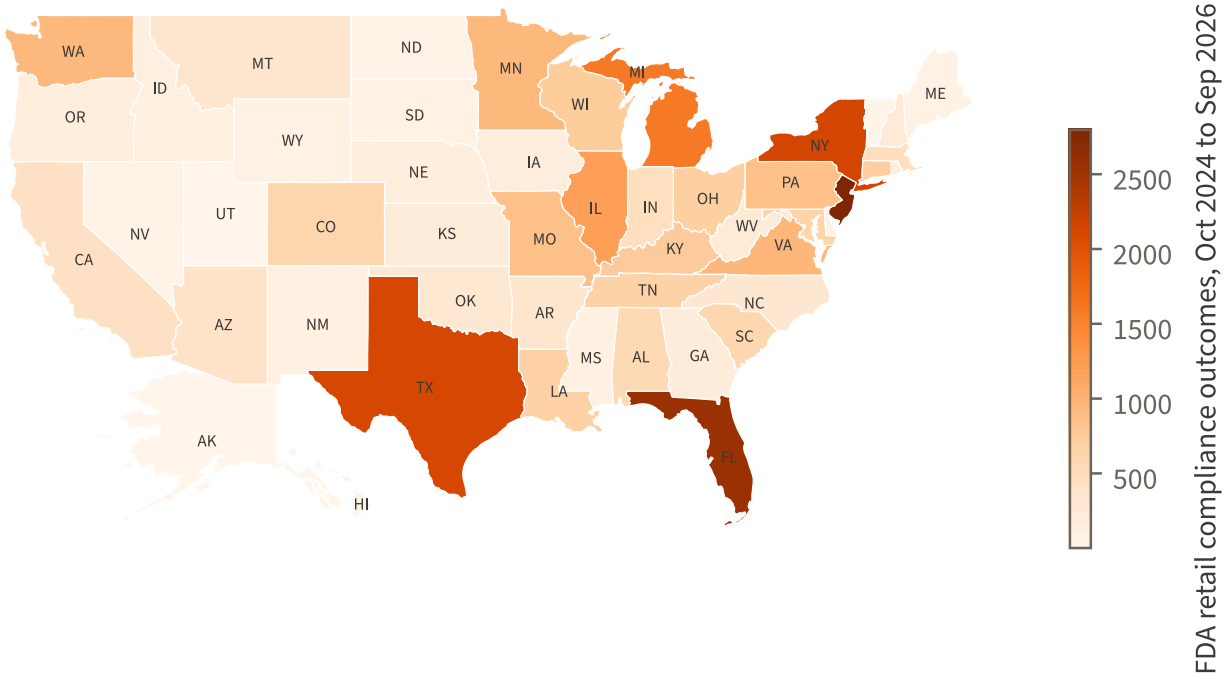
State vape directory laws



Source: The Wiley Rule state tracker; each state's official source is in Appendix A[67,240]

EXHIBIT 34

FDA retail tobacco compliance outcomes by state, October 2024 to September 2026



Source: FDA Tobacco Compliance Check Outcomes (TIMP) [3,240]

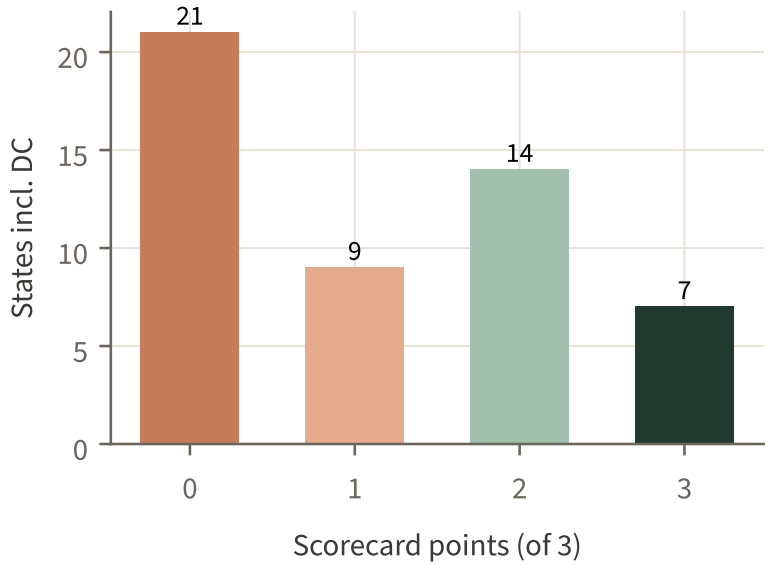
FDA's retail compliance outcomes cluster where people and stores are: New Jersey, Florida, New York and Texas lead the count. Outcomes measure inspection activity as well as violations, so a high count is not by itself evidence of a worse market.

How the scorecard works. Each state gets up to 3 points: 2 for a confirmed ban or scheduling of concentrated 7-OH (1 for limits such as age, labeling or potency rules), and 1 for a state vape directory law in force or enacted. The table also shows FDA retail compliance outcomes (warning letters, civil money penalties and no-sale orders) from FDA's public files for October 2024 to September 2026.[3] The full table is in Appendix A; a summary follows.

Measure	States (incl. DC)
Concentrated 7-OH banned or scheduled	17
7-OH limits passed (age, label, potency)	9
Bill moving	1
No action yet	10
Not confirmed on an official source	14
Vape directory law in force or enacted	15
Scored 3 of 3	7
Scored 0 of 3	21

EXHIBIT 35

How the states score (0 to 3)



Source: The Wiley Rule state scorecard (Appendix A)[67]

SECTION 11

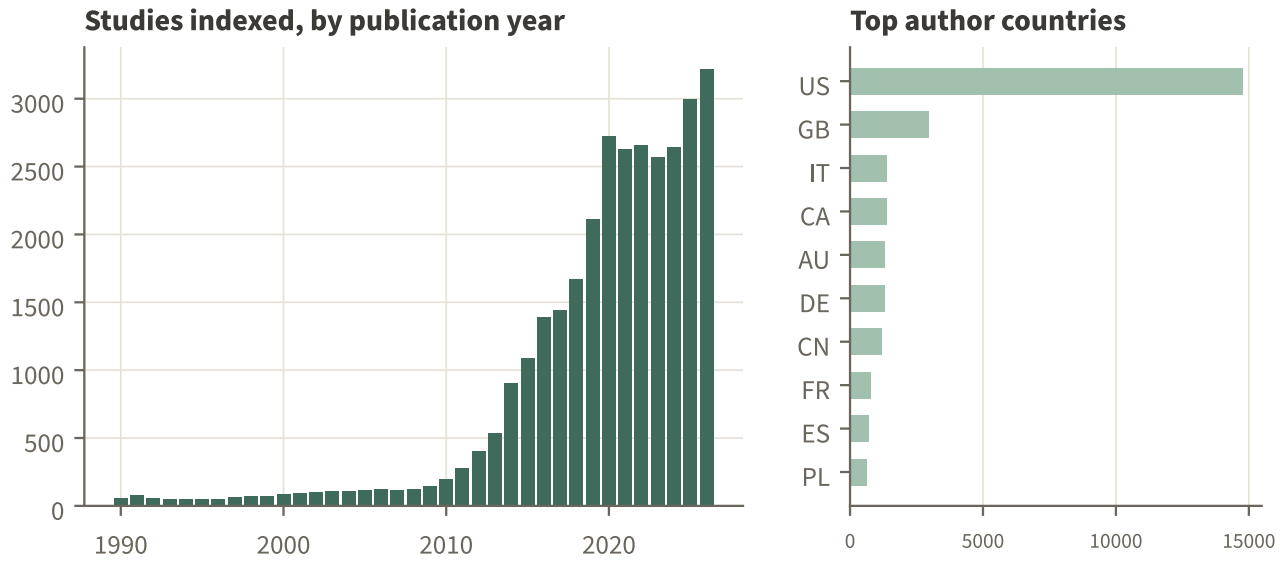
11 The United States versus the world

Others required proof first, and measured use fell

Other countries have already measured what happens when they require proof before sale, or stop the open sale of unlisted psychoactive products, instead of chasing each new molecule after people are hurt. The United States produces more research on these products than any other country, yet trails peers in requiring proof of safety before sale. Our worldwide literature index holds 31,465 studies from Europe PMC and OpenAlex, and authors at US institutions appear on 14,745 of them.[244]

EXHIBIT 36

The world literature index



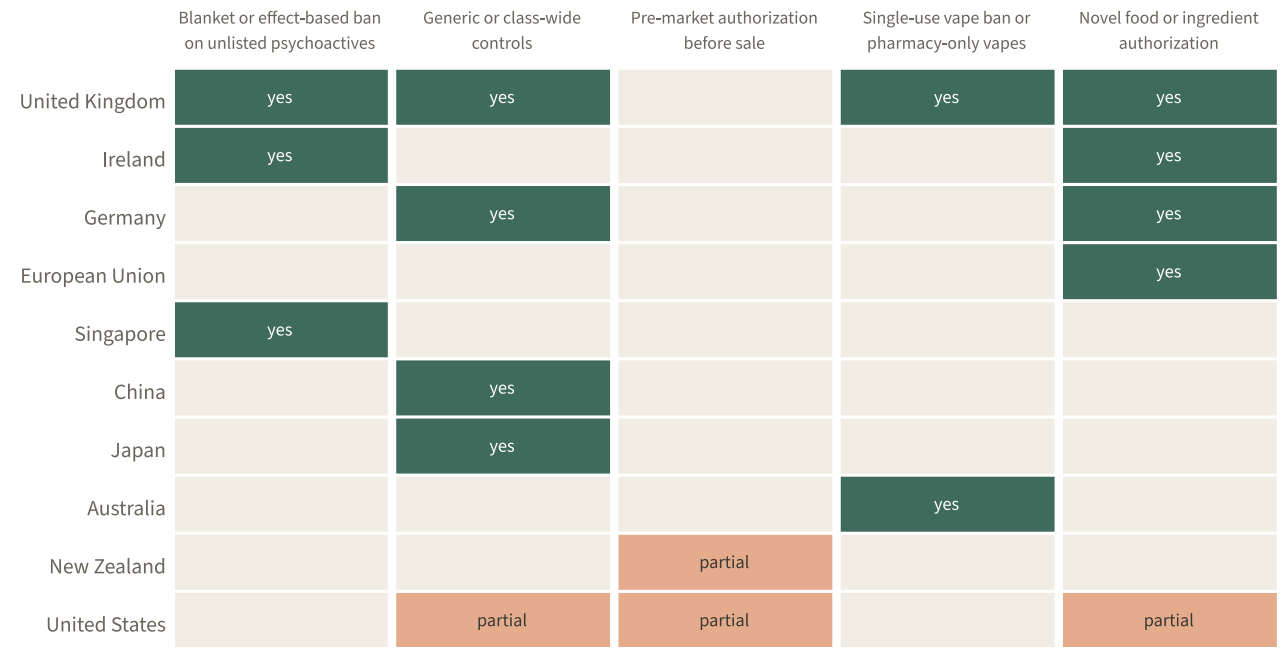
Source: The Wiley Rule literature index (Europe PMC and OpenAlex)[244]

Jurisdiction	Approach	Since	Evidence
United Kingdom	Blanket ban on supplying unlisted psychoactive substances; generic nitazene definition; single-use vape ban	2016	16 to 24 use 2.6% to 1.2%[23]; disposables 69% to 13% of young vapers[245]
Ireland	Criminal ban on selling any psychoactive substance	2010	Ended legal head-shop sales[246]
Germany	Control of whole NPS groups (NpSG)	2016	Groups added and reaction time shortened, 2019[247]

Jurisdiction	Approach	Since	Evidence
European Union	Novel food pre-market authorization	2015 (current rule)	Initial Union list of 125[39] entries
China	Class control of fentanyl-related substances and synthetic cannabinoids	2019, 2021	Synthetic cannabinoid share 68% to 9%[24]
Japan	Designated Substances with generic scheduling	2007	2,480[237] substances designated
Singapore	Control of unlisted psychoactive substances by effect	2024	Effect-based framework[248]
Australia	Vapes only through pharmacies	2024	Non-pharmacy sales banned[249]
New Zealand	Pre-market approval for psychoactive products	2013	Interim sales before approval; no product approved since[40]
United States	Substance-by-substance scheduling; no pre-market review for most products here	1994 framework	5[22] DEA temporary orders in 2026

EXHIBIT 37

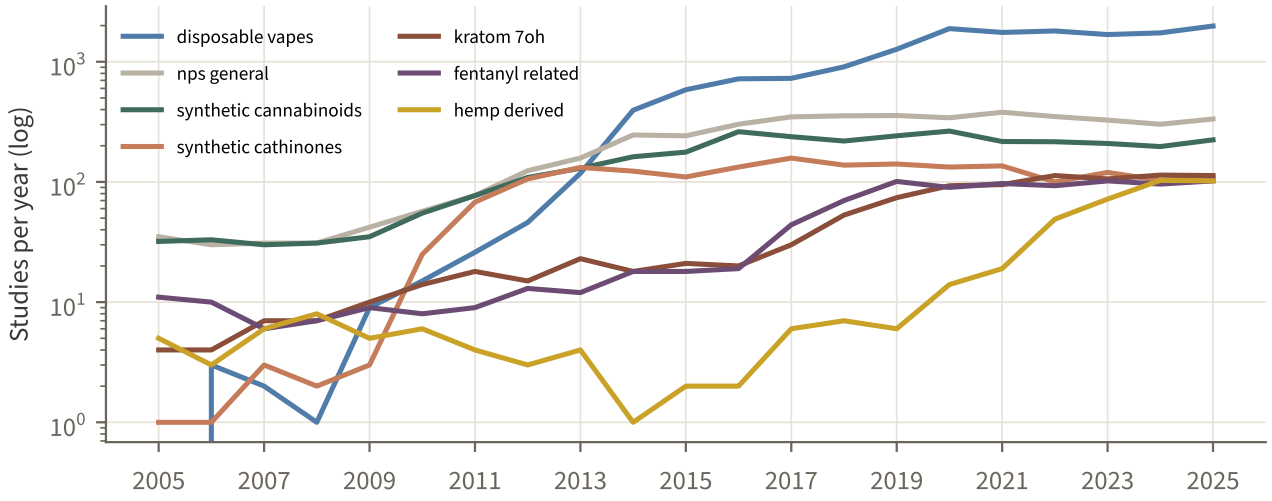
Regulatory tools by country: who requires proof first



Source: The Wiley Rule timeline and the national laws listed[23,24,39,40,220,221,237,238,245,246,247,248,249,250,251,252,253]

EXHIBIT 38

Research output by topic, 2005 to 2025 (studies per year)



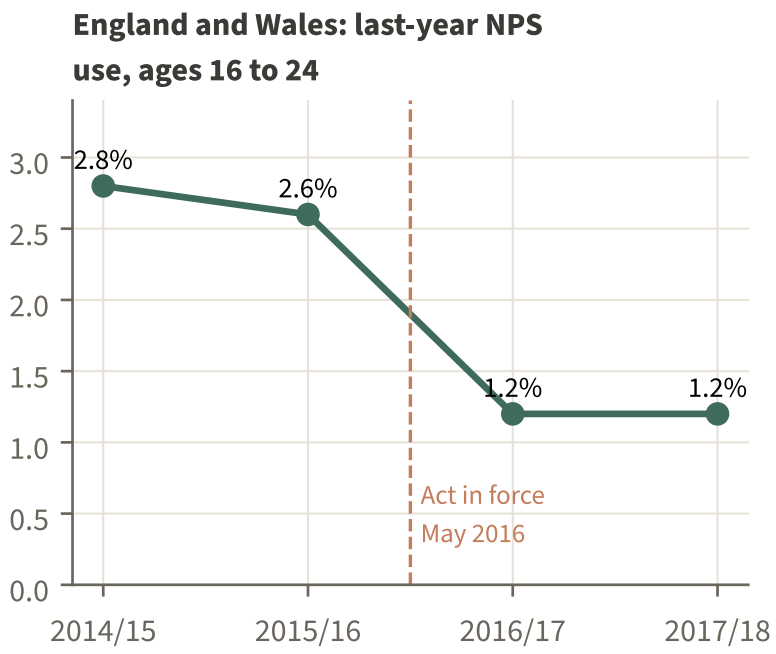
Source: The Wiley Rule literature index (Europe PMC and OpenAlex)[244]

United Kingdom, 2016: a blanket ban on unlisted psychoactive substances

The Psychoactive Substances Act made it an offense to supply any psychoactive substance not otherwise exempted.[23] 332[23] retailers stopped selling these products and 31[23] head shops closed. Last-year use among 16 to 24 year olds fell from 2.6%[23] to 1.2%[23]. The Home Office review found the Act ended open retail but not the whole market.[23] The UK also banned single-use vapes in June 2025; disposables fell from 69%[245] of young vapers' devices in 2023 to 13%[245] in spring 2026.

EXHIBIT 39

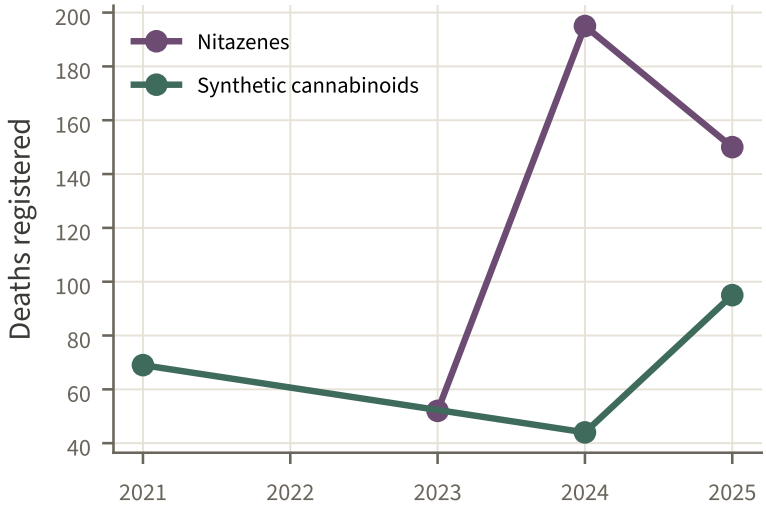
UK young adult NPS use halved after the 2016 Act



Source: The Wiley Rule research database[23]

EXHIBIT 40

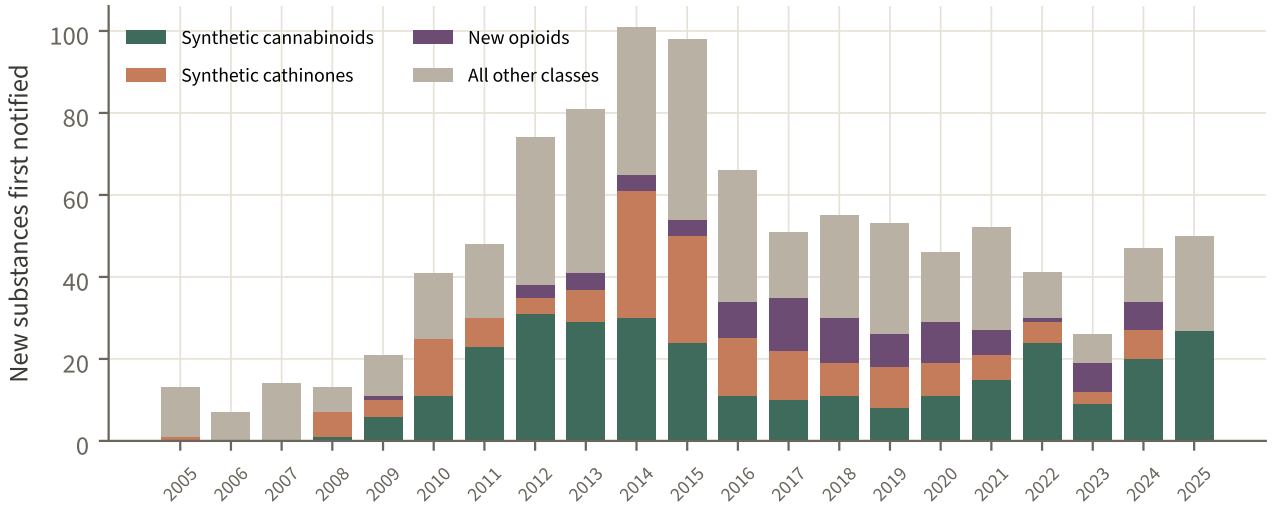
Deaths registered in the UK involving nitazenes and synthetic cannabinoids



Source: Office for National Statistics and National Records of Scotland as listed[254]

EXHIBIT 41

New psychoactive substances first notified in the EU, by class



Source: European Union Drugs Agency (EUDA)[21]

China, 2019 and 2021: class control

China placed all fentanyl-related substances under class control in 2019[250] and all synthetic cannabinoids in 2021.[24] See Section 9 for the result.

Japan: designated substances and generic scheduling

Japan created a Designated Substances category in 2007 to control new psychoactive substances quickly,[237] and as of June 2026 lists 2,480[237] designated substances, 92[237] of them later reclassified as narcotics.

European Union: novel foods must be authorized first

Under the EU Novel Food regulation, a food not widely eaten in the EU before May 1997 must be authorized before it is sold.[39] Germany controls whole NPS groups by structure,[247] Ireland criminalized the sale of any psychoactive substance in 2010,[246] and Singapore began controlling unlisted psychoactive substances by effect in 2024.[248]

New Zealand: the interim-approval lesson

New Zealand's 2013 Psychoactive Substances Act created a pre-market approval system.[251] During a transition, 41 products[255] were allowed on interim approval, 35 of 41[255] of them designed to be smoked, and about 3 to 3.5 million packets were sold in about six months.[255] In May 2014 the interim approvals were revoked, and as of 2025 no product has been approved; the advisory committee reports approvals are unlikely soon because of limits on animal testing.[40,256] An application costs NZ$175,000[257]. The lesson is not that pre-market review fails. It is that products must not be sold before review is complete, and that the review standard must be one a safe product can actually meet.

12

SECTION 12

Who is behind it

The supply chain behind the harm, from government and court records

Rules for this section. A company, association or person appears only if a government or court record names them: FDA warning letters and import alerts, Justice Department and DEA releases, indictments and court filings, state attorney general actions, US International Trade Commission notices, a Senate report, SEC filings, and Lobbying Disclosure Act and FEC filings. Each entry states the record type. Warning letters, import alert listings, complaints, civil investigative demands, indictments and trade case respondent status are allegations or agency positions, not findings of liability or guilt. Settlements noted here carry no admission of liability unless the record says so. News was used only to find records, never as a source.

The supply chain behind the harm in this report is not a mystery. Parts of it are already named in government and court records. A listing, complaint or suit is not a finding of guilt.

Section 14 shows how these records connect into one network, and Section 15 shows how rarely the laws against selling these products are enforced.

What we hold

Item	Count
Actors (companies, associations, individuals)	260 (167 companies, 23 associations, 70 individuals)
Government and court records	301
FDA import alert (red list) entries	112
Federal lobbying clients with LDA totals	37
Individuals named in enforcement records	21
Individuals named only on FDA import alerts	49

How the supply chain works, as the records show it

Concentrated 7-OH and semi-synthetic kratom. A small number of US brand owners and Kansas City-area distributors. FDA's seven 2025 warning letters went to the firms in the table below. The Missouri Attorney General alleges that Shaman Botanicals (American Shaman) makes RRR Trading's 7-OH products.[258] Leaf supply is overseas: FDA Import Alerts 54-15 and 66-41 list 105 kratom firms and persons, listed by country: Indonesia 53, United States 41, Canada 6, Malaysia 3, Philippines 1, Thailand 1.

Illegal disposable vapes. Made mainly in Shenzhen and Guangdong, moved by US master distributors and wholesalers, then sold in stores. A 2026 USITC investigation names foreign makers and US importers and distributors as respondents.[25] [9] FDA and CBP said the illegal products in the largest 2025 seizure came almost entirely from China.[212] The Senate investigation found that the maker of the leading youth brand rebranded about two weeks after FDA's May 2023 import alert and had never received an FDA warning letter.[53]

Intoxicating hemp. Many small US makers and online sellers. FDA sent 23 warning letters from 2022 to 2025, 11 jointly with the FTC.

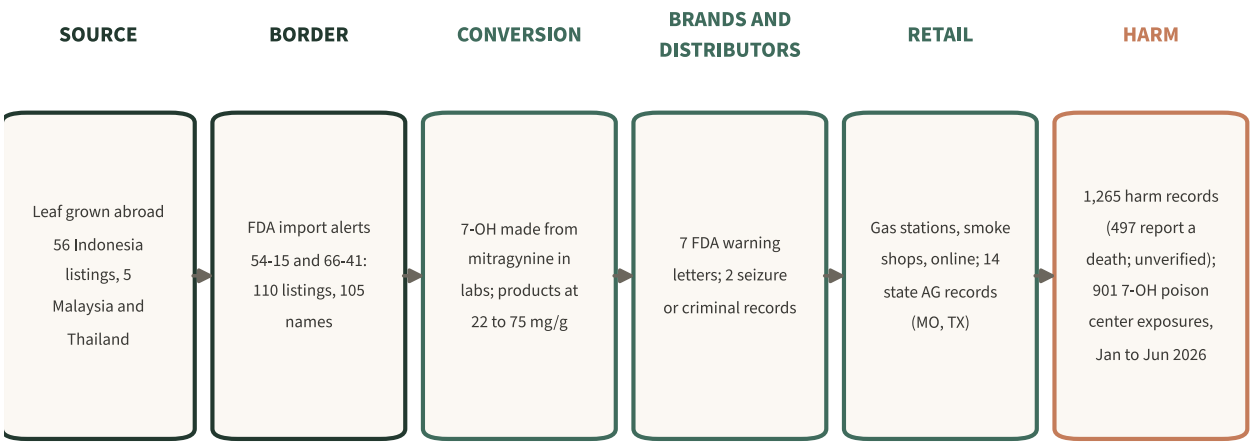
Tianeptine and nitazenes. Bulk tianeptine from Chinese suppliers on FDA Import Alert 66-66; one US online seller convicted in 2023, with a $2.4 million forfeiture.[260] Nitazene cases are wholesale trafficking indictments of China-based chemical suppliers; we found no retail-brand nitazene enforcement record.

Tracing the supply chain

The diagrams in this part follow each product family from where it is made to where harm is recorded, using only public records: FDA import alert listings, warning letters, seizures, court and trade cases, and harm reports. Each box counts records, not proven wrongdoing. Listing on an import alert is an agency action, not a finding of guilt; complaints and suits are allegations; settlements are labeled with any "no admission of liability" terms they contain.

EXHIBIT 42

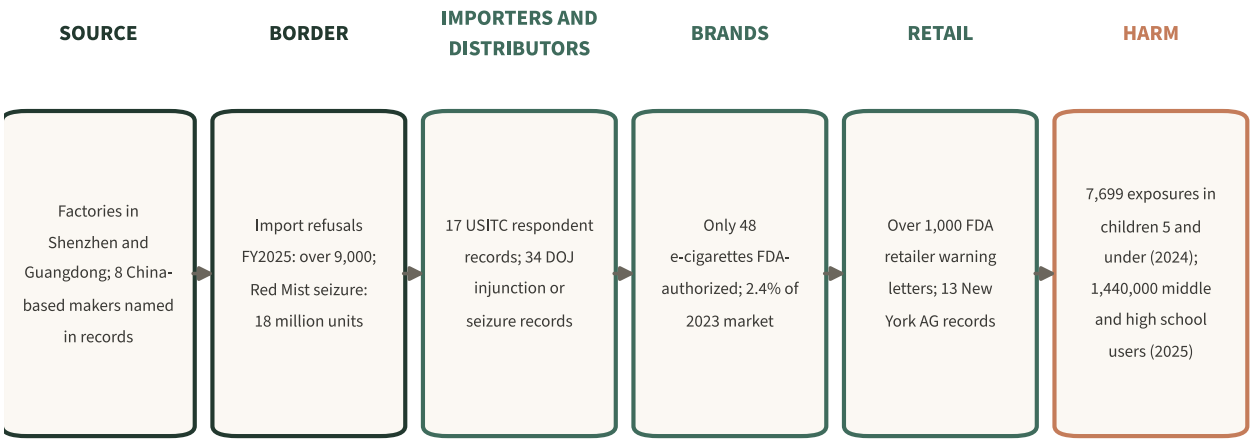
Trace: concentrated 7-OH and kratom, from source country to harm record



Source: FDA import alerts and warning letters, Justice Department and state attorney general records, harm database (counts of records, not findings of guilt) [2,34,64,217]

EXHIBIT 43

Trace: illegal disposable vapes, from factory to harm record

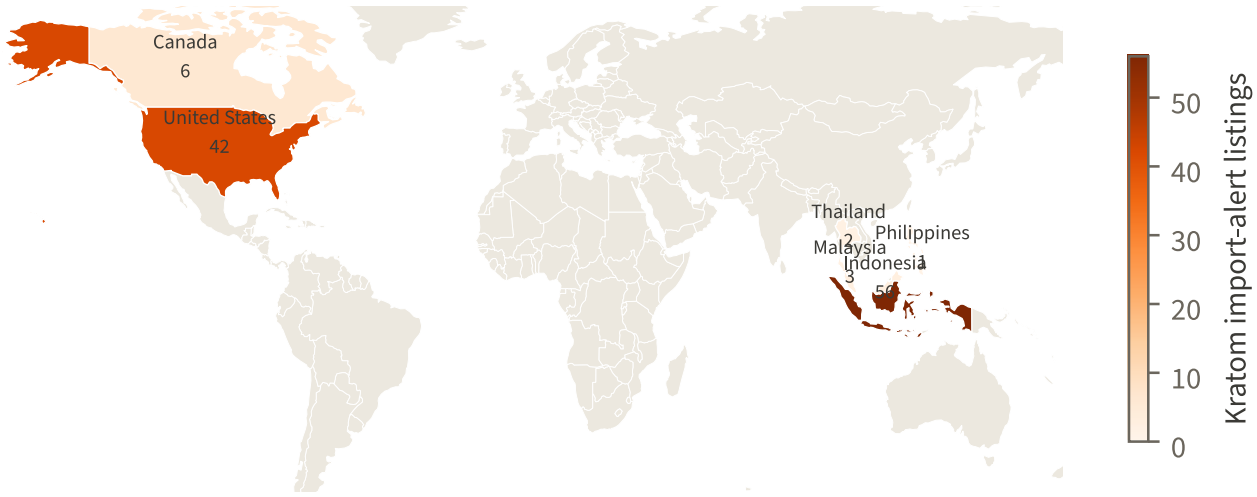


Source: USITC, FDA, CBP, Senate PSI and state records as listed (counts of records, not findings of guilt) [4,12,13,27,36,53,213,259]

Where the kratom import listings come from. FDA's kratom import alerts hold 110 listings. Our actor records identify 56 firms and 49 individuals among the listed parties, located in 6 countries as listed (Exhibit 45 counts listings, so a party listed on both alerts appears twice). Indonesia (56) and the United States (42) account for most. The full register is in Appendix D.

EXHIBIT 44

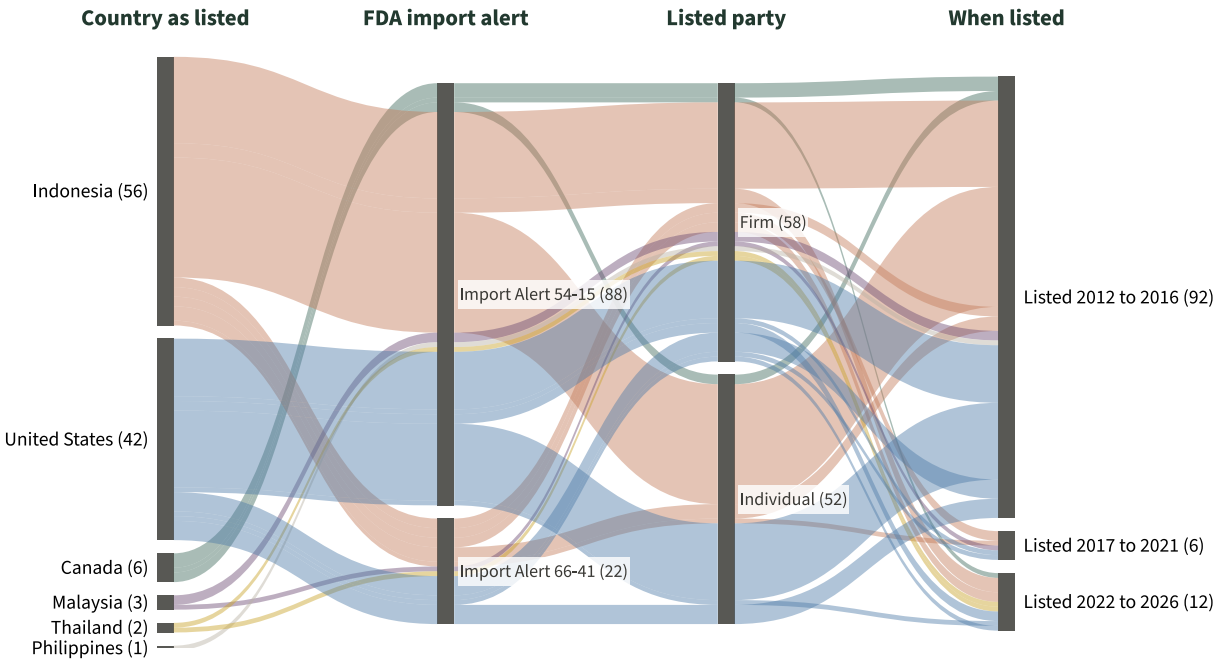
Kratom import alert listings by country as listed



Source: FDA Import Alerts 54-15 and 66-41; boundaries Natural Earth (public domain) [217,218,261]

EXHIBIT 45

Import alert listings traced from country to alert, party type and listing period



Source: FDA Import Alerts 54-15 and 66-41 (a listing is not a finding of guilt)[217,218]

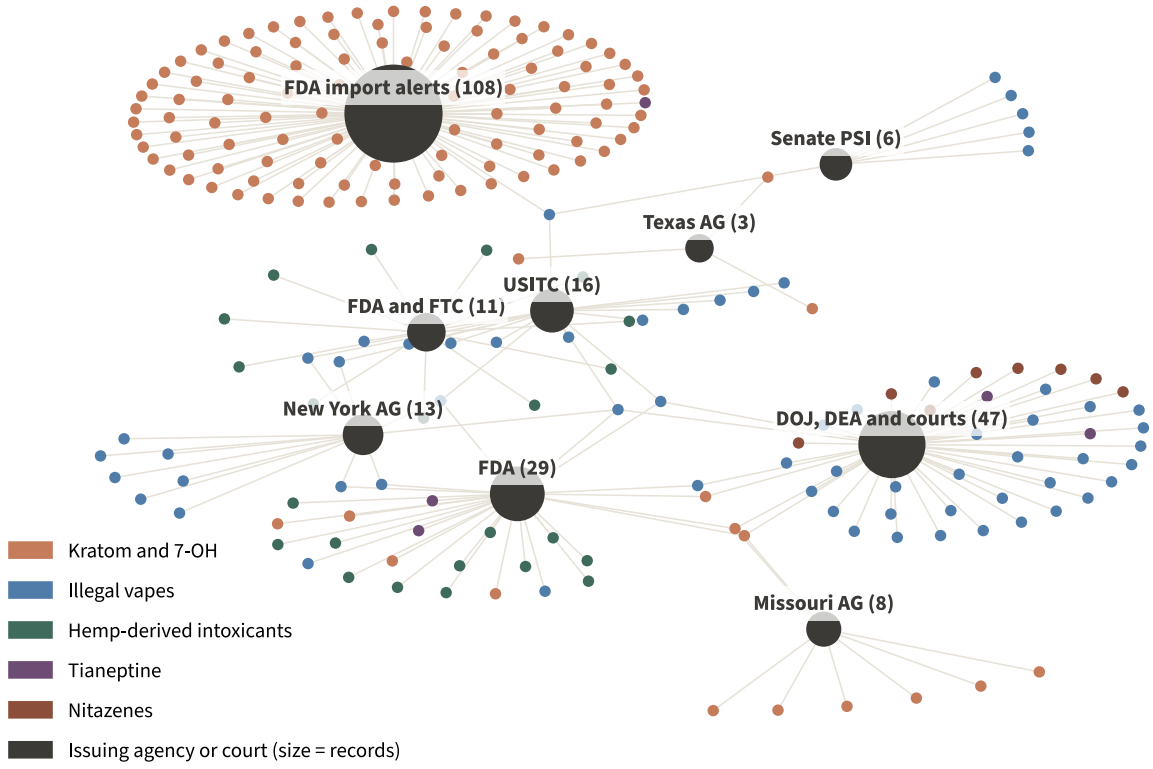
Country as listed	Listings	54-15	66-41	First listed
Indonesia	56	46	10	2012
United States	42	32	10	2015
Canada	6	6	0	2014
Malaysia	3	2	1	2014
Thailand	2	1	1	2024
Philippines	1	1	0	2016

FDA Import Alerts 54-15 and 66-41. A listing is an agency action, not a finding of guilt.[217,218]

Who issues the records. The network diagram links each issuing agency or court to the parties named in its records, colored by product family. FDA import alerts and FDA warning letters dominate by count; the Justice Department, DEA and courts, state attorneys general and the US International Trade Commission add the cases that go further. The timeline shows the records by year and type.

EXHIBIT 46

Who issues the records: agencies and courts linked to the parties they name



Source: The Wiley Rule actor records (big tobacco filers excluded by policy)[262]

EXHIBIT 47

Government and court records by year and type



Source: The Wiley Rule actor records[262]

Companies named in enforcement records

Concentrated 7-OH and kratom (15)

Company	Record (type, issuer, date)	Status
7Tabz Retail, LLC US	FDA warning letter, FDA Human Foods Program, 2025-06-25[263] FDA press release, FDA, 2025-07-15[64]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
CBD American Shaman LLC Kansas City, MO	State AG lawsuit (petition), Missouri Attorney General, 2026-03-31[264]	Allegation (complaint, petition, demand or seizure action)
Get Plugged Missouri	State AG civil investigative demand, Missouri Attorney General, 2025-12[265]	Allegation (complaint, petition, demand or seizure action)
Hydroxie, LLC US	Federal court filing (RECAP), U.S. District Court S.D. Cal., 2025[266] FDA warning letter, FDA Human Foods Program, 2025-06-25[267] FDA press release, FDA, 2025-07-15[64]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Kratom Bunny Vape and More O'Fallon, MO	State AG civil investigative demand, Missouri Attorney General, 2025-12[265]	Allegation (complaint, petition, demand or seizure action)
My Smoke Wholesale Houston, TX	FDA warning letter, FDA Human Foods Program, 2025-06-25[268] FDA press release, FDA, 2025-07-15[64]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Outcast Distribution, LLC California	State AG lawsuit (petition), Texas Attorney General, 2026-04-21[269]	Allegation (complaint, petition, demand or seizure action)

Company	Record (type, issuer, date)	Status
Pure Leaf Kratom, LLC California	State AG lawsuit (petition), Texas Attorney General, 2026-04-21[269]	Allegation (complaint, petition, demand or seizure action)
Relax Relief Rejuvenate Trading, LLC (RRR Trading / EDP Kratom) Kansas City area, MO	FDA warning letter, FDA Human Foods Program, 2025-06-25[270] FDA press release, FDA, 2025-07-15[64] DOJ press release / seizure complaint (W.D. Mo.), DOJ Civil Division; USAO W.D. Mo.; FDA, 2025-12[38] State AG civil investigative demand, Missouri Attorney General, 2025-12[265] State AG lawsuit (petition), Missouri Attorney General, 2026-05-07[271] State AG settlement, Missouri Attorney General, 2026-06-10[272]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action); Settlement (no admission unless stated)
Royal Diamond Imports, Inc. (Roxytabs.com) Dallas, TX	FDA warning letter, FDA Human Foods Program, 2025-06-25[273] FDA press release, FDA, 2025-07-15[64]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Shaman Botanicals, LLC (American Shaman) Kansas City, MO	FDA warning letter, FDA Human Foods Program, 2025-06-25[215] FDA press release, FDA, 2025-07-15[64] DOJ press release / seizure complaint (W.D. Mo.), DOJ Civil Division; USAO W.D. Mo.; FDA, 2025-12[38] State AG lawsuit (petition), Missouri Attorney General, 2026-03-31[258] State AG settlement, Missouri Attorney General, 2026-06-04[274]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action); Settlement (no admission unless stated)
SmokeTokz Missouri	State AG civil investigative demand, Missouri Attorney General, 2025-12[265]	Allegation (complaint, petition, demand or seizure action)
Smokey's Paradise Midlothian, TX	State AG lawsuit (petition), Texas Attorney General, 2026-02-09[275]	Allegation (complaint, petition, demand or seizure action)
Sunshine Ventures Inc. western Missouri	State AG civil investigative demand, Missouri Attorney General, 2025-12[265]	Allegation (complaint, petition, demand or seizure action)
Thang Botanicals, Inc. (7OHMZ) US (state not stated in record summary)	FDA warning letter, FDA Human Foods Program, 2025-06-25[276] FDA press release, FDA, 2025-07-15[64]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)

Illegal and unauthorized vapes (45)

Company	Record (type, issuer, date)	Status
10 Days, Inc. (Pod Juice) US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Allegation (complaint, petition, demand or seizure action)
A Joint Effort, Inc. (Blvd Smoke Shop) Miami, FL	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)

Company	Record (type, issuer, date)	Status
B&G Trading LLC (Vaportech Wholesale) Phoenix, AZ	FDA warning letter, FDA Center for Tobacco Products, 2022-10-14[279] DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Boosted LLC US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2024-06-12[9]	Allegation (complaint, petition, demand or seizure action)
Bouslimi Holdings, Inc. (Marathon/Food Center) Tampa, FL	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Breeze Smoke, LLC US	FDA press release (warning letters), FDA CTP, 2023-05-25[280]	Agency position (warning letter)
Calle 8 Petroleum LLC (UGAS/Circle K) Miami, FL	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
D&A Distribution, LLC (Strictly E-Cig) Savannah, GA	FDA warning letter, FDA Center for Tobacco Products, 2023-10-06[281] DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action); Allegation (trade case respondent)
Dream Distro LLC Garner, NC	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
DS Vaping China	Senate report, U.S. Senate PSI, 2024-02-29[53]	Congressional report finding
ECTO World LLC (Demand Vape) US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (complaint, petition, demand or seizure action); Allegation (trade case respondent)
EVO Brands LLC and PVG2 LLC (Puff Bar) US	FDA warning letter, FDA Center for Tobacco Products, 2022-10-06[282] State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Geek Miracle (HK) Limited Hong Kong	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Gorilla Vapes LLC New Jersey	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)

Company	Record (type, issuer, date)	Status
Guangdong Qisitech Co., Ltd. Dongguan, Guangdong, China	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Headway Funding Inc. (Jewel Distribution) Agoura Hills, CA	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Heaven Gifts International Ltd. Shenzhen, China	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
iMiracle (Shenzhen) Technology Co. Ltd. (Elf Bar / Lost Mary maker) Shenzhen, China	FDA press release (import alert), FDA, 2023-06-22[283] Senate report, U.S. Senate Permanent Subcommittee on Investigations, 2024-02-29[53] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent); Congressional report finding; Listed on FDA import alert (not a finding of guilt)
iMiracle HK Limited Hong Kong	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Lucky's Convenience & Tobacco LLC (Lucky's Vape & Smoke Shop) US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
Magellan Technology Inc. US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (complaint, petition, demand or seizure action); Allegation (trade case respondent)
Midwest Goods Inc. (Midwest Distribution) Bensenville, IL	FDA warning letter, FDA Center for Tobacco Products, 2025-01-08[284] State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277] DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action); Allegation (trade case respondent)
Morin Enterprises Inc. (E-Cig Crib) US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
Mylé Vape Inc. and MVH I, Inc. (MYLE) US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Allegation (complaint, petition, demand or seizure action)
Price Point Distributors Inc. (Price Point NY) US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Allegation (complaint, petition, demand or seizure action)

Company	Record (type, issuer, date)	Status
Progressive Retail Inc. (Rainbow Food Mart) Tampa, FL	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
PSM101, LLC (Center Point Distributors) South Plainfield, NJ	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Puff Bar (Cool Clouds Distribution) US (brand); China-made products	Senate report, U.S. Senate PSI, 2024-02-29[53]	Congressional report finding
RZ Smoke Inc. Suffield, CT	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Safa Goods, LLC US	FDA warning letter, FDA Center for Tobacco Products, 2023-10-05[285] State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277] Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action); Allegation (trade case respondent)
Seditious Vapours LLC (Butt Out) US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
Shenzhen Daosen Steam Technology Co., Ltd. China	Senate report, U.S. Senate PSI, 2024-02-29[53]	Congressional report finding
Shenzhen Geekvape Technology Co., Ltd (Geek Bar) Shenzhen, China	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Shenzhen Innokin Technology Co. Ltd. (Esco Bars) Shenzhen, China	FDA press release (warning letters), FDA CTP, 2023-05-25[280]	Agency position (warning letter)
Smoke House Sunset Los Angeles, CA	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Soul Vapor LLC US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
Super Vape'z LLC US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
SV3, LLC (Mi-One Brands) US	FDA warning letter, FDA Center for Tobacco Products, 2022-12-02[286] State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Agency position (warning letter); Allegation (complaint, petition, demand or seizure action)
Tampa Vapor Tampa, FL	DOJ press release / civil injunction complaint, DOJ Civil Division; FDA; ATF; U.S. Marshals, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)

Company	Record (type, issuer, date)	Status
Texas Central Distribution LLC Houston, TX	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Unishow USA, Inc. Houston, TX	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)
Vape Junkie Ejuice US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2023-12-04[9]	Allegation (complaint, petition, demand or seizure action)
Vapor Craft LLC US	DOJ/FDA permanent injunction complaint, FDA CTP; DOJ, 2022-10-18[9]	Allegation (complaint, petition, demand or seizure action)
YLSN Distribution Inc. (Happy Distro) US	State AG lawsuit (federal complaint), New York Attorney General, 2025-02-20[277]	Allegation (complaint, petition, demand or seizure action)
Zhuhai Qisitech Co., Ltd. Zhuhai, Guangdong, China	Federal Register notice (USITC Section 337 investigation), U.S. International Trade Commission, 2026-03-03[259]	Allegation (trade case respondent)

Hemp-derived intoxicants (23)

Company	Record (type, issuer, date)	Status
ATLRx, Inc. US	FDA warning letter, FDA, 2022-05-04[287]	Agency position (warning letter)
BioMD Plus LLC US	FDA warning letter, FDA, 2022-05-04[288]	Agency position (warning letter)
Delta 8 Hemp US	FDA warning letter, FDA, 2022-05-04[289]	Agency position (warning letter)
Delta Munchies LLC US	FDA warning letter (joint with FTC), FDA and FTC, 2023-07-05[223]	Agency position (warning letter)
Discover Health, LLC d/b/a Discover CBD and Strain Snobs US	FDA warning letter, FDA, 2023-11-16[290]	Agency position (warning letter)
Dr. Smoke, LLC aka Dr. S, LLC US	FDA warning letter (joint with FTC), FDA and FTC, 2023-06-29[291]	Agency position (warning letter)
Earthly Hemps US	FDA warning letter (joint with FTC), FDA and FTC, 2024-07-15[292]	Agency position (warning letter)
Exclusive Hemp Farms/Oshipt.com US	FDA warning letter (joint with FTC), FDA and FTC, 2023-06-29[293]	Agency position (warning letter)
GCHNC LLC dba Hemp XR/Gate City Hemp dba Hemp XR/Allaziya Enterprises, LLC dba Hemp XR US	FDA warning letter, FDA, 2023-09-28[294]	Agency position (warning letter)
Hippy Mood US	FDA warning letter (joint with FTC), FDA and FTC, 2024-07-15[295]	Agency position (warning letter)
Kingdom Harvest US	FDA warning letter, FDA, 2022-05-04[296]	Agency position (warning letter)

Company	Record (type, issuer, date)	Status
Koi CBD, LLC US	FDA warning letter, FDA, 2023-07-18[297]	Agency position (warning letter)
Latro Inc. US	FDA warning letter, FDA, 2025-03-25[298]	Agency position (warning letter)
Life Leaf Medical CBD Center US	FDA warning letter (joint with FTC), FDA and FTC, 2024-07-15[299]	Agency position (warning letter)
Mary Jane's Bakery Co. LLC FL	FDA warning letter (joint with FTC), FDA and FTC, 2024-07-15[300]	Agency position (warning letter)
Naturally Infused LLC US	FDA warning letter, FDA, 2022-11-16[301]	Agency position (warning letter)
Nikte's Wholesale, LLC US	FDA warning letter (joint with FTC), FDA and FTC, 2023-06-29[302]	Agency position (warning letter)
North Carolina Hemp Exchange, LLC dba NC Hemp Shoppe US	FDA warning letter (joint with FTC), FDA and FTC, 2023-06-29[303]	Agency position (warning letter)
Northland Vapor Company, LLC US	FDA warning letter, FDA, 2023-07-07[304]	Agency position (warning letter)
Shamrockshrooms.com US	FDA warning letter (joint with FTC), FDA and FTC, 2024-07-15[305]	Agency position (warning letter)
The Haunted Vapor Room US	FDA warning letter (joint with FTC), FDA and FTC, 2023-06-29[306]	Agency position (warning letter)
TKO Distribution, LLC US	FDA warning letter, FDA, 2025-04-17[307]	Agency position (warning letter)
White Label Leaf, LLC/Flying Monkey US, LLC US	FDA warning letter, FDA, 2024-07-11[308]	Agency position (warning letter)

Tianeptine (3)

Company	Record (type, issuer, date)	Status
Centera Bioscience (Nootropics Depot) Arizona	DOJ/FDA-OCI press release (sentencing), USAO D.N.H.; FDA OCI, 2024-02-05[260]	Conviction (court record)
Premier Manufacturing Products, LLC (Tianaa) US	FDA warning letter, FDA, 2024-07-02[309]	Agency position (warning letter)
PureRawz US (online)	FDA warning letter, FDA, 2025-09-08[310]	Agency position (warning letter)

Nitazenes (8)

Company	Record (type, issuer, date)	Status
Anhui Moker New Material Technology Co. China	Federal indictment, USAO E.D.N.Y.; DEA, 2023-06[311]	Allegation (charged; presumed innocent)

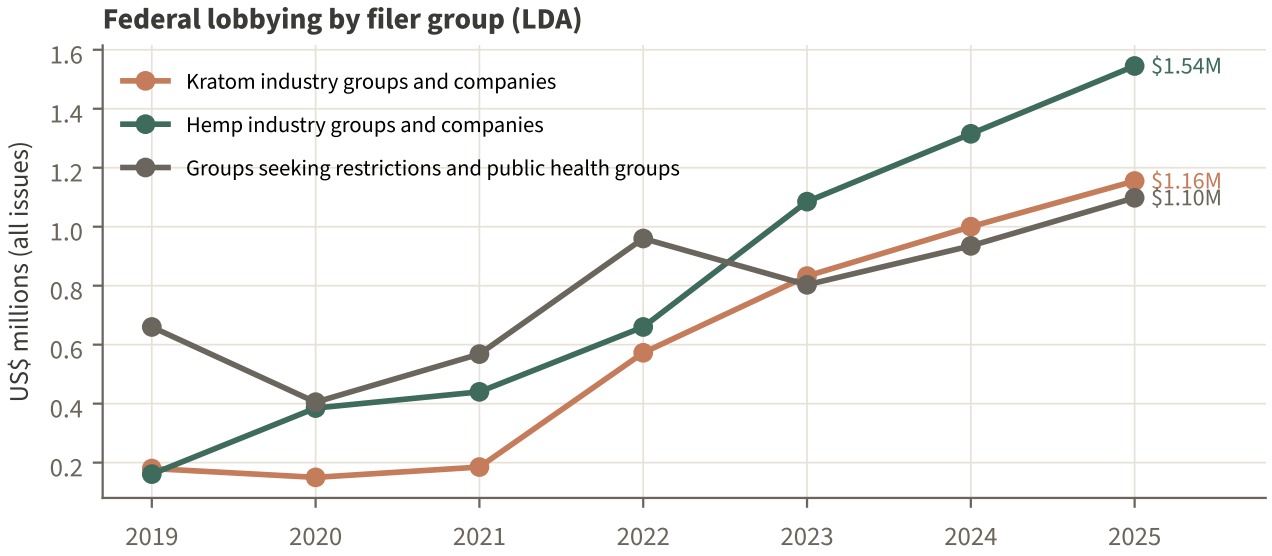
Company	Record (type, issuer, date)	Status
Anhui Rencheng Technology Co., Ltd. China	Federal indictment, USAO E.D.N.Y.; DEA, 2023-06[311]	Allegation (charged; presumed innocent)
Guangzhou Tengyue Chemical Co. Ltd. China	DOJ/DEA indictment press release, DEA; USAO M.D. Fla., 2024-10-24[312]	Allegation (charged; presumed innocent)
Hefei GSK Trade Co., Ltd. China	Federal indictment, USAO E.D.N.Y.; DEA, 2023-06[313]	Allegation (charged; presumed innocent)
Henan Oumeng Trade Co. Ltd. China	DOJ/DEA indictment press release, DEA; USAO M.D. Fla., 2024-10-24[312]	Allegation (charged; presumed innocent)
Jiangsu Jiyi Chemical China	DOJ/DEA indictment press release, DEA; USAO M.D. Fla., 2024-10-24[312]	Allegation (charged; presumed innocent)
Shanghai Senria New Materials Co. Ltd. (Shanghai Senria Biotechnology) China	DOJ/DEA indictment press release, DEA; USAO M.D. Fla., 2024-10-24[312]	Allegation (charged; presumed innocent)
Wuhan Jinshang Import & Export Trading Co. Ltd. China	DOJ/DEA indictment press release, DEA; USAO M.D. Fla., 2024-10-24[312]	Allegation (charged; presumed innocent)

Money: federal lobbying and campaign finance

Lobbying Disclosure Act filings report total spending by each client on all issues it lobbied, not spending on these products alone, and they show issues, not positions. Public health groups lobby too, and are shown for balance.

EXHIBIT 48

Federal lobbying reported by kratom and hemp industry groups and by groups seeking restrictions, 2019 to 2025



Source: The Wiley Rule research database[25,314,315,316,317,318]

Client	Group	2019	2022	2023	2024	2025	2026 (Q1-Q3)
American Kratom Association[25]	Kratom industry groups and companies	180	342	252	550	800	710
Johnson Foods, LLC[319]	Kratom industry groups and companies		210	360	130		
MIT45, Inc.[320]	Kratom industry groups and companies			80	160	140	120
Global Kratom Coalition[314]	Kratom industry groups and companies				120	215	
Botanic Tonics LLC[321]	Kratom industry groups and companies		20	140	40		
U.S. Hemp Roundtable[315]	Hemp industry groups and companies	161	320	320	320	390	460
American Healthy Alternatives Association[316]	Hemp industry groups and companies			60	250	190	560
American Trade Association for Cannabis and Hemp (ATACH)[322]	Hemp industry groups and companies			120	225	375	330
Coalition for Access Now[323]	Hemp industry groups and companies		90	180	180	180	135
3CHI Corporation[324]	Hemp industry groups and companies		130	160	160	160	120
Hemp Industry & Farmers of America (HIFA)[325]	Hemp industry groups and companies					90	525
GVB Biopharma[326]	Hemp industry groups and companies		120	170	100		
Hemp Beverage Alliance[327]	Hemp industry groups and companies					80	150
Mood Product Group LLC[328]	Hemp industry groups and companies			60	80	40	
MAG Industries Ltd.[329]	Hemp industry groups and companies			15		40	30

Client	Group	2019	2022	2023	2024	2025	2026 (Q1-Q3)
Midwest Hemp Council, Inc.[330]	Hemp industry groups and companies						
Juul Labs, Inc.[331]	Vapor industry	6,730	4,184	2,660	1,520	3,950	2,870
Vapor Technology Association[332]	Vapor industry	462	90	180	360	548	510
Turning Point Brands[333]	Vapor industry	200	50		100	200	150
American Vapor Manufacturers[334]	Vapor industry		258	76			
Smoke-Free Alternatives Trade Association (SFATA)[335]	Vapor industry	80					
Smoore International Holdings Limited[336]	Vapor industry						60
Kaival Brands Innovations Group, Inc.[337]	Vapor industry						
National Association of Convenience Stores[338]	Supplement and convenience trade groups	3,720	3,550	3,630	3,802	4,290	3,340
Natural Products Association[339]	Supplement and convenience trade groups	730	840	730	520	560	450
Council for Responsible Nutrition[340]	Supplement and convenience trade groups	560	450	510	540	480	330
Convenience Distribution Association[341]	Supplement and convenience trade groups	140	110	110	120	110	80
American Herbal Products Association[342]	Supplement and convenience trade groups	50	50	50	60	60	40
Campaign for Tobacco-Free Kids[317]	Groups seeking restrictions and public health groups	520	890	603	695	363	190
SAM Action, Inc.[318]	Groups seeking restrictions and public health groups	140	70	200	240	270	210
Stop Gas Station Heroin LLC[343]	Groups seeking restrictions and public health groups					450	450
No Dangerous Intoxicating Products (NODIP)[344]	Groups seeking restrictions and public health groups						60
Holistic Alternative Recovery Trust[345]	Groups seeking restrictions and public health groups					15	
End Kratom Addiction[346]	Groups seeking restrictions and public health groups						10

US$ thousands, all issues reported by the client. Big tobacco filers (Altria, NJOY, RAI Services) are recorded in our database but excluded from this table by organizational policy; see the text.

Hemp Industry and Farmers of America's hybrid PAC reported $2,666,568 in receipts and $2,649,460 in disbursements in the 2025 to 2026 cycle.[347] Individual donors are not named in this report.

Industry filings cited as evidence

By organizational policy, The Wiley Rule does not target the products of Altria (NJOY) or British American Tobacco (Vuse) in its outreach. Their SEC filings are cited here only as evidence about the illegal market: BAT estimates illegal flavored and single-use products are about 70 percent of the US vapor market,[37] and Altria reported $2,128 million in 2025 e-vapor impairments tied in part to ineffective enforcement.[70] BAT's R.J. Reynolds companies are the complainants in the USITC case against Chinese disposable makers.[259]

Enforcement patterns

- **7-OH moved fastest.** Warning letters (June to July 2025), a federal seizure from 2 of the 7 firms (December 2025), Missouri suits and two Missouri settlements with $5 million breach penalties (June 2026), Texas suits against three sellers, and a DEA notice in October 2026.[272,274]
- **Vapes: high volume, low conversion.** Most defendants in the September 2025 sweep had earlier FDA warning letters.[278]
- **Delta-8: letters only** in the records we checked.
- **States fill gaps.** New York's Attorney General sued vape makers and distributors in February 2025; Missouri and Texas lead on 7-OH.

People named in records

21 individuals are named in enforcement records (Justice Department, state attorney general and Senate records) and are listed below with the record type. A further 49 individuals are listed only as shippers or consignees on FDA kratom import alerts; they are listed in Appendix D. An import alert listing means FDA may detain shipments without examination; it is not a finding of guilt or wrongdoing.

Name	Role as stated in the record	Record	Status
Faisal A. Alhadrami	Owner/officer of Dream Distro LLC named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Robert S. Ali	Owner/officer of D&A Distribution, LLC (Strictly E-Cig) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Husam Bahhur	Owner/officer of A Joint Effort, Inc. (Blvd Smoke Shop) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Patrick Beltran	Co-CEO of Puff Bar (per Senate PSI report)	Senate report, 2024-02-29[53]	Congressional report finding
Ataman Bilgin	Owner/officer of B&G Trading LLC (Vaportech Wholesale) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Imed Bouslimi	Owner/officer of Bouslimi Holdings, Inc. (Marathon/Food Center) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)

Name	Role as stated in the record	Record	Status
Varun Chawla	Owner/officer of Progressive Retail Inc. (Rainbow Food Mart) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Paul Eftang	CEO of Centera Bioscience (Nootropics Depot); convicted	DOJ/FDA-OCI press release (sentencing), 2024-02-05[260]	Conviction (court record)
Hasmet Girgin	Owner/officer of B&G Trading LLC (Vaportech Wholesale) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Hamza Jalili	Principal of Price Point Distributors named as NY AG defendant	State AG lawsuit (federal complaint), 2025-02-20[348]	Allegation (complaint, petition, demand or seizure action)
Mohammad Jalili	Principal of Price Point Distributors named as NY AG defendant	State AG lawsuit (federal complaint), 2025-02-20[348]	Allegation (complaint, petition, demand or seizure action)
Nick Jurczyk	Owner/officer of Gorilla Vapes LLC named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Russell Jurczyk	Owner/officer of Gorilla Vapes LLC named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Weis Khwaja	Principal of Price Point Distributors named as NY AG defendant	State AG lawsuit (federal complaint), 2025-02-20[348]	Allegation (complaint, petition, demand or seizure action)
Ali Masoud	Owner/officer of Smoke House Sunset named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Nick Minas	Co-CEO of Puff Bar (per Senate PSI report)	Senate report, 2024-02-29[53]	Congressional report finding
Dustin Robinson	Owner of Relax Relief Rejuvenate Trading LLC (per Missouri AG)	State AG settlement, 2026-06-10[272]	Settlement (no admission unless stated)
Rashid A. Saeed	Owner/officer of Calle 8 Petroleum LLC (UGAS/Circle K) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Michael R. Synychak	Owner/officer of Tampa Vapor named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Niravkumar G. Vora	Owner/officer of PSM101, LLC (Center Point Distributors) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)
Kamran Yasin	Owner/officer of Midwest Goods Inc. (Midwest Distribution) named as DOJ injunction defendant	DOJ press release / civil injunction complaint, 2025-09-25[278]	Allegation (complaint, petition, demand or seizure action)

What the record does not show

- Who owns most brand LLCs; state corporate registries were not pulled in this pass.
- State lobbying and campaign finance.
- FDA's full retailer warning-letter set, which we count in aggregate only.
- Synthetic cannabinoid and cathinone retail prosecutions and adulterated-supplement prosecutions, not yet row-loaded.

13

SECTION 13

Where it is sold

Gas stations, smoke and vape shops, and online, from federal inspection records

The products behind the poisonings in this report are not hidden. They are sold at the same counters as gas, snacks and lottery tickets, in smoke and vape shops, and online. This section uses the federal government's own retail inspection records, state enforcement records and published store audits to show where.

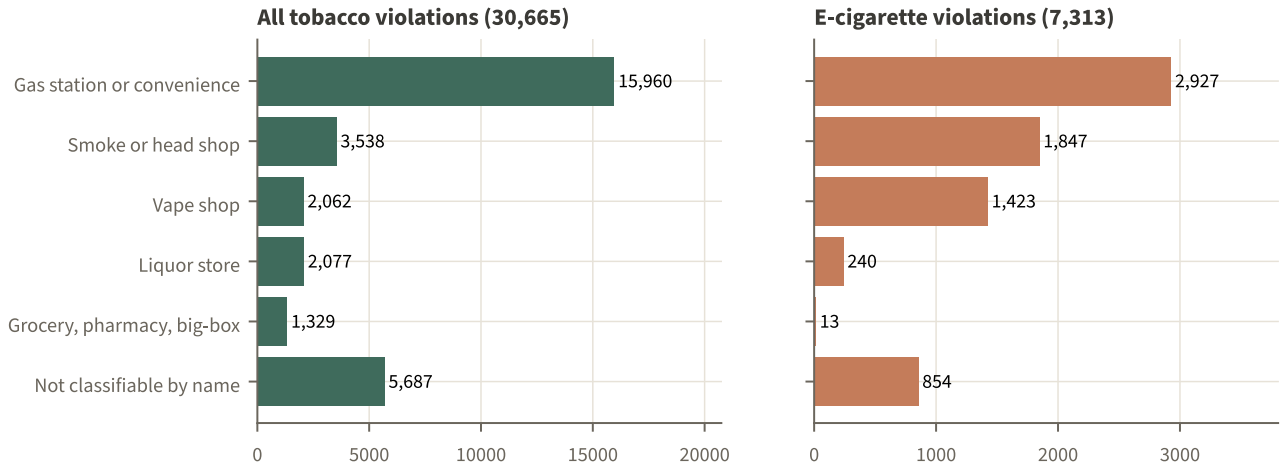
> **The short version.** FDA inspectors recorded 30,665 retail violations from October 2024 to October 2026. About 52 percent were at gas stations and convenience stores. Just 50 led to an order to stop selling.[3]

What the federal retail record shows

FDA's contractors carry out undercover compliance checks at tobacco retailers. From October 1, 2024 to October 31, 2026, FDA made 242,039 compliance-check decisions nationwide. 30,665 found a violation: 22,741 ended in a warning letter, 7,874 in a civil money penalty action and 50 in a no-tobacco-sale order.[3] Most violations are sales to underage buyers. FDA does not record the type of store, so we classified each retailer by its name. 15,960 violations were at gas stations and convenience stores, 3,538 at smoke or head shops, 2,062 at vape shops and 2,077 at liquor stores; 5,687 could not be classified from the name.

EXHIBIT 49

Where FDA found violations: gas stations and convenience stores lead

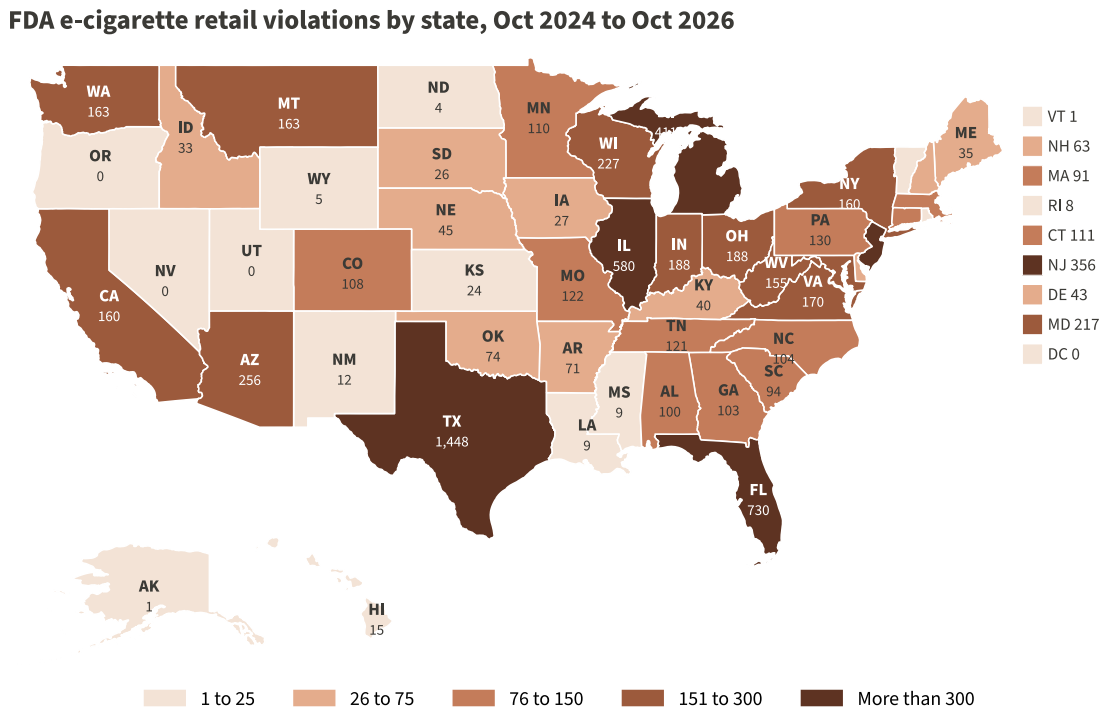


Source: FDA Tobacco Compliance Outcomes, Oct 1, 2024 to Oct 31, 2026. FDA records no store type; channel is inferred from the retailer name, so a share stays unclassified.[3]

E-cigarettes show the same pattern. Of 7,313 e-cigarette violations, 2,927 (40 percent) were at gas stations and convenience stores, 1,847 at smoke shops and 1,423 at vape shops. In 4,912 cases, inspectors recorded a sale of a flavored e-cigarette (other than tobacco or menthol) to an underage buyer. FDA's brand field reads "OTHER" for 5,243 of the e-cigarette violations (72 percent), so the federal record cannot say which disposable brands are being sold.[3]

EXHIBIT 50

Where FDA inspectors found e-cigarette violations, by state



Count of FDA retail compliance-check decisions with an e-cigarette violation. FDA: violation data cannot be readily compared across states; counts reflect where inspections were done.

Source: FDA Tobacco Compliance Outcomes, Oct 1, 2024 to Oct 31, 2026 (retail research dataset state_map.json); state shapes from the US Census Bureau.[3,240]

> FDA cautions that its violation data cannot be readily compared across states. Counts reflect where its contractors inspected, not where products are sold most. Each state's totals are in Appendix E.

How common these products are on shelves

No federal agency counts how many stores sell concentrated 7-OH, kratom, intoxicating hemp or tianeptine. Published audits fill part of the gap. In a 2024 national phone survey, 71.5 percent of 520 tobacco and vape specialty stores said they sold kratom.[8] In Cleveland, stores observed selling kratom rose from 29 in 2023 to 132 in 2025, a third of all tobacco retailers in the city.[349] In three large cities, stores that sold e-cigarettes had 3.2 times the odds of also selling THC.[350]

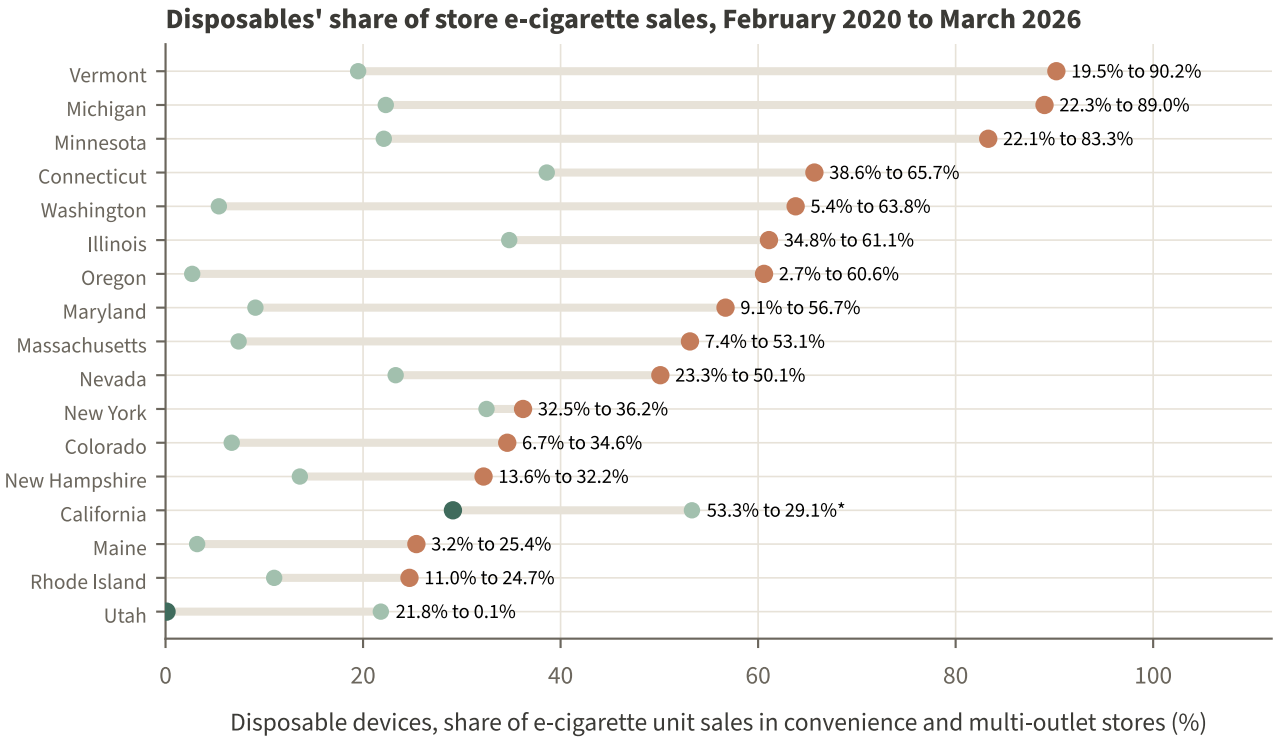
Where	What was measured	Result	When
US (national)	Share of tobacco and vape specialty stores reporting kratom sales (phone survey, 10 stores per state and territory, n=520)	72%[8]	2024
OH	Cleveland tobacco retailers observed selling kratom	132 (33% of tobacco retailers), up from 29 in 2023[349]	2025
OH	Cleveland tobacco retailers carrying hemp-derived psychoactive cannabis products (random sample n=82)	41.5%[351]	Oct 2022 to Jan 2023
NY; CA; PA	Licensed tobacco retailers with THC available (NYC, San Francisco, Philadelphia; n=1,402 visited)	9.8% THC; 9.8% CBD[350]	Jun to Dec 2023
FL	Packages of concentrated 7-OH removed from retail	17,311 packages, 23 counties[72]	Aug to Sep 8, 2025
AL	Retail search warrants and kratom seized	83 warrants; 63,995 bottles plus about 59,000 warehouse doses[352]	May to Jun 2026
AZ	Average tobacco retailer failure rate in AG underage compliance checks since 2016	13%[353]	2016 to Jul 2025

Disposables took over store shelves

Retail scanner data from convenience and multi-outlet stores show disposables rising from a small share of e-cigarette sales in 2020 to most of them by 2026 in many states, including Michigan, Minnesota and Vermont. In Utah and California, the disposable share fell. Scanner data do not cover vape shops or online sales, and the trend lines show association, not cause.

EXHIBIT 51

Disposables took over store e-cigarette sales in most states with scanner data



Source: CDC Foundation state sales brief, Issue 18 (Circana scanner data, 4-week periods ending Feb 2, 2020 and Mar 22, 2026; *California starts Dec 4, 2022). Excludes vape shops and online sales. Light dot is the start, dark dot the end.[354]

The same stores, again and again

At least 542 retail addresses in 36 states and territories had two or more FDA e-cigarette violation decisions between October 2024 and October 2026: 486 had two and 56 had three or four.[3] These counts are a floor, because violations recorded under two major brands outside the scope of this section were left out before counting. The states with the most repeat addresses were TX (89), IL (87), MI (56), FL (43), NJ (34), MD (24), AZ (22), CA (16), WA (16), VA (13). The addresses with three or more decisions are listed below as FDA named them. A decision is an administrative action, not a court finding.

Retailer as named by FDA	City, state	E-cig violation decisions	Outcomes recorded	First to last decision
Kaleidosmok	Rolla, MO	4	Civil Money Penalty	2024-10-17 to 2026-04-07
Ecig Vapor Juice Store	Helena, MT	4	Civil Money Penalty	2024-10-10 to 2026-06-25
Bug Tussle Marketplace	Bremen, AL	3	Civil Money Penalty	2024-12-02 to 2026-09-23
Gravitate Smoke Shop	Chandler, AZ	3	Civil Money Penalty; Warning Letter	2025-01-21 to 2026-03-10
Noah Smoke Shop	Phoenix, AZ	3	Civil Money Penalty; Warning Letter	2024-10-01 to 2026-01-27
Sky Zone Smoke Shop	Redwood City, CA	3	Civil Money Penalty; Warning Letter	2024-12-03 to 2025-11-26
209 Zozo Smoke Shop	Stockton, CA	3	Civil Money Penalty	2024-11-26 to 2026-06-09
Mohegan Smoke Shop	Stamford, CT	3	Civil Money Penalty; Warning Letter	2024-12-10 to 2026-08-11
Smoke Shop	Jacksonville, FL	3	Civil Money Penalty; Warning Letter	2024-12-12 to 2026-10-16

Retailer as named by FDA	City, state	E-cig violation decisions	Outcomes recorded	First to last decision
Jax Smoke N Vape	Jacksonville, FL	3	Civil Money Penalty; Warning Letter	2025-10-02 to 2026-08-11
87 Food Mart	Pensacola, FL	3	Civil Money Penalty; Warning Letter	2025-05-15 to 2026-02-25
Ez Save Food Mart	Pensacola, FL	3	Civil Money Penalty; Warning Letter	2025-05-06 to 2026-10-02
One Puff Tobacco & Vape	Aurora, IL	3	Civil Money Penalty; Warning Letter	2025-07-31 to 2026-04-23
Faris Smoke Shop	Chicago, IL	3	Civil Money Penalty	2024-10-10 to 2026-02-02
Shady'S Vape N Smoke	Freeport, IL	3	Civil Money Penalty; Warning Letter	2025-10-07 to 2026-07-13
Smokey'S Vapes & Tobacco	Matteson, IL	3	Civil Money Penalty; Warning Letter	2025-02-13 to 2026-03-03
Alien Smoke & Vape	Mount Prospect, IL	3	Civil Money Penalty; Warning Letter	2025-10-28 to 2026-09-08
Vortex Vapes Smoke Shop	Northbrook, IL	3	Civil Money Penalty	2025-03-19 to 2026-06-16
Columbus Smoke Shop	Ottawa, IL	3	Civil Money Penalty; Warning Letter	2025-08-19 to 2026-09-28
Snk Fuels	Palatine, IL	3	Civil Money Penalty; Warning Letter	2024-10-15 to 2026-01-02
4&20 Cloud Smoke N Vape	Woodstock, IL	3	Civil Money Penalty; Warning Letter	2025-01-02 to 2026-02-04
Tobacco & Vapor	Terre Haute, IN	3	Civil Money Penalty; Warning Letter	2024-10-01 to 2026-07-15
Tobacco Outfitters Smoke Shop	Big Rapids, MI	3	Civil Money Penalty; Warning Letter	2024-10-08 to 2026-09-22
Mr. Shop Smoke & Vape	Grand Blanc, MI	3	Civil Money Penalty; Warning Letter	2025-03-04 to 2026-05-05
Puff Puff Tobacco	Lansing, MI	3	Civil Money Penalty; Warning Letter	2024-11-01 to 2026-05-14
Milan Smoke Shop / Citgo	Milan, MI	3	Civil Money Penalty; Warning Letter	2025-01-14 to 2026-09-24
Puff Puff Tobacco	Mount Pleasant, MI	3	Civil Money Penalty; Warning Letter	2025-11-24 to 2026-09-29
Smokerz Town	Ypsilanti, MI	3	Civil Money Penalty; Warning Letter	2024-10-08 to 2026-01-28
Puff Zone Smoke Shop	Farmington, MO	3	Civil Money Penalty	2024-12-26 to 2026-01-21
Juicity Vapor	Billings, MT	3	Civil Money Penalty; Warning Letter	2025-04-22 to 2026-09-17
406 Glass & Vape	Bozeman, MT	3	Civil Money Penalty; Warning Letter	2025-02-27 to 2026-08-03
Vape Smoking Shop	Columbia Falls, MT	3	Civil Money Penalty; Warning Letter	2026-01-06 to 2026-10-05
Sam'S Hookah Outlet Llc	Manchester, NH	3	Civil Money Penalty	2025-08-15 to 2026-10-06
Run Way / Food Mart	Atco, NJ	3	Civil Money Penalty; Warning Letter	2024-12-03 to 2026-03-19
Linwood Wine & Liquor	Fort Lee, NJ	3	Civil Money Penalty; Warning Letter	2024-12-19 to 2026-03-18
Lukoil / Mini-Mart	Franklin Lakes, NJ	3	Civil Money Penalty; Warning Letter	2024-12-17 to 2026-06-04
Smokey Mart	Hackettstown, NJ	3	Civil Money Penalty; Warning Letter	2025-04-01 to 2026-08-03
South Main Mini Mart	Lodi, NJ	3	Civil Money Penalty; Warning Letter	2024-11-19 to 2025-12-31
Welsh Farms Deli & Convenience	Ocean, NJ	3	Civil Money Penalty	2024-10-31 to 2026-10-14
Sky Smoke Shop	Buffalo, NY	3	Civil Money Penalty; Warning Letter	2025-07-03 to 2026-10-15
Smoke Shop	New York, NY	3	Civil Money Penalty; Warning Letter	2024-10-03 to 2026-10-21
Bp	Cincinnati, OH	3	Civil Money Penalty; Warning Letter	2024-11-07 to 2026-04-16
Smoke Players	Daingerfield, TX	3	Civil Money Penalty; Warning Letter	2025-02-11 to 2026-02-04
Quick & Easy 1	El Campo, TX	3	Civil Money Penalty; Warning Letter	2025-02-27 to 2026-03-20
Ez Shop	Fort Worth, TX	3	Civil Money Penalty; Warning Letter	2024-11-26 to 2026-03-04
Underground Vapes	Gainesville, TX	3	Civil Money Penalty; Warning Letter	2025-08-19 to 2026-05-19
Cosmic Smoke	Hickory Creek, TX	3	Civil Money Penalty	2024-12-06 to 2026-06-11
Puff Club	Kyle, TX	3	Civil Money Penalty; Warning Letter	2025-03-20 to 2026-02-24
Smoke One	Mesquite, TX	3	Civil Money Penalty	2025-03-11 to 2026-06-11
Sunoco / Metro Express	San Antonio, TX	3	Civil Money Penalty; Warning Letter	2024-10-10 to 2026-01-23
Cozy'S Smoke & Vape Shop	San Antonio, TX	3	Civil Money Penalty; Warning Letter	2025-09-11 to 2026-05-14
Victoria Smoke Shop	Victoria, TX	3	Civil Money Penalty; Warning Letter	2025-03-13 to 2026-04-15

Retailer as named by FDA	City, state	E-cig violation decisions	Outcomes recorded	First to last decision
Empire Smoke Shop	Seattle, WA	3	Civil Money Penalty; Warning Letter	2024-10-22 to 2026-10-08
Tobacco Plus	Antigo, WI	3	Civil Money Penalty	2024-10-16 to 2026-01-15
The Vapour Lounge	Wausau, WI	3	Civil Money Penalty; Warning Letter	2025-01-16 to 2026-02-10
Smoker'S Den	Keyser, WV	3	Civil Money Penalty; Warning Letter	2025-09-02 to 2026-08-21

Source: FDA Tobacco Compliance Outcomes[3]; each decision has an FDA docket on regulations.gov. Outcomes are administrative decisions; retailers may contest a civil money penalty complaint.

Concentrated 7-OH, kratom, hemp and tianeptine

For the other product groups, the record comes from state actions. Florida removed 17,311 packages of concentrated 7-OH from stores in 23 counties within weeks of its 2025 emergency rule, with inspectors targeting gas stations, vape shops and convenience stores.[72] Alabama's Attorney General says retailers kept selling kratom after a March 2026 cease-and-desist order, and officers then executed 83 search warrants at retail locations.[352] In West Tennessee, investigators allege one distributor was a major supplier of kratom products to gas stations, vape shops and convenience stores, and confiscated nearly 30,000 packages.[355] Louisiana's second Operation Vape Out found kratom and tianeptine alongside illegal vapes in New Orleans-area shops.[356] Each is an allegation or an administrative action unless a court has ruled.

Online. FDA has filed civil money penalty complaints against 46 online retailers for selling unauthorized tobacco products.[9] FDA warning letters to 7-OH, kratom, tianeptine and hemp sellers, listed in Section 12, are another part of the online record.

14

SECTION 14

Who supplies it: the network

From foreign maker to store counter, linked only by government and court records

Section 12 lists the companies named in government and court records. This section shows how they connect. We traced every company, person, brand and enforcement action we could tie to a government or court record into a single network, so a reader can follow a product from its foreign maker or importer to the brand, the distributor, the store and the enforcement record.

> **Rules for this network.** Every link cites a government or court record: FDA warning letters, import alerts and recall notices, Justice Department releases, indictments, state attorney general petitions, complaints, civil investigative demands and settlements, a US International Trade Commission notice, a Senate report, and a state-court wrongful-death complaint. News was used only to find records. People appear only as named in those records. Each link carries its legal status: complaints, petitions, trade-case respondent status, import alert listings and warning letters are allegations or agency positions, not findings of guilt. Settlements carry no admission unless stated; the Illinois Posh defendants expressly denied the allegations. Big tobacco companies are excluded by organizational policy.

What the network holds

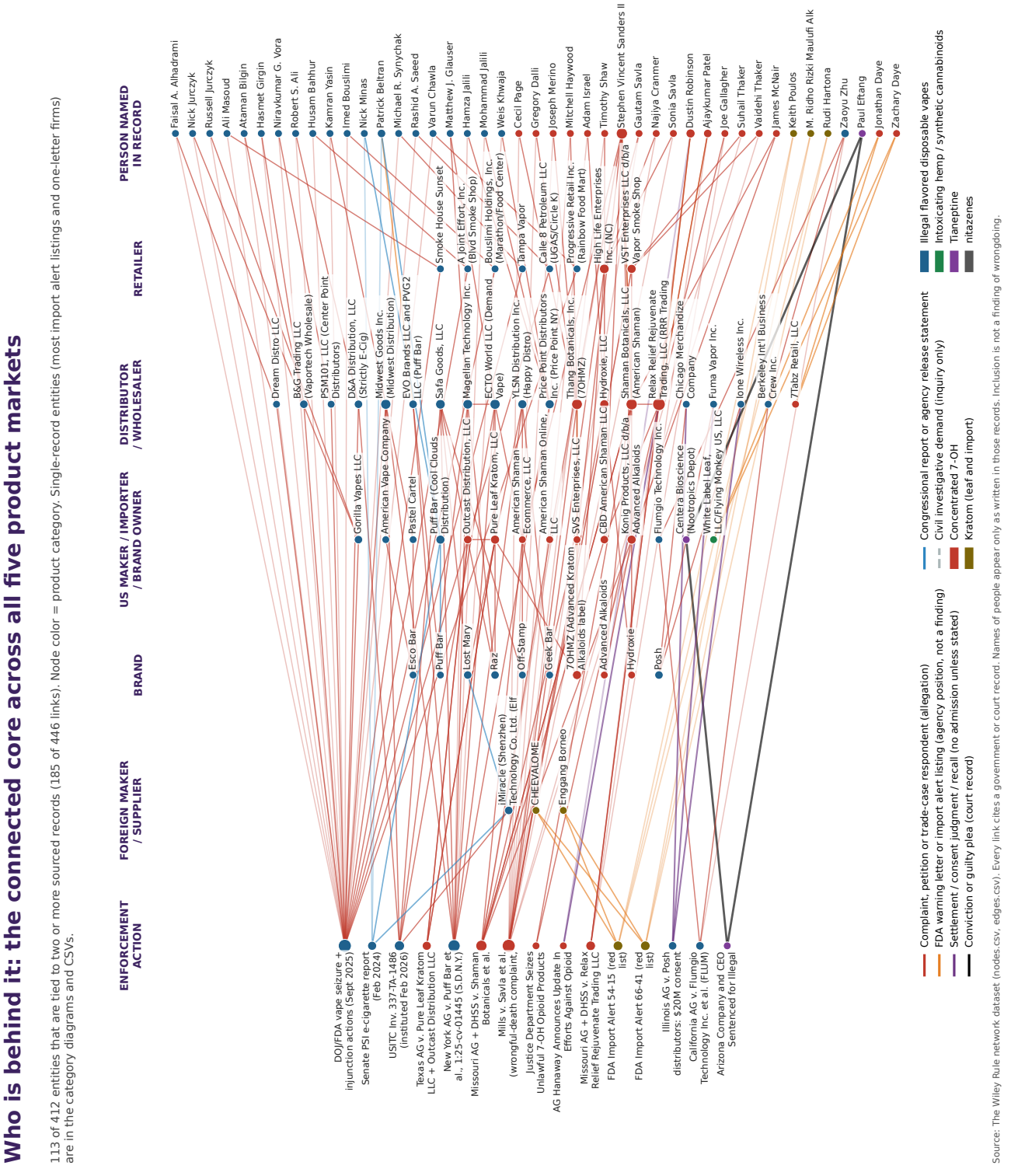
Item	Count
Entities	412 (191 companies, 125 people named in records, 25 brands, 71 enforcement or agency actions)
Links, each tied to a government or court record	446
Distinct source documents	76
complaint (allegation)	192
import alert listing (agency position, not a finding)	112
warning letter (agency position, not a finding)	81
trade case respondent (allegation, no decision on merits)	16
congressional report (findings of a committee, not a court)	11
indictment (allegation)	8
civil investigative demand (inquiry, no allegation of liability)	6
settlement (no admission unless stated)	4

Item	Count
conviction (court record)	3
settlement; defendants denied the allegations	3
seizure complaint (allegation)	2
warning letter / import alert (agency position, not a finding)	2
voluntary recall (company announcement)	2
guilty plea (court record)	2
conviction (court record), firearm count only	1
stated in USAO release	1

The overview below shows the connected core: the entities tied to two or more sourced records. The diagrams that follow show each product market on its own page.

EXHIBIT 52

The connected core of the supply chain across all product markets



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. 9,38,53,215,217,218,223,258,259,260,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,348,357,358,359,360,361,362,363,364,365,366,367,368,369,370

Key clusters in the records

The table summarizes what the records say about the most connected parts of the network. Every item is an allegation, agency position or settlement unless it says conviction or guilty plea.

Cluster	What the records say	Records
Kansas City 7-OH hub	Missouri AG and DHSS petition alleges one owner controls six related entities that make and white-label 7-OH for other distributors; FDA warning letters (June 2025); DOJ seizure of about 73,000 units (Dec 2025); settlements suspending Missouri sales with $5 million breach penalties, no admission of liability (June 2026).	264 38 274
7OHMZ path to Charlotte	FDA letter to Thang Botanicals d/b/a 7OHMZ; Texas AG alleges 7OHMZ tablets were sold by Pure Leaf Kratom, operated by Outcast Distribution (California); a wrongful-death complaint filed by a family in Mecklenburg County alleges Charlotte smoke shops sold 7OHMZ and Hydroxie. All allegations.	276 358 266
One Tampa address	FDA letters to a 7-OH seller (2025) and a delta-8 seller (2024) are addressed to the same two people at the same Tampa address.	263 308
Vape import spine	NY AG complaint alleges an importer buys from China for a national distributor and holds major brand marks; Senate PSI report names the Shenzhen maker of Elf Bar and Lost Mary; several of the same firms are USITC respondents.	277 53 259
Warned, and kept selling	Midwest Goods: FDA warning letter (Jan 2025), NY AG suit (Feb 2025), DOJ seizure and injunction (Sept 2025), USITC respondent (2026). D&A Distribution and B&G Trading: letters in 2022 and 2023, DOJ action in 2025.	284 281 279 278
California FLUM pipeline	California AG alleges a Hong Kong firm sells FLUM to an importer in City of Industry that resells to California wholesalers.	361
Gas station suits	New Mexico sued Circle K, OXXO USA, DK and other convenience operators and distributors over flavored disposables; DOJ's 2025 sweep names station operators; Illinois settled with Posh distributors for $20 million (defendants denied the allegations).	364 278 362
Kratom import alerts	FDA Import Alerts 54-15 and 66-41: 110 listings covering 105 firms and persons (53 in Indonesia, 41 in the US). A listing lets FDA detain shipments; it is not a finding of guilt.	217 218
Tianeptine	An Arizona company and its CEO were sentenced for illegal distribution of tianeptine and other drugs; a California man pleaded guilty to smuggling from China; FDA warning letters and a recall followed; a Chinese supplier is on Import Alert 54-16.	260 369 370

Warned, and kept selling. The clearest pattern in the network is time. Several vape distributors received FDA warning letters years before any court action. Midwest Goods received a warning letter in January 2025, was sued by New York in February 2025, had products seized in a Justice Department action in September 2025, and was named as a trade-case respondent in 2026. In the 2025 sweep, the Justice Department said the firms had prior FDA warnings.[278]

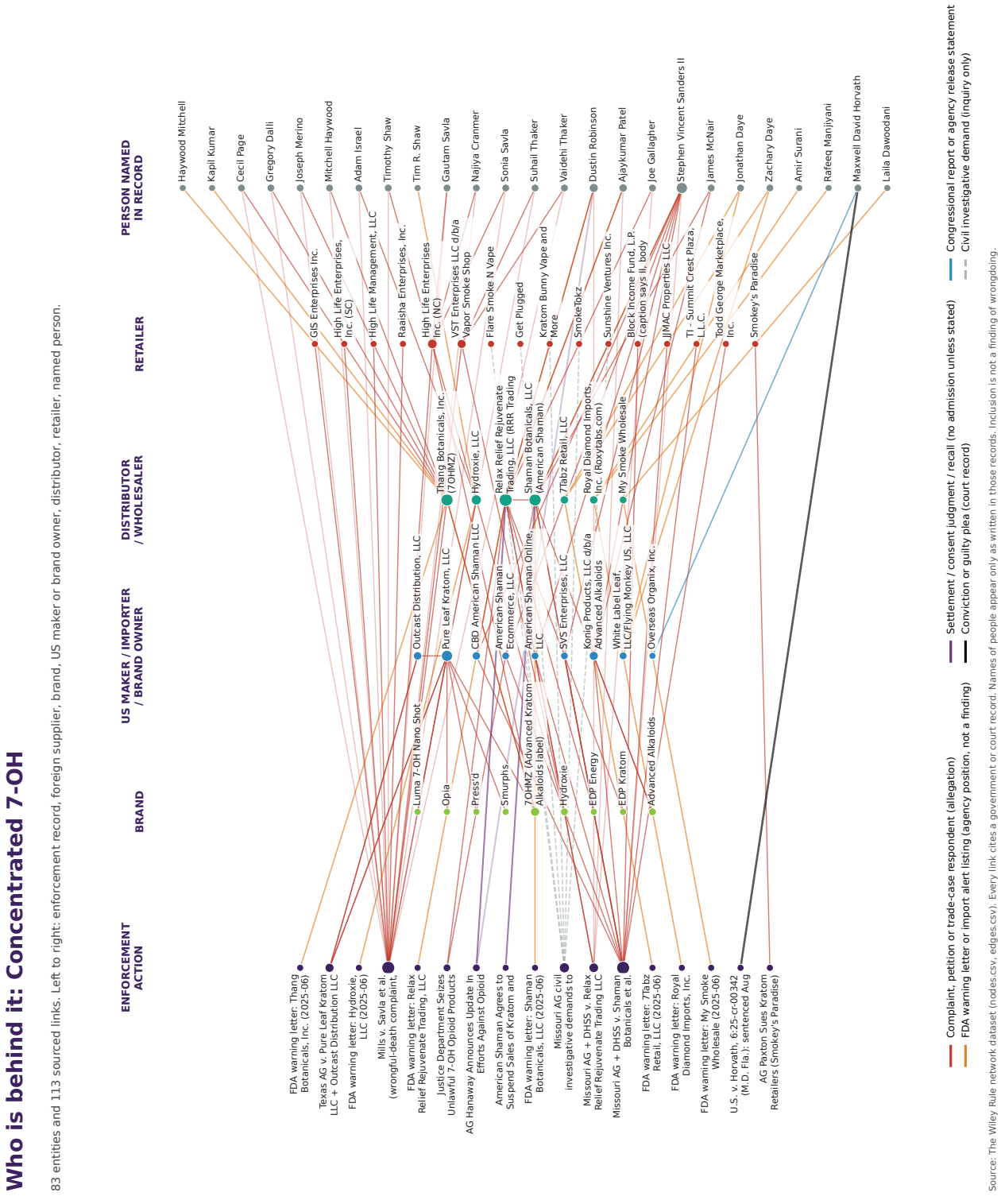
Florida 7-OH warehouse. The US Attorney for the Middle District of Florida says a company called Overseas Organix sold 7-OH, which is Schedule I in Florida, and that more than 91,000 pounds of kratom were seized. Its owner's conviction is for firearms possession only.[359]

What the network cannot yet show. Few public records name which distributor supplied which store, so the distributor-to-retailer layer is thin. Secretary of State and UCC filings were not pulled directly. Some seizures, including CBP's Operation Red Mist, name no seller and are not in the network.

Each market on its own

EXHIBIT 53

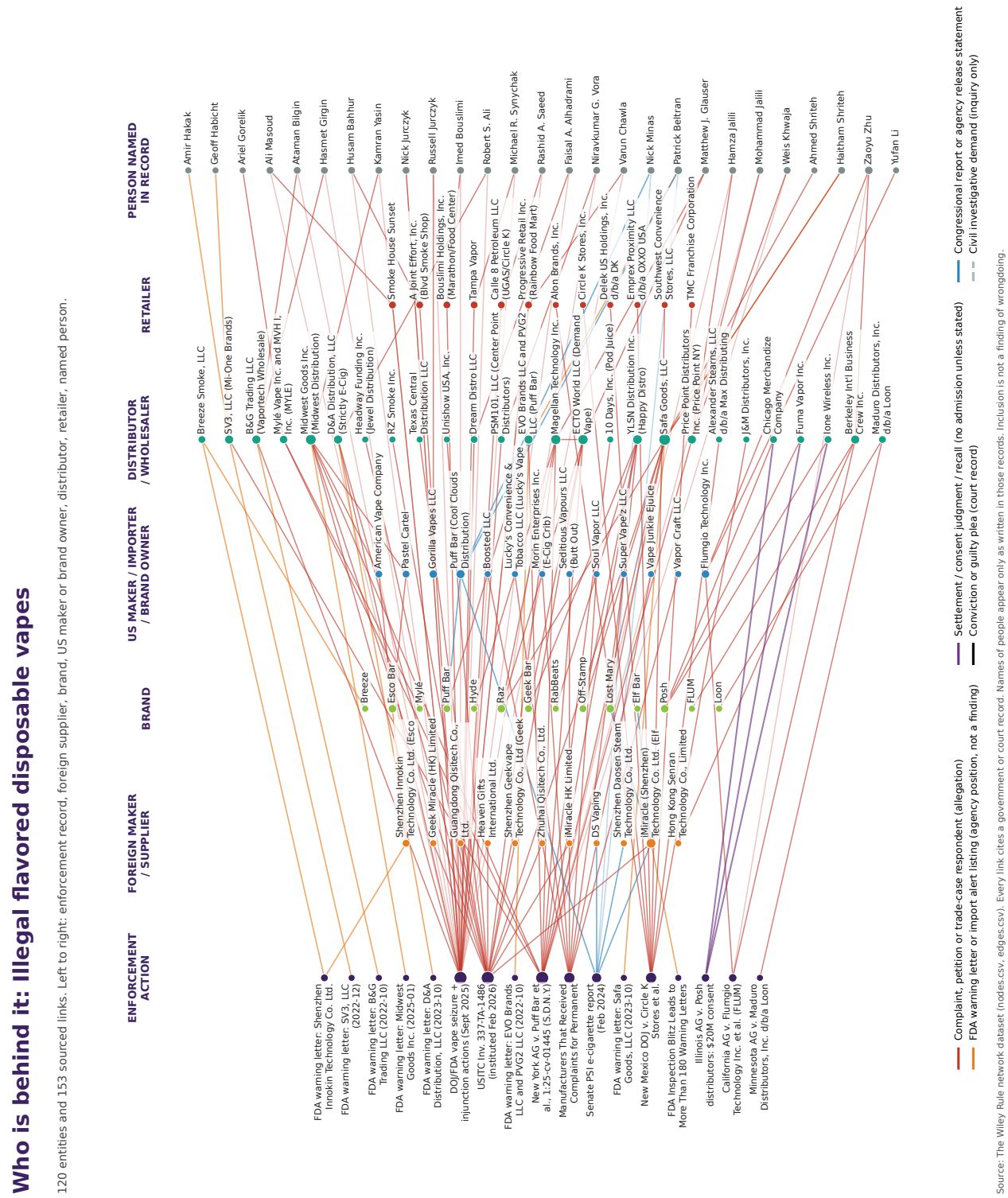
Concentrated 7-OH: brands, makers, distributors, retailers and the records that name them



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. [38,215,258,263,264,265,266,267,268,269,270,271,272,273,274,275,276,308,357,358,359]

EXHIBIT 54

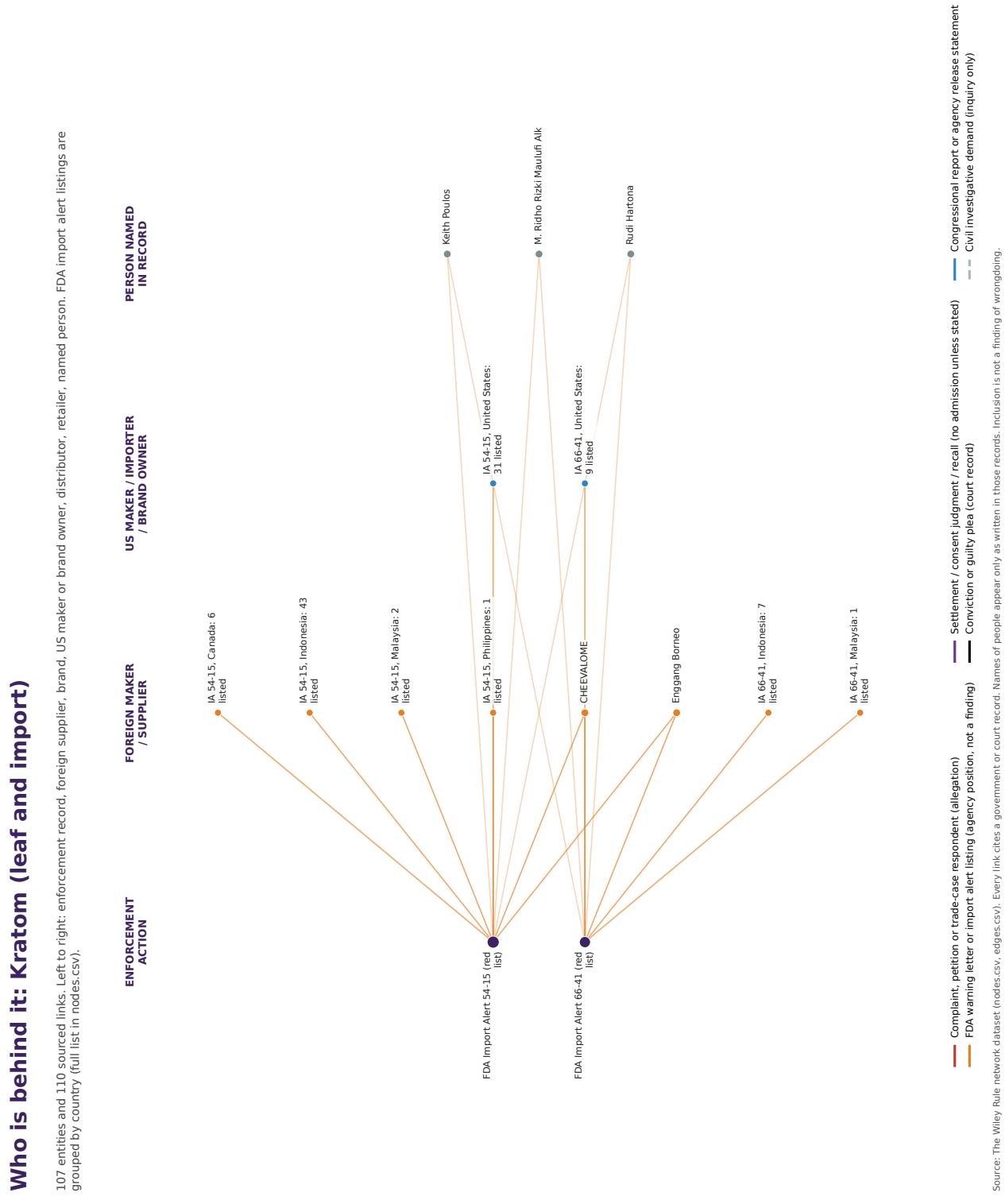
Illegal flavored disposable vapes: foreign makers, importers, master distributors and retailers



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. 9,53,259,277,278,279,280,281,282,283,284,285,286,348,360,361,362,363,364,365

EXHIBIT 55

Kratom leaf: the import alert network



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. [217,218]

EXHIBIT 56

Intoxicating hemp and synthetic cannabinoids: the records that name sellers



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. 223,263,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,365,366,367

EXHIBIT 57

Tianeptine: sellers, convictions, warning letters and import alert



Source: The Wiley Rule supply-chain network (nodes.csv, edges.csv). Every link cites a government or court record, listed in the notes, and is labeled with its legal status. Names appear only as written in those records. Inclusion is not a finding of wrongdoing. [260,309,310,368,369,370]

15

SECTION 15

Illegal but unenforced

The laws exist; the penalties mostly do not

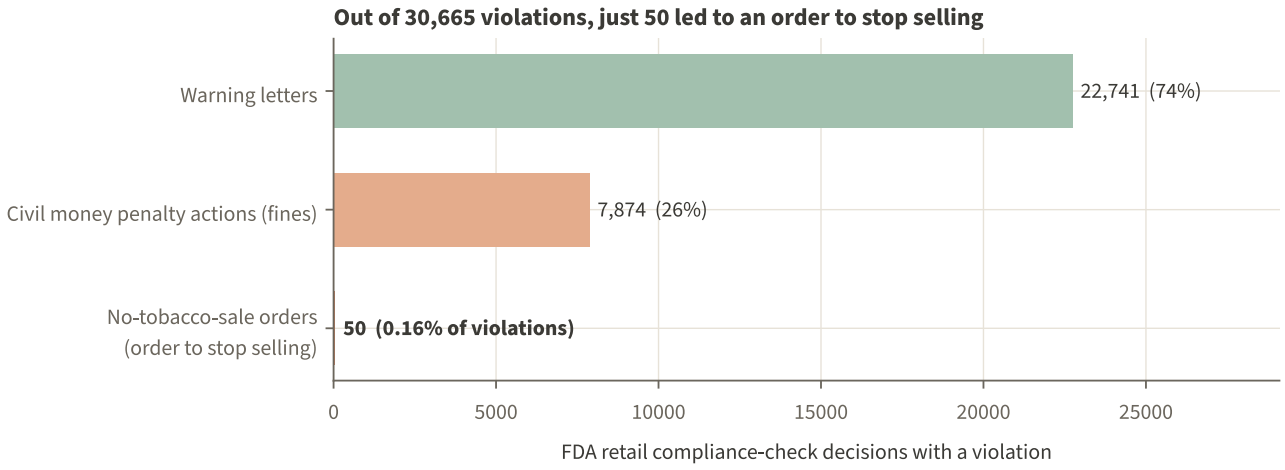
Out of 30,665 violations, just 50 led to an order to stop selling.

FDA retail compliance checks, all tobacco products, October 1, 2024 to October 31, 2026[3]

In most states at least one of these products is already illegal to sell. The problem is not the absence of law. It is the absence of consequences. When FDA inspectors find a violation, the usual result is a letter. When a state bans a product, the public record usually shows no seizure, fine or charge at all.

EXHIBIT 58

Out of 30,665 FDA retail violations, just 50 led to an order to stop selling



Source: FDA Tobacco Compliance Outcomes database, retail inspections, Oct 1, 2024 to Oct 31, 2026, all tobacco products nationwide including territories (242,039 decisions). Most violations are sales to underage buyers. A civil money penalty action is FDA's complaint seeking a fine; a no-tobacco-sale order bars a store from selling tobacco for a set period.[3]

Of 30,665 federal retail violations from October 2024 to October 2026, 74 percent ended with a warning letter and 26 percent with a civil money penalty action. Only 50, or 0.16 percent, ended with a no-tobacco-sale order, the one federal retail sanction that stops a store from selling for a period.[3]

Repeat violators keep selling

FDA's own records show the law lets stores that sell to minors keep selling until they rack up five repeat violations in 36 months, and that FDA rarely uses even that power.[371] From October 2020 to October 2026, 49 stores were cited in five or more separate inspections within 36 months; only 11 were ever ordered to stop selling. Twenty-two stores were fined four or more times within 36 months; two were ordered to stop. One Wisconsin vape shop was fined five times in under three years and had no order to stop selling in FDA's records as of October 2026. None of the 1,067 stores fined two or more times since October 2024 has ever received an order to stop selling. Nationwide, FDA issued no-sale orders to just 73 stores in six years, out of nearly 86,000 violations.[26] FDA publishes inspection outcomes, not per-store violation counts, so it is not possible to tell from public data exactly which stores crossed the legal threshold. Only FDA can disclose that.

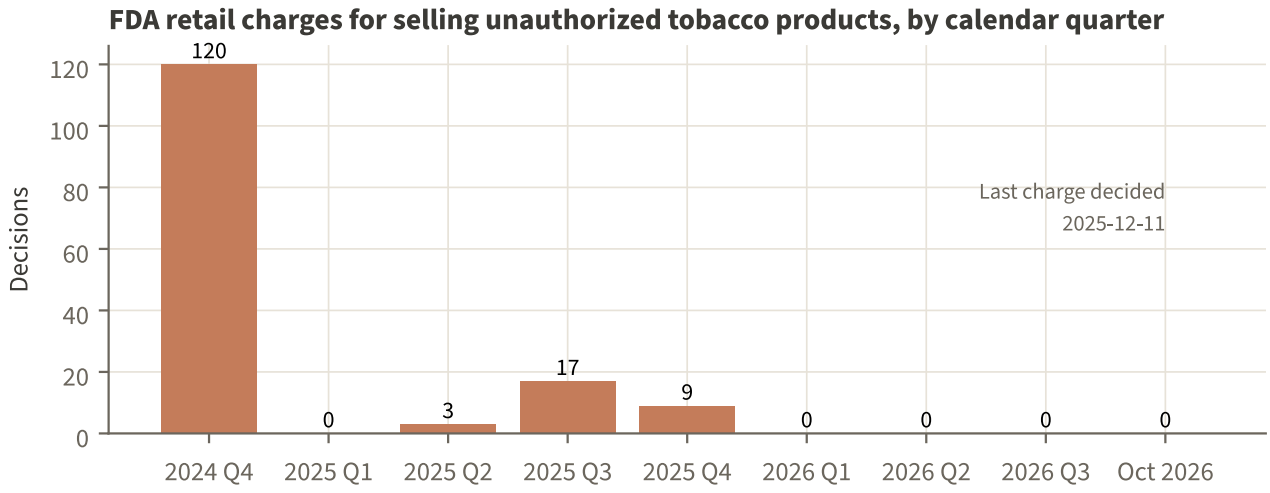
Federal enforcement against illegal products is rare and falling

FDA says it has filed civil money penalty complaints against 192 retailers in total for selling unauthorized tobacco products, 146 stores and 46 online sellers.[9] There are at least 380,000 tobacco retailers in the United States.[10] That is about 0.05 percent (our calculation). FDA has also sent more than 1,000 warning letters to retailers for unauthorized products.[36]

Inside the compliance-check record, charges for selling an unauthorized tobacco product are rarer still. FDA decided 149 such charges from October 2024 to October 2026, 120 of them in the last three months of 2024. The last one was decided on December 11, 2025. None appears in the ten and a half months after that, through October 31, 2026.[3]

EXHIBIT 59

Charges for selling unauthorized products fell to zero after December 11, 2025

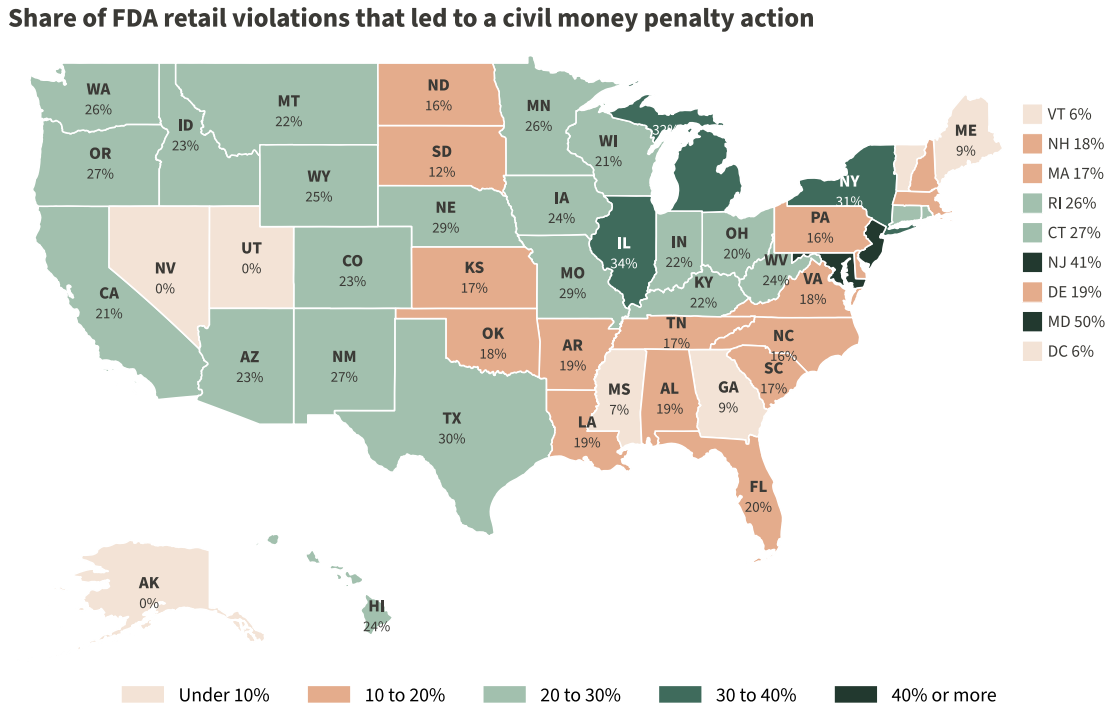


Source: FDA Tobacco Compliance Outcomes, decisions with an Unauthorized Tobacco Product Charge, Oct 1, 2024 to Oct 31, 2026.[3]

Big federal actions do happen, but they target warehouses and shipping containers, not the store counter. CBP and partner agencies seized more than 18 million unauthorized vape units worth more than $175 million in Operation Red Mist, without naming a seller.[213] The Justice Department seized more than 2.1 million vaping products from distributors and retailers in seven states in September 2025,[278] and about 73,000 units of 7-OH products from three warehouses in December 2025.[38]

EXHIBIT 60

How often a violation led to a fine action, by state



Civil money penalty decisions as a share of all violation decisions (warning letters, penalty actions and no-sale orders), all tobacco, Oct 2024 to Oct 2026.

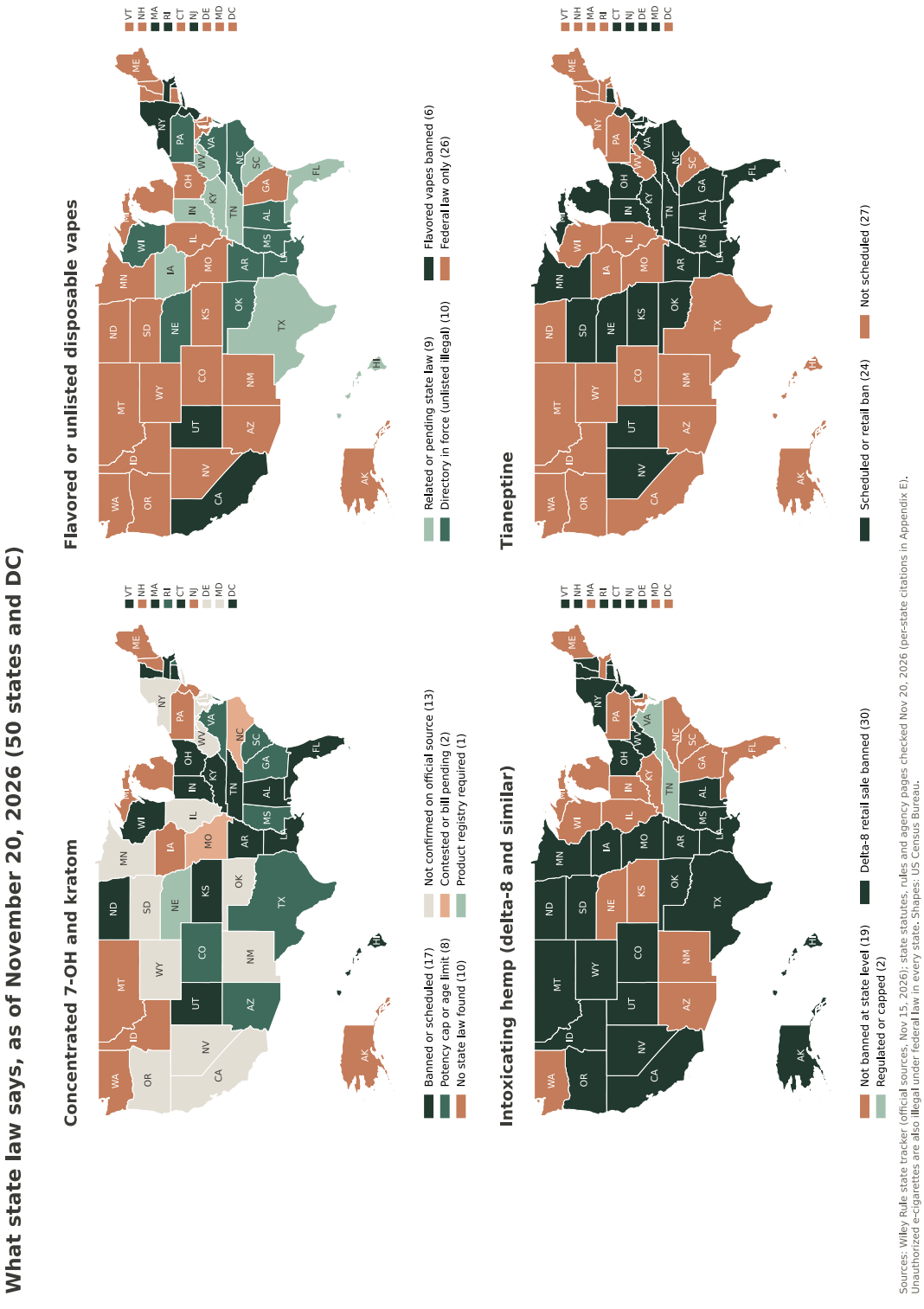
Source: FDA Tobacco Compliance Outcomes, Oct 1, 2024 to Oct 31, 2026; state shapes from the US Census Bureau. [3,240]

What state law says

We checked the law in all 50 states and DC for four product groups: concentrated 7-OH and kratom, flavored or unlisted disposable vapes, intoxicating hemp, and tianeptine. A product counts as illegal to sell where state law bans or schedules it, caps 7-OH (so stronger products are illegal), bans flavored e-cigarettes, or keeps a product directory that makes unlisted products illegal. Unauthorized e-cigarettes are also illegal under federal law in every state.

EXHIBIT 61

What state law says about each product group, as of November 20, 2026



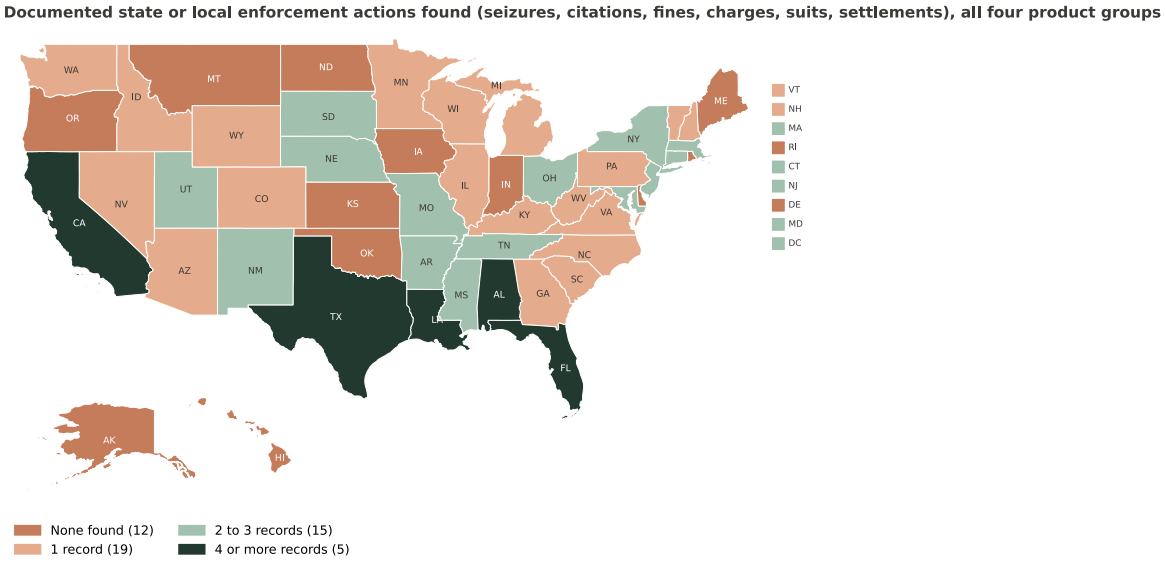
Source: state statutes, rules and agency pages (per-state citations in Appendix E); The Wiley Rule state tracker. [240]

What enforcement the public record shows

We then searched agency, attorney general and court releases, state reports and news for any seizure, citation, fine, license action, charge, suit or settlement tied to each banned product. 47 jurisdictions make at least one of the four product groups illegal to sell. In 37 of them, at least one banned product group has no substantive public enforcement record we could find; in 18, two or more do. Oklahoma, Rhode Island and Virginia each ban three product groups with no enforcement record found for any of them. Only 10 jurisdictions showed a record for every product they ban. Across all states, 58 of 96 state product bans have no enforcement record found.

EXHIBIT 62

Documented state or local enforcement actions found, all four product groups

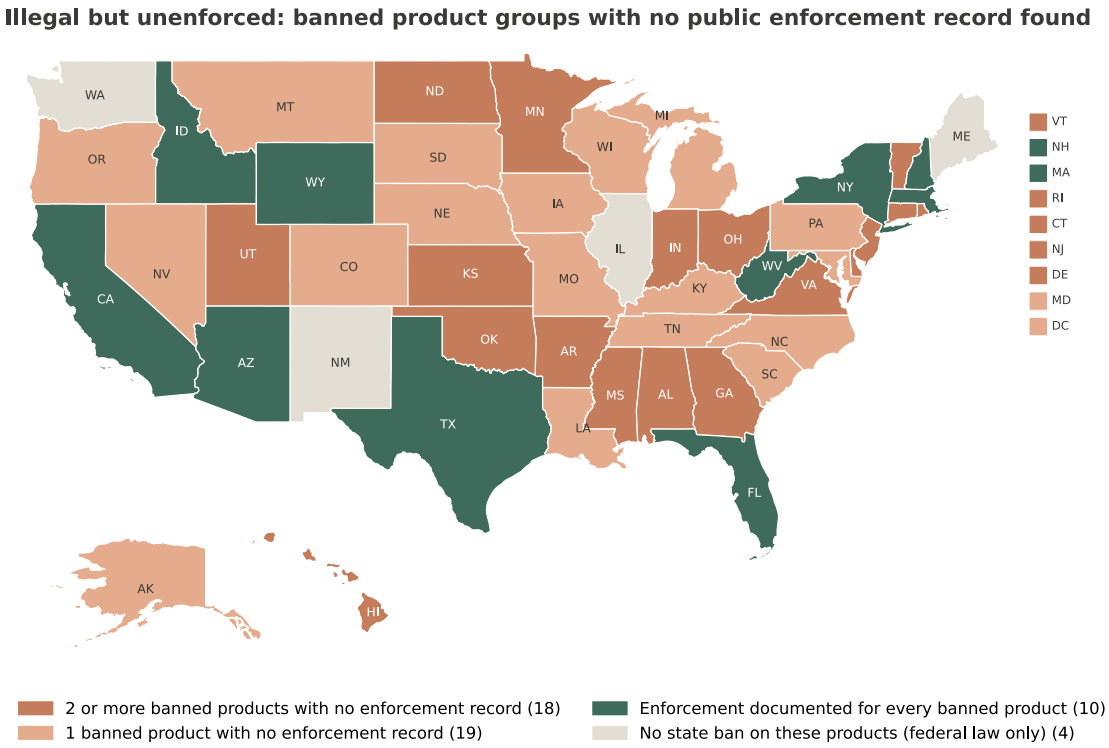


Counts are public records found on Nov 20, 2026 (agency, AG and court releases; news reports of arrests marked as allegations). A count is a documented action, not a measure of total enforcement; 'none found' is not proof of zero. Warning letters and advisories are excluded. Federal FDA retailer actions are shown separately.

Source: public agency, attorney general and court records, plus news reports of arrests and seizures (marked as allegations), found Nov 20, 2026; per-state sources in Appendix E. 'None found' is not proof that no enforcement happened.[240]

EXHIBIT 63

Illegal but unenforced: banned product groups with no public enforcement record found



A product group counts as illegal where state law bans it (7-OH above a cap counts; vapes count where a flavor ban or product directory is in force). 'No record' means no seizure, citation, fine, charge, suit or settlement was found in the searches logged in the dataset; some cells rest on national searches only. Not proof that no enforcement occurred.

Source: The Wiley Rule legal status and enforcement dataset, Nov 20, 2026. Some cells rest on national searches only (see Appendix E).[240]

What "none found" means. It means our searches of published records returned no seizure, citation, fine, suspension, charge, suit or settlement. It is not proof that no enforcement happened; many agencies do not publish citation data, and we filed no public records requests. In 21 state and product cells, the result rests on national searches only; those are marked with an asterisk in Appendix E. Some laws took effect only in 2026, so a missing record may also reflect how new the law is.

The strongest examples

Where penalties are imposed, they are often small. Wisconsin collected $4,530 in forfeitures in its first ten months of vape directory enforcement, under a law that allows up to $1,000 per device per day. Virginia assessed $10.8 million in preliminary hemp penalties and received about 4 percent of it, as reported by trade press. Kentucky's first seven months of hemp enforcement produced 488 inspections, 191 embargoes and 126 cease orders, but one misdemeanor citation.[372] In Maryland, federal officials said no Synar penalties would be levied for two federal fiscal years.[373]

State	Illegal to sell under state law	What the public enforcement record shows
Wisconsin	Kratom and 7-OH in Schedule I[374]; vape directory in force, forfeiture up to $1,000 per device per day[375]	Aug 2025 to May 31, 2026: 149 complaints, 146 inspections, 77 seizures, 6 forfeitures issued, $4,530 collected; no forfeiture enforced in circuit court[376]. No 7-OH or kratom enforcement record found.

State	Illegal to sell under state law	What the public enforcement record shows
Virginia	7-OH cap from July 1, 2026[377]; vape directory, $5,000 to $15,000 per product[378]; tianeptine scheduled[379]	Directory enforcement began Apr 1, 2026; no inspection or penalty results found[380]. Earlier hemp program: $10,772,250 in preliminary penalties assessed, $433,262 received (about 4 percent), as reported[381].
Texas	7-OH capped at 2 percent of alkaloids, synthetic 7-OH banned[382]; delta-8 items back in Schedule I from July 31, 2026[383]	Attorney General suits against kratom sellers[269]; but the state hemp program lists 7 monetary disciplinary actions totaling $40,062 and no revocations, against a retail roster of roughly 12,000 registrants[384].
Oklahoma	Vape directory in force[385]; delta-8 retail ban from Nov 1, 2026[386]; tianeptine scheduled since 2019[387]	No substantive record found for any of the three. A 2026 American Heart Association report says state employees told researchers no agency has authority to enforce the registry[388].
Alabama	Kratom and 7-OH Schedule I[389]; vape directory[390]; delta-8 retail ban[391]; tianeptine[392]	Strong kratom action (83 search warrants in Operation Southern Shield[352]), but directory seizures are stayed by court order and no tianeptine record was found[393].
Tennessee	Kratom sale a Class C felony from July 1, 2026[394]; vape directory (unlisted products barred from Jan 1, 2027)[395]; tianeptine[396]	Kratom seizures reported, including nearly 30,000 packages tied to an alleged West Tennessee supplier[355]; the directory is not yet in force, and no tianeptine enforcement record was found[395].
Mississippi	7-OH cap[397]; vape directory with two unannounced checks per retailer per year[398]; delta-8 and tianeptine banned	No published directory check or seizure results found[399]. Vape-shop raids in Jackson in November 2026 were reported in the news (allegations)[400].
Rhode Island	7-OH cap and licensed sellers only[401]; flavored vapes banned[402]; delta-8 banned[403]	No substantive record found for any of the three. A 2024 national survey found about 40 percent of surveyed Rhode Island stores reported selling kratom[404].
North Dakota	Kratom alkaloid derivatives in Schedule I from Sept 4, 2026[405]; delta-8 banned since 2023[406]	No enforcement record found for either.
Hawaii	7-OH emergency-scheduled Sept 22, 2026[407]; delta-8 banned[408]	No enforcement record found for either; the Attorney General sent letters to more than 800 vape retailers and distributors in 2025[409].
Vermont	Mitragynine and 7-OH on the regulated drug list[410]; delta-8 banned since 2023[411]	No enforcement record found for either. Disposables rose from 19.5 to 90.2 percent of store e-cigarette sales from 2020 to 2026 (Section 13).[354]
Delaware	Delta-8 THC isomers in Schedule I since 2023[412]; tianeptine scheduled 2025[412]	No enforcement record found for either.
Georgia	7-OH cap and age 21 since Jan 1, 2025[413]; tianeptine scheduled 2022[414]	In October 2026 the Attorney General asked convenience stores to remove dangerous kratom products[415]; no seizure, fine or charge found.
Kansas	7-OH in Schedule I from July 1, 2026[416]; tianeptine since 2024[417]	Education-first warning letters with follow-up checks; no seizures or charges reported in sources found[418]. Kansas emergency visits tied to kratom and 7-OH rose after the ban (Section 9).
Indiana	Mitragynine and 7-OH listed as synthetic drugs (Schedule I) since 2012[419]; tianeptine since 2023[420]	Only a prosecutor's reminder after a store was found selling kratom[421].
Pennsylvania	Vape directory under Act 57, with seizure and civil penalties[422]	First month of enforcement: dozens of education-focused inspections and several warning letters, no seizures or penalties announced[423]. Separately, 46 Montgomery County businesses were charged over THC products (allegations, news report)[424].

Where states do enforce

Enforcement is possible, and some states show what it looks like. These records are a counterweight to the pattern above, not an exception to the need for proof before sale.

Where	What enforcement looks like when it happens
Florida	Removed over 23,000 7-OH packages after the August 2025 emergency rule[425]; stop-sale orders on 401,531 hemp products in 2024[426].
Louisiana	Operation Vape Out: 10 arrests, more than $1 million in illegal vapes, 140+ citations and 6 permits suspended[427]; kratom arrests after Act 41[428].
Alabama	83 search warrants and nearly 123,000 kratom doses seized in Operation Southern Shield[352].
California	$10.2 million in banned flavored tobacco seized from licensed retailers in Q3 2026, in more than 1,700 operations[429]; Attorney General suit over FLUM[361]. Disposables fell from 53.3 to 29.1 percent of store e-cigarette sales from Dec 2022 to Mar 2026[354].
New York	191 illegal shops closed and padlocked and about $125 million in illicit cannabis seized in 2026[430]; suit against vape distributors (pending)[277].
New Jersey and Illinois	New Jersey notices of violation at $4,500 each and a $100,000 consent order with a distributor and 17 shops[431]; Illinois $20 million consent decree with the Posh distributors, who denied the allegations[362].

The federal hemp change adds a test. Synthetic and non-naturally-occurring cannabinoid products were excluded from the definition of hemp on November 12, 2026, with a total THC cap per container from December 11, 2026. The Congressional Research Service says it is unclear if and how federal agencies will enforce it.[432]

16

SECTION 16

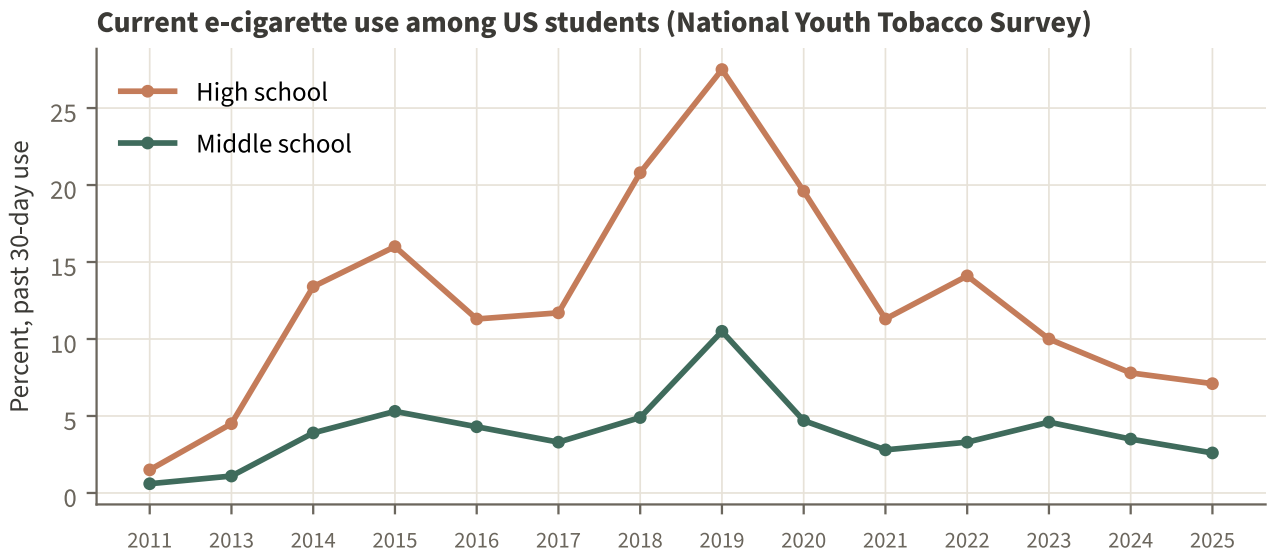
Kids and young people

Young children poisoned at home, and teenagers still buying the same products

Young children are being poisoned by products left in reach, and teenagers are still buying them. In 2024, poison centers recorded 7,699[4] nicotine e-cigarette and e-liquid exposures in children age 5 and under, up from 7,074[5] in 2023. In 2025, about 1,440,000[27] middle and high school students were current e-cigarette users. Children are exposed in two ways: young children find products at home, and teenagers buy or are given them.

EXHIBIT 64

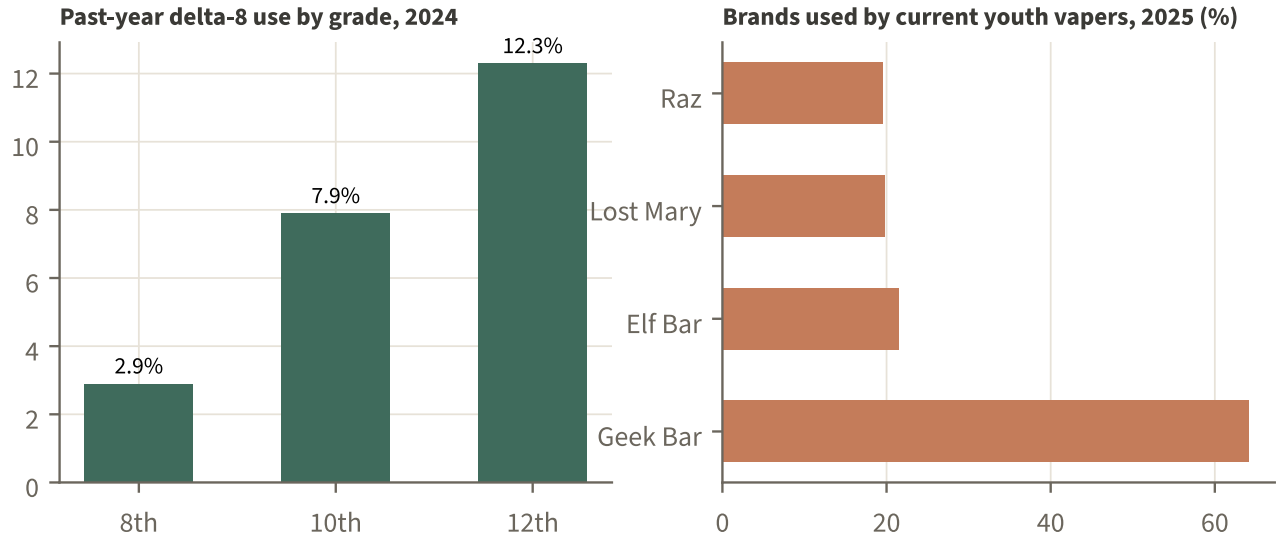
Youth vaping is down from its peak but far from solved



Source: The Wiley Rule research database[433]

EXHIBIT 65

Youth: delta-8 use by grade (2024) and brands used by current youth vapers (2025)



Source: Monitoring the Future; National Youth Tobacco Survey (CDC and FDA) [74,434]

Current e-cigarette use among high school students peaked at 27.5%[205] in 2019 and was 7.1%[27] in 2025. Among current youth users in 2025, 66.3[27] percent used disposables and 89.4[27] percent used flavored products, and 64.1%[434] reported Geek Bar. More than 4 in 10 current users vaped on 20 or more of the past 30 days.[27]

Access is easy. In 2021, current youth users most often got products from a friend (32.8%[435]), bought them themselves (31.3%[435]), or had someone else buy them (28.8%[435]). FDA reported about approximately 11,600[13] warning letters for underage sales violations in FY2025 alone. FDA has also warned online sellers about vapes made to look like toys, school supplies and cartoon characters.[436,437]

Delta-8. In 2024, past-year delta-8 use was 2.9%[74] in 8th grade, 7.9%[74] in 10th and 12.3%[74] in 12th. FDA reported that 41[7] percent of 2,362 delta-8 poison center exposures from January 2021 to February 2022 involved patients under 18.[7] Children under 6 were 30.4%[6] of 2021 to 2022 exposures and 57.8%[6] of critical-care admissions.

Kratom. From 2011 to 2017 there were 48[438] kratom exposures in children 12 and younger, 69%[438] of them under age 2. Lifetime kratom use among 12 to 17 year olds was 0.4%[439] in 2024. Only 15[193] states require kratom buyers to be 21.

7,699 children age 5 and under exposed to nicotine e-cigarettes or e-liquid in a single year (2024).[4] Child-resistant packaging and honest labels are basic protections; for most products in this report, no one checks either before sale.

17

SECTION 17

The fix: proof of safety before sale

Stop paying this cost: proof of safety before sale

The cost documented in this report will keep growing until the seller, not the public, has to prove a product is safe before it is sold. That is the principle Wiley fought for and the 1938 law applied to drugs. We propose applying it to a defined category of products, regardless of what they are called.

Five elements

1. **A category defined by effect and use, not by molecule.** Any product intended or marketed to be ingested, inhaled or absorbed that contains a substance with psychoactive or drug-like effect, other than an approved drug, a regulated alcohol, tobacco or cannabis product, or a food with established safe use. This is how the UK, Ireland and Singapore closed the "next molecule" gap.[23,246,248]
2. **Pre-market authorization.** No sale without an authorization based on safety data the seller provides. Unauthorized products are presumed adulterated, and the burden of proof sits with the seller.
3. **No interim sales.** New Zealand shows that products sold on interim approval reach millions of packets before review ends.[255] Sale begins after authorization, not before.
4. **Honest, verified labels and a public listing.** Every authorized product is listed in a public registry with its maker, ingredients and lab-verified content, with a scannable link to an independent certificate of analysis, child-resistant packaging and clear warnings. No "not for human consumption" labels on products made to be consumed.
5. **Enforcement that escalates.** Clear timelines from warning to seizure to penalty, import detention of unlisted products, retailer and platform responsibility, and funding for treatment and withdrawal care when products leave shelves (see Kansas, Section 9).

Model statutory language (discussion draft)

Sec. 1. Short title. This Act may be cited as the "Proof of Safety Before Sale Act."

Sec. 2. Definitions. (a) "Covered psychoactive product" means any product that (1) contains a substance that, by its chemical structure, pharmacological effect or the manner in which it is marketed, is intended or reasonably expected to produce a stimulant, depressant, opioid, cannabinoid, hallucinogenic or other psychoactive effect in humans, and (2) is intended or reasonably expected to be ingested, inhaled or absorbed by humans, whether or not labeled "not for human consumption." (b) The term does not include (1) a drug approved or licensed under federal law, used as approved; (2) a tobacco product with a marketing authorization; (3) a beverage alcohol product; (4) a food or food ingredient with an established history of safe use as determined by the Secretary; or (5) any other product the Secretary exempts by rule after finding it presents no significant risk.

Sec. 3. Authorization required. (a) No person may manufacture, import, distribute, offer for sale or sell a covered psychoactive product unless the Secretary has authorized it under this section. (b) An application shall include evidence of safety under the intended conditions of use, the identity and quantity of each active substance,

contaminant testing, packaging and labeling. (c) The applicant bears the burden of demonstrating safety. (d) A product may not be sold while an application is pending.

Sec. 4. Labeling and listing. (a) Each authorized product shall bear a label stating each active substance and its amount per serving and per container, verified by an accredited independent laboratory within a tolerance set by the Secretary, a machine-readable link to the certificate of analysis, the manufacturer and importer, and required warnings. (b) The Secretary shall maintain a public registry of authorized products. (c) A label stating or implying that a covered psychoactive product is not for human consumption is misbranding.

Sec. 5. Presumption and enforcement. (a) A covered psychoactive product that is not authorized is adulterated and misbranded. (b) Unauthorized products are subject to detention at import without physical examination, seizure, injunction and civil penalties per unit sold. (c) An online marketplace or retailer that sells an unauthorized product after notice is jointly liable. (d) Penalties collected shall fund enforcement, poison center surveillance and treatment.

Sec. 6. State authority. Nothing in this Act limits a state from adopting stricter requirements.

> This is model language for public discussion, not legal advice. It would need drafting review against existing federal food, drug, tobacco and controlled substances law.

18

SECTION 18

Recommendations by audience

What each actor can do now to cut the harm

Congress

- Enact a proof-of-safety-before-sale standard for covered psychoactive products (Section 17).
- Give FDA mandatory product listing and recall authority for these products, and authority to detain unlisted imports without examination.
- Make class-based scheduling available for new families of synthetic drugs, following the fentanyl-related substances precedent.
- Fund poison center surveillance, forensic testing for 7-OH and new substances, and treatment access.

FDA and DEA

- Set public timelines that move from warning letter to seizure or injunction when a firm keeps selling.
- Publish follow-up outcomes for every warning letter in these categories.
- Use the 2025 import alert approach for 7-OH, semi-synthetic cannabinoids and nicotine analogs.
- Finalize scheduling of concentrated 7-OH and related opioids, with a clear line between leaf and concentrated products.
- Use no-tobacco-sale orders and unauthorized-product charges against repeat violators, and publish counts by quarter.

States

- Ban or schedule concentrated 7-OH and semi-synthetic kratom alkaloids, and pair bans with treatment and withdrawal care.
- Adopt vape directory laws with enforcement funding and penalties for distributors.
- Require age 21, lab-verified labels and child-resistant packaging for any legal kratom or hemp product.
- Share enforcement data across state lines and with FDA.
- Publish enforcement results for every product law: inspections, seizures, penalties assessed and collected, and license actions.
- Fund enforcement of product directories and bans, and name the agency responsible for each one.

Retailers and online platforms

- Stop selling products labeled "not for human consumption" that are made to be consumed.
- Verify FDA authorization or state directory listing before stocking any vape.
- Require certificates of analysis from independent labs for kratom and hemp products, and remove listings that lack them.
- Check ID for every sale.

Parents and caregivers

- Treat concentrated 7-OH tablets, shots and gummies as opioids, and store vapes, e-liquids and edibles locked away from children.
- Know the US poison help line, 1-800-222-1222, and call it at once after any exposure.
- Ask your state legislators and members of Congress to support proof of safety before sale.
- Report harmful products to FDA and your state health department.

19

SECTION 19

Methods, data and limits

How we built this report, and where the numbers come from

Sources. Every number in this report comes from The Wiley Rule's research database: 410 reviewed studies and official documents, 1,095 quantitative data points, and 262 dated timeline events, each with its own source link, plus 260 actors and 301 government and court records for Section 12. The world literature index holds 31,465 studies drawn from Europe PMC and OpenAlex, updated 2026-11-16. State status comes from our state tracker, which counts only laws confirmed on an official state source. The Wiley history in Section 2 is the sourced timeline used on our homepage.

How claims are tied to sources. The report is generated from a snapshot of the database. Each figure in the text is pulled by its record id and carries a numbered note linking to the source listed in Appendix B. Charts are drawn directly from the same records. Where we could not find a sourced figure (for example, a national dollar cost of harm), we say so rather than estimate. Molecular structures are drawn with RDKit from PubChem isomeric SMILES (or ChEMBL where PubChem has no record); the ID is printed on every tile and listed in the sources.

Limits.

- Poison center data reflect calls, not all cases, and depend on public awareness and coding; 7-OH-specific codes were only added in 2025.[14]
- Death counts undercount because 7-OH degrades in stored samples and many deaths involve multiple substances.
- Label studies are snapshots of the products tested and may not represent the whole market.
- State comparisons (delta-8, flavor restrictions) show associations, not proof of cause.
- Lobbying totals are total client spending on all issues. 2026 totals are partial (first three quarters).
- In the literature index, countries are coded by ISO two-letter code (for example, CA is Canada and DE is Germany), not US state; we show full country names. Country counts are by author institution and are approximate.
- Harm records (CAERS, news and agency releases) are unverified reports, may duplicate each other and mostly lack a state; they show patterns, not case counts.
- Receptor and potency values come from different assays and laboratories; they show direction and scale, not human dose equivalence.
- Delta-8 warning letters: we count 23 FDA letters that name delta-8, including those issued jointly with the FTC; an earlier internal note of 21 predated two joint letters.
- Actor locations: an actor's country and, for US actors, its state are stored separately, so two-letter codes such as CA and DE cannot be confused.
- FDA retail violation counts reflect where FDA's contractors inspected and cannot be readily compared across states. Shares of violations by store type rest on names, not an FDA field.
- An enforcement gap means no public record was found, not proof that no enforcement occurred.
- Records in Section 12 are allegations or agency positions unless the record states a conviction or judgment.

Retail, network and enforcement research (Sections 13 to 15 and Appendix E). Retail figures come from FDA's Tobacco Compliance Outcomes fiscal-year exports (October 1, 2024 to October 31, 2026); the repeat-violator counts in Section 15 use the FY2021 to FY2027 exports (October 2020 to October 2026), with stores matched by street address, city and state and each 36-month window measured by decision date. FDA warning letters found by keyword search, 31 state and federal enforcement records, and published audits and scanner data. FDA records no store type, so channel is inferred from the retailer name. The supply-chain network uses only government and court records (76 source documents). The legal status of each product in each state comes from statutes, rules and agency pages, and our state tracker. Two secondary sources (Compound Laws ban tables and the Truth Initiative flavor list) were used to find laws; every tianeptine and flavor-ban row that relied on them was then checked against the official statute, rule or agency text, and Appendix E cites that official source. Enforcement records come from published agency, attorney general and court releases and state reports, plus news reports of arrests and seizures, which are labeled as news and treated as allegations. No public records requests were filed.

Data access. The public data behind this report is open: see Appendix C.

APPENDIX A

A. State scorecard, all 50 states and DC

Score: 2 for a confirmed ban or scheduling of concentrated 7-OH, 1 for limits; plus 1 for a vape directory law in force or enacted. FDA retail outcomes are compliance checks with an outcome other than no violation, October 2024 to September 2026[3]. Status as of Nov 15, 2026 (tracker), with DC, Hawaii, Nebraska, North Dakota, Utah and the Tennessee vape directory updated Nov 20, 2026 from official sources.

State	Concentrated 7-OH law	Vape directory	FDA retail outcomes	of which vape	Score
Alabama	Banned or scheduled[389]	In force[390]	567	97	**3**
Alaska	No action yet	None found[440]	1	1	**0**
Arizona	Limits passed[441]	Under review[442]	400	245	**1**
Arkansas	Banned or scheduled[443]	In force[444]	354	69	**3**
California	Not confirmed	Related law only[445]	436	159	**0**
Colorado	Limits passed[446]	None found[447]	604	101	**1**
Connecticut	Banned or scheduled[448]	None found[449]	711	106	**2**
Delaware	Not confirmed	None found[450]	87	43	**0**
District of Columbia	Banned or scheduled[451]	None found	72	0	**2**
Florida	Banned or scheduled[425]	Related law only[452]	2,549	682	**2**
Georgia	Limits passed[413]	None found[453]	211	104	**1**
Hawaii	Banned or scheduled[454]	Enacted[455]	43	15	**3**
Idaho	No action yet	None found[456]	152	33	**0**
Illinois	Not confirmed	None found[457]	1,212	569	**0**
Indiana	Banned or scheduled[419]	Related law only[458]	452	183	**2**
Iowa	No action yet	Enacted[459]	191	27	**1**
Kansas	Banned or scheduled[460]	None found[461]	217	24	**2**
Kentucky	Banned or scheduled[462]	Related law only[463]	749	40	**2**
Louisiana	Banned or scheduled[464]	In force[465]	694	9	**3**
Maine	No action yet	None found[466]	94	33	**0**
Maryland	Not confirmed	None found[467]	630	215	**0**
Massachusetts	Banned or scheduled[468]	None found[469]	477	89	**2**
Michigan	No action yet	None found[470]	1,591	405	**0**

State	Concentrated 7-OH law	Vape directory	FDA retail outcomes	of which vape	Score
Minnesota	Not confirmed	None found[471]	947	110	**0**
Mississippi	Limits passed[397]	In force[398]	132	9	**2**
Missouri	Not confirmed	None found[472]	864	121	**0**
Montana	No action yet	None found[473]	360	158	**0**
Nebraska	Limits passed[474]	In force[475]	168	42	**2**
Nevada	Not confirmed	None found[476]	48	0	**0**
New Hampshire	No action yet	None found[477]	261	61	**0**
New Jersey	No action yet	None found[478]	2,796	346	**0**
New Mexico	Not confirmed	None found[479]	115	12	**0**
New York	Not confirmed	Under review[480]	2,138	151	**0**
North Carolina	Bill moving[481]	In force[482]	324	104	**1**
North Dakota	Banned or scheduled[405]	None found[483]	50	4	**2**
Ohio	Banned or scheduled[484]	None found[485]	707	187	**2**
Oklahoma	Not confirmed	In force[385]	317	70	**1**
Oregon	Not confirmed	None found[486]	154	0	**0**
Pennsylvania	No action yet	In force[422]	855	124	**1**
Rhode Island	Limits passed[401]	None found[487]	155	8	**1**
South Carolina	Limits passed[488]	Enacted[489]	598	96	**2**
South Dakota	Not confirmed	None found[490]	92	24	**0**
Tennessee	Banned or scheduled[491]	Enacted[395]	667	120	**3**
Texas	Limits passed[382]	Related law only[492]	2,117	1,388	**1**
Utah	Banned or scheduled[493]	In force[494]	5	0	**3**
Vermont	Banned or scheduled[410]	None found[495]	35	1	**2**
Virginia	Limits passed[377]	In force[378]	961	165	**2**
Washington	No action yet	None found[496]	936	150	**0**
West Virginia	Not confirmed	Related law only[497]	252	150	**0**
Wisconsin	Banned or scheduled[374]	In force[375]	736	223	**3**
Wyoming	Not confirmed	None found[498]	100	5	**0**

APPENDIX B

B. Sources

588 sources, numbered in order of first citation.

1. Increases in Kratom-Related Reports to Poison Centers, 2015-2025 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/75/wr/mm7511a1.htm
2. America's Poison Centers: 7-OH exposures
https://www.poisoncenters.org/news-alerts/13651143
3. FDA Tobacco Compliance Check Outcomes (TIMP)
https://timp-ccid.fda.gov/
4. 2024 Annual Report of the National Poison Data System (NPDS) from America's Poison Centers: 42nd Annual Report (Clin Toxicol (America's Poison Centers))
https://doi.org/10.1080/15563650.2025.2571299
5. 2023 Annual Report of the National Poison Data System (NPDS) from America's Poison Centers: 41st Annual Report (Clin Toxicol (America's Poison Centers))
https://doi.org/10.1080/15563650.2024.2412423
6. Delta-8 Tetrahydrocannabinol Exposures Reported to US Poison Centers (Journal of Medical Toxicology)
https://doi.org/10.1007/s13181-024-01030-z
7. 5 Things to Know about Delta-8 Tetrahydrocannabinol (FDA)
https://www.fda.gov/consumers/consumer-updates/5-things-know-about-delta-8-tetrahydrocannabinol-delta-8-thc
8. Kratom Products Are Widely Available Throughout the United States (AJPH 2024) (news report)
https://ajph.aphapublications.org/doi/10.2105/AJPH.2024.307824
9. Manufacturers That Received Complaints for Permanent Injunction (FDA CTP enforcement page) (FDA CTP; DOJ)
https://www.fda.gov/tobacco-products/compliance-enforcement-training/advisory-and-enforcement-actions-against-industry-unauthorized-tobacco-products
10. CDC STATE System: tobacco retail licensure fact sheet (retailer estimate)
https://www.cdc.gov/statesystem/factsheets/licensure/Licensure.html
11. PMTA Metrics for Acceptance, Filing and Review/Action Phases (data as of 30 June 2026) (FDA)
https://www.fda.gov/media/169533/download
12. E-Cigarettes, Vapes and Other Electronic Nicotine Delivery Systems (ENDS) Authorized by the FDA (FDA)
https://www.fda.gov/tobacco-products/market-and-distribute-tobacco-product/e-cigarettes-vapes-and-other-electronic-nicotine-delivery-systems-ends-authorized-fda
13. Tobacco Regulation Activities, Fiscal Year 2025: Report to Congress (U.S. Food and Drug Administration)
https://www.fda.gov/media/193807/download
14. 7-OH: An Assessment of the Scientific Data and Toxicological Concerns (U.S. Food and Drug Administration)
https://www.fda.gov/files/drugs/published/7-hydroxymitragynin_7-oh_an_assessment_of_the_scientific_data_and_toxicological_concerns_around_an_emerging_opioid_threat.pdf
15. Heywood 2026, Regul Toxicol Pharmacol (PMID 42838255) (Regul Toxicol Pharmacol)
https://pubmed.ncbi.nlm.nih.gov/42838255/
16. Schedules of Controlled Substances: Temporary Placement of Mitragynine Pseudoindoxyl, MGM-15, and MGM-16 in Schedule I (Federal Register (DEA))
https://www.federalregister.gov/documents/2026/08/26/2026-17429/schedules-of-controlled-substances-temporary-placement-of-mitragynine-pseudoindoxyl-mgm-15-and
17. Novel Delta-8-THC Vaporizers Contain Unlabeled Adulterants (Chem Res Toxicol)
https://pubmed.ncbi.nlm.nih.gov/34889611/
18. Market survey of disposable e-cigarette nicotine content and e-liquid volume (BMC Public Health)
https://doi.org/10.1186/s12889-022-14152-2
19. Adulteration of low-THC products with synthetic cannabinoids (Drug Test Anal)
https://pubmed.ncbi.nlm.nih.gov/34997693/
20. UNODC Global Forensic Early Warning System monitors over 1,500 psychoactive substances (UNODC)
https://www.unodc.org/LSS/Announcement/Details/c08e6fbf-3f79-4654-8fe9-409e4b24bd59
21. European Drug Report 2026: New psychoactive substances (EU Drugs Agency (EUDA))
https://www.euda.europa.eu/publications/european-drug-report/2026/new-psychoactive-substances_en
22. DEA temporary scheduling orders, 2002-2026 (Federal Register search) (Federal Register (DEA))
https://www.federalregister.gov/documents/search?conditions%5Bagencies%5D%5B%5D=drug-enforcement-administration&conditions%5Bterm%5D=%22temporary+placement%22&conditions%5Btype%5D%5B%5D=RULE
23. Review of the Psychoactive Substances Act 2016 (UK Home Office)
https://assets.publishing.service.gov.uk/media/5beec777e5274a2b0fd695db/Review_of_the_Psychoactive_Substances_Act__2016___web_.pdf
24. Synthetic Drugs in East and Southeast Asia 2025 (UNODC Regional Office for Southeast Asia and the Pacific)
https://www.unodc.org/roseap/uploads/documents/Publications/2025/Synthetic_Drugs_in_East_and_Southeast_Asia_2025.pdf
25. LDA filings for client American Kratom Association (registrants: UPSTREAM CONSULTING, INC., FIRST AMENDMENT PARTNERS LLC, DAVID CARLUCCI CONSULTING, KOUNTOUPES DENHAM CARR & REID, LLC) (Senate Office of Public Records / House Clerk (lda.gov))
https://lda.gov/filings/public/filing/de97cda2-51d7-43c2-b357-89414445c7b2/print/
26. FDA Center for Tobacco Products: Tobacco Compliance Outcomes, retail inspections (fiscal-year exports FY2021 to FY2027, decisions Oct 6, 2020 to Oct 30, 2026; accessed Nov 20, 2026; our address-level analysis)
https://timp-ccid.fda.gov/#fy2021-fy2027

27. Results from the Annual National Youth Tobacco Survey (2025 NYTS) (FDA) https://www.fda.gov/tobacco-products/youth-and-tobacco/results-annual-national-youth-tobacco-survey-nyts
28. Drugs Identified in Deceased Persons by Florida Medical Examiners: 2023 Report (Florida Department of Law Enforcement, Medical Examiners Commission) https://www.myfloridalegal.com/sites/default/files/2025-01/2023-drugs-in-deceased-annual-report.pdf
29. Notes from the Field: Unintentional Drug Overdose Deaths with Kratom Detected, 27 States, July 2016-December 2017 (CDC MMWR) https://www.cdc.gov/mmwr/volumes/68/wr/mm6814a2.htm
30. Special Emphasis Report: Kratom and 7-OH Related Visits to Kansas Emergency Departments (Kansas Department of Health and Environment) https://www.kdhe.ks.gov/DocumentCenter/View/59951/Kratom-Special-Emphasis-Report-08032026-PDF
31. Quantification of kratom alkaloids mitragynine, 7-hydroxy mitragynine, mitragynine pseudoindoxyl, and dihydro-7-hydroxy mitragynine in forensic casework and medicolegal death investigations (J Anal Toxicol) https://pubmed.ncbi.nlm.nih.gov/42879701/
32. Wiley, The History of a Crime Against the Food Law (1929), Cornell University Library https://digital.library.cornell.edu/catalog/chla2889769
33. Avula B et al. Phytochemistry 2026 (7-OH to 3-dehydromitragynine under simulated gastric conditions) https://pubmed.ncbi.nlm.nih.gov/41825819/
34. Brown PN et al. 2026, J AOAC Int (PMID 41065466) (J AOAC Int) https://pubmed.ncbi.nlm.nih.gov/41065466/
35. Chear NJ et al. 2021, J Nat Prod (PMID 33635670) (J Nat Prod) https://pubmed.ncbi.nlm.nih.gov/33635670/
36. FDA Warns Retailers Selling Illegal Tobacco Products That Look Like Everyday Products (FDA) https://www.fda.gov/news-events/press-announcements/fda-warns-retailers-selling-illegal-tobacco-products-look-everyday-products
37. BAT Form 20-F 2025 (SEC (filed by BAT)) https://www.sec.gov/Archives/edgar/data/1303523/000130352326000017/bti-20251231.htm
38. Justice Department Seizes Unlawful 7-OH Opioid Products at Three Warehouses (DOJ Civil Division; USAO W.D. Mo.; FDA) https://www.justice.gov/opa/pr/justice-department-seizes-unlawful-7-oh-products-three-warehouses
39. Union list of novel foods (European Commission) https://food.ec.europa.eu/food-safety/novel-food/authorisations/union-list-novel-foods_en
40. New Zealand: interim licensing for NPS ends and animal testing data ruled out (Psychoactive Substances Amendment Act 2014) (UNODC) https://www.unodc.org/LSS/announcement/Details/a4d70511-783e-4073-be15-0dbb241c3659
41. FDA History Office: Milestones in U.S. Food and Drug Law https://www.fda.gov/about-fda/fda-history/milestones-us-food-and-drug-law
42. FDA: Harvey Wiley https://www.fda.gov/about-fda/fda-leadership-1907-today/harvey-wiley
43. Library of Congress: Harvey Wiley and the Pure Food Movement https://blogs.loc.gov/inside_adams/2024/12/harvey-wiley-and-the-pure-food-movement/
44. FDA Consumer: Harvey W. Wiley, Pioneer Consumer Activist (PDF) https://www.fda.gov/media/107977/download
45. FDA: Sulfanilamide Disaster https://www.fda.gov/about-fda/histories-product-regulation/sulfanilamide-disaster
46. FDA: Generally Recognized as Safe (GRAS) https://www.fda.gov/food/food-ingredients-packaging/generally-recognized-safe-gras
47. Federal Register: 81 FR 54960 (2016 GRAS final rule) https://www.federalregister.gov/documents/2016/08/17/2016-19164/substances-generally-recognized-as-safe
48. Congress.gov: S. 784 (103rd Congress) https://www.congress.gov/bill/103rd-congress/senate-bill/784
49. FDA: information for consumers on dietary supplements https://www.fda.gov/food/dietary-supplements/information-consumers-using-dietary-supplements
50. Federal Register: 62 FR 18938 (April 17, 1997) https://www.federalregister.gov/documents/1997/04/17/97-9706/substances-generally-recognized-as-safe
51. Federal Register: 69 FR 6788 (February 11, 2004) https://www.federalregister.gov/documents/2004/02/11/04-2912/final-rule-declaring-dietary-supplements-containing-ephedrine-alkaloids-adulterated-because-they
52. FDA: ENDS enforcement priorities guidance (January 2020) https://www.fda.gov/media/133880/download
53. U.S. Senate Permanent Subcommittee on Investigations: e-cigarette report (2024) https://www.hsgac.senate.gov/wp-content/uploads/2024-02-29-PSI-E-cig-Report-Final.pdf
54. Congress.gov: H.R. 2751 (111th Congress) https://www.congress.gov/bill/111th-congress/house-bill/2751
55. Federal Register: drug codes for 26 substances under the Synthetic Drug Abuse Prevention Act (2013) https://www.federalregister.gov/documents/2013/01/04/2012-31698/establishment-of-drug-codes-for-26-substances
56. UNODC Early Warning Advisory: new psychoactive substances reported each year (2024) https://www.unodc.org/LSS/Announcement/Details/8fe85e49-d39e-484a-8c22-8eab543bb34c
57. Federal Register: 81 FR 59929 https://www.federalregister.gov/documents/2016/08/31/2016-20803/schedules-of-controlled-substances-temporary-placement-of-mitragynine-and-7-hydroxymitragynine-into
58. Federal Register: 81 FR 70652 https://www.federalregister.gov/documents/2016/10/13/2016-24659/withdrawal-of-notice-of-intent-to-temporarily-place-mitragynine-and-7-hydroxymitragynine-into
59. 7 U.S.C. 1639o, definition of hemp (U.S. Code, with 2025 amendment notes) https://uscode.house.gov/us/usc/119-142/t7/s1639o/
60. Congressional Research Service: change to the federal definition of hemp (IN12620) https://www.congress.gov/crs-product/IN12620
61. California Department of Public Health: Facts About Kratom https://www.cdph.ca.gov/Programs/CEH/DFDCS/Pages/FDBPrograms/FoodSafetyProgram/AboutKratom.aspx
62. FDA: Products containing 7-OH can cause serious harm https://www.fda.gov/consumers/consumer-updates/products-containing-7-oh-can-cause-serious-harm
63. FDA press announcement, July 29, 2025 https://www.fda.gov/news-events/press-announcements/fda-takes-steps-restrict-7-oh-opioid-products-threatening-american-consumers
64. FDA press announcement, July 15, 2025 https://www.fda.gov/news-events/press-announcements/fda-issues-warning-letters-firms-marketing-products-containing-7-hydroxymitragynine
65. Congressional Research Service: hemp definition and effective dates (IF13136) https://www.everycrsreport.com/files/2026-09-28_IF13136_6fe4f17256c0f910652d8296a6b9960d5b3fde1a.pdf
66. Federal Register: 91 FR 65370 (Docket DEA-1570), October 14, 2026 https://www.federalregister.gov/documents/2026/10/14/2026-20943/schedules-of-controlled-substances-temporary-placement-of-7--hydroxymitragynine-and-mitragynine

67. Our state-by-state tracker, with a source for each state https://thewileyrule.org/legislation#states
68. Monitoring E-Cigarette Sales: National Trends, Data Brief Issue 33 (period ending March 22, 2026) (CDC Foundation, Monitoring Tobacco Product Use) https://tobaccomonitoring.org/wp-content/uploads/2026/06/National-E-Cigarette-Sales-Brief-03.22.26.pdf
69. Sales of Unauthorized E-Cigarettes in the United States, December 2025 (NEJM Evidence / CDC Foundation) https://tobaccomonitoring.org/wp-content/uploads/2026/08/Sales-of-Unauthorized-E-cigarettes-Dec-2025.pdf
70. Altria Group 10-K for fiscal year 2025 (SEC (filed by Altria)) https://www.sec.gov/Archives/edgar/data/764180/000076418026000017/mo-20251231.htm
71. De facto opioids: Characterization of novel 7-OH and mitragynine pseudoindoxyl product marketing (Drug and Alcohol Dependence) https://doi.org/10.1016/j.drugalcdep.2025.112701
72. FDACS press release https://www.fdacs.gov/News-Events/Press-Releases/2025-Press-Releases/Commissioner-Wilton-Simpson-Announces-Over-17-000-Dangerous-7-OH-Packages-Removed-from-Florida-Stores-Following-Emergency-Ban
73. Delay in Changes to Hemp Definition: Cannabinoids Not Capable of Being Naturally Produced by the Cannabis Plant (LSB11496) (Congressional Research Service) https://www.everycrsreport.com/reports/LSB11496.html
74. Reported use of most drugs among adolescents remained low in 2024 (National Institute on Drug Abuse) https://nida.nih.gov/news-events/news-releases/2024/12/reported-use-of-most-drugs-among-adolescents-remained-low-in-2024
75. UNODC World Drug Report 2026: Findings in Brief (UNODC) https://www.unodc.org/unodc/en/frontpage/2026/june/wdr26-findings.html
76. Tianeptine Exposures Reported to United States Poison Centers, 2015-2023 (Journal of Medical Toxicology) https://ohiostate.elsevierpure.com/en/publications/tianeptine-exposures-reported-to-united-states-poison-centers-201/
77. PubChem CID 3034396: Mitragynine https://pubchem.ncbi.nlm.nih.gov/compound/3034396
78. PubChem CID 44301524: 7-Hydroxymitragynine https://pubchem.ncbi.nlm.nih.gov/compound/44301524
79. PubChem CID 44301701: Mitragynine pseudoindoxyl https://pubchem.ncbi.nlm.nih.gov/compound/44301701
80. ChEMBL CHEMBL5187788: MGM-15 https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL5187788/
81. ChEMBL CHEMBL5178271: MGM-16 https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL5178271/
82. PubChem CID 15560576: Speciociliatine https://pubchem.ncbi.nlm.nih.gov/compound/15560576
83. PubChem CID 15560577: Speciogynine https://pubchem.ncbi.nlm.nih.gov/compound/15560577
84. PubChem CID 3037629: Paynantheine https://pubchem.ncbi.nlm.nih.gov/compound/3037629
85. PubChem CID 6540753: Corynantheidine https://pubchem.ncbi.nlm.nih.gov/compound/6540753
86. Kruegel 2016, J Am Chem Soc (PMID 27192616) (J Am Chem Soc) https://pubmed.ncbi.nlm.nih.gov/27192616/
87. Obeng 2020, J Med Chem (PMID 31834797) (J Med Chem) https://pubmed.ncbi.nlm.nih.gov/31834797/
88. Obeng 2021, J Pharmacol Exp Ther (PMID 33384303) (J Pharmacol Exp Ther) https://pubmed.ncbi.nlm.nih.gov/33384303/
89. Varadi 2016, J Med Chem (PMID 27556704) (J Med Chem) https://pubmed.ncbi.nlm.nih.gov/27556704/
90. Matsumoto 2014, J Pharmacol Exp Ther (PMID 24345467) (J Pharmacol Exp Ther) https://pubmed.ncbi.nlm.nih.gov/24345467/
91. Gour A et al. 2025, Drug Test Anal (PMID 40936282) (Drug Test Anal) https://pubmed.ncbi.nlm.nih.gov/40936282/
92. Ellis 2020, PLoS One (PMID 32126112) (PLoS One) https://pubmed.ncbi.nlm.nih.gov/32126112/
93. Todd 2020, Sci Rep (PMID 33154449) (Sci Rep) https://pubmed.ncbi.nlm.nih.gov/33154449/
94. Zuarth Gonzalez 2025, J Pharmacol Exp Ther (PMID 41106041) (J Pharmacol Exp Ther) https://pubmed.ncbi.nlm.nih.gov/41106041/
95. Yamamoto 1999, Gen Pharmacol (PMID 10428019) (Gen Pharmacol) https://pubmed.ncbi.nlm.nih.gov/10428019/
96. Suspected Adulteration of Commercial Kratom Products with 7-Hydroxymitragynine (Journal of Medical Toxicology) https://doi.org/10.1007/s13181-016-0588-y
97. Temporary Placement of Mitragynine Pseudoindoxyl, MGM-15, and MGM-16 in Schedule I (notice of intent) (Federal Register (DEA)) https://www.federalregister.gov/documents/2026/07/06/2026-13581/schedules-of-controlled-substances-temporary-placement-of-mitragynine-pseudoindoxyl-mgm-15-and
98. White et al. 2025 (PMID 40568898) (peer-reviewed journal) https://pubmed.ncbi.nlm.nih.gov/40568898/
99. Pharmacological evaluation of N-pyrrolidino etonitazene (Arch Toxicol) https://pubmed.ncbi.nlm.nih.gov/35477798/
100. DEA: Facts about Fentanyl (U.S. Drug Enforcement Administration) https://www.dea.gov/resources/facts-about-fentanyl
101. DEA Issues Carfentanil Warning To Police And Public (Sep 22, 2016) (U.S. Drug Enforcement Administration) https://www.dea.gov/press-releases/2016/09/22/dea-issues-carfentanil-warning-police-and-public
102. Kamble SH et al. Xenobiotica 2019 (CYP3A4 forms 7-OH from mitragynine) https://pubmed.ncbi.nlm.nih.gov/30547698/
103. Kamble SH et al. ACS Pharmacol Transl Sci 2020 (7-OH to MGPI in human plasma) https://pubmed.ncbi.nlm.nih.gov/33344889/
104. ChEMBL CHEMBL5276728: 3-Dehydromitragynine https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL5276728/
105. HHS recommends thresholds for enhanced kratom products (7-OH and MGPI) (U.S. Department of Health and Human Services) https://www.hhs.gov/press-room/hhs-recommends-thresholds-enhanced-kratom-products-7-oh-mgpi.html
106. DEA NOI FR 2026-20943 https://public-inspection.federalregister.gov/2026-20943.pdf
107. Lydecker 2016 (PMID 27752985) https://pubmed.ncbi.nlm.nih.gov/27752985/
108. Tampa Bay Times via FDA 2025 assessment https://www.tampabay.com/investigations/2023/12/09/tampa-bay-times-tested-20kratom-products-heres-what-we-found/
109. Gour A et al. 2026 (PMID 42448619): alkaloid profiles of tablets, films and shots https://pubmed.ncbi.nlm.nih.gov/42448619/
110. Sheehan 2026 (PMID 41989479) https://pubmed.ncbi.nlm.nih.gov/41989479/
111. Hill 2025 (PMID 40373645) https://pubmed.ncbi.nlm.nih.gov/40373645/
112. Towers 2026 (PMID 41926333) https://pubmed.ncbi.nlm.nih.gov/41926333/
113. Osawa 2025 (PMID 39777518) https://pubmed.ncbi.nlm.nih.gov/39777518/

114. CYP450-Mediated Metabolism of Mitragynine; Investigation of Metabolites in Human Urine (J Anal Toxicol) https://pubmed.ncbi.nlm.nih.gov/32008041/
115. Human Mitragynine and 7-Hydroxymitragynine Pharmacokinetics (Molecules) https://pubmed.ncbi.nlm.nih.gov/38474495/
116. Fatal Opioid-Like Toxidrome Associated With a 7-Hydroxymitragynine Kratom Product (Ann Emerg Med) https://pubmed.ncbi.nlm.nih.gov/42949698/
117. Seasonal and Geographic Variation in Alkaloid Content of Kratom (Plants (Basel)) https://pubmed.ncbi.nlm.nih.gov/36840297/
118. Simultaneous quantification of ten key Kratom alkaloids (Drug Test Anal) https://pubmed.ncbi.nlm.nih.gov/30997725/
119. In vitro determination of the efficacy of illicit synthetic cannabinoids at CB1 (Br J Pharmacol) https://pubmed.ncbi.nlm.nih.gov/31412133/
120. Δ(9)-Tetrahydrocannabinol-like effects of novel synthetic cannabinoids in mice and rats (2016) (Psychopharmacology (Berl)) https://pubmed.ncbi.nlm.nih.gov/26875756/
121. Kelkar AH et al. NEJM 2018 (brodifacoum in synthetic cannabinoids) https://pubmed.ncbi.nlm.nih.gov/30280655/
122. PubChem CID 16078: delta-9-THC https://pubchem.ncbi.nlm.nih.gov/compound/16078
123. PubChem CID 638026: delta-8-THC https://pubchem.ncbi.nlm.nih.gov/compound/638026
124. PubChem CID 162625088: delta-10-THC https://pubchem.ncbi.nlm.nih.gov/compound/162625088
125. PubChem CID 16050328: HHC https://pubchem.ncbi.nlm.nih.gov/compound/16050328
126. PubChem CID 198013: THC-O acetate https://pubchem.ncbi.nlm.nih.gov/compound/198013
127. PubChem CID 6453074: THCP https://pubchem.ncbi.nlm.nih.gov/compound/6453074
128. PubChem CID 644019: CBD https://pubchem.ncbi.nlm.nih.gov/compound/644019
129. PubChem CID 10382701: JWH-018 https://pubchem.ncbi.nlm.nih.gov/compound/10382701
130. PubChem CID 155804661: MDMB-4en-PINACA https://pubchem.ncbi.nlm.nih.gov/compound/155804661
131. Munger KR et al. Chem Res Toxicol 2022 (vaping cannabinoid acetates such as THC-O forms ketene) https://pubmed.ncbi.nlm.nih.gov/35801872/
132. A novel phytocannabinoid with activity higher than THC (Sci Rep) https://pubmed.ncbi.nlm.nih.gov/31889124/
133. Temporary Placement of Five Synthetic Cannabinoids Into Schedule I (76 FR 11075) (Federal Register (DEA)) https://www.federalregister.gov/documents/2011/03/01/2011-4428/schedules-of-controlled-substances-temporary-placement-of-five-synthetic-cannabinoids-into-schedule
134. EU Drug Market: New psychoactive substances, semi-synthetic cannabinoids (EU Drugs Agency (EUDA) and Europol) https://www.euda.europa.eu/publications/eu-drug-markets/new-psychoactive-substances/distribution-and-supply/semi-synthetic-cannabinoids_en
135. Introduction of nicotine analogue-containing oral pouch products (Tob Prev Cessat) https://pubmed.ncbi.nlm.nih.gov/39588526/
136. CND decision on international control of hexahydrocannabinol (HHC) and carisoprodol enters into force (UNODC) https://www.unodc.org/LSS/Announcement/Details/0c4632e4-ba34-4eef-9647-8a752a8ca1a5
137. Slow dissociation kinetics of fentanyls and nitazenes correlates with reduced sensitivity to naloxone reversal at the μ-opioid receptor (2025) (Br J Pharmacol) https://pubmed.ncbi.nlm.nih.gov/39437833/
138. Naloxone Use in Novel Potent Opioid and Fentanyl Overdoses in Emergency Department Patients (2023) (JAMA Netw Open) https://pubmed.ncbi.nlm.nih.gov/37642962/
139. Acute Intoxications and Fatalities Associated With Benzimidazole Opioid (Nitazene Analog) Use: A Systematic Review (2022) (Ther Drug Monit) https://pubmed.ncbi.nlm.nih.gov/35149665/
140. Detection of Illegally Manufactured Fentanyls and Carfentanil (MMWR) https://pubmed.ncbi.nlm.nih.gov/39636782/
141. PubChem CID 5288826: Morphine https://pubchem.ncbi.nlm.nih.gov/compound/5288826
142. PubChem CID 3345: Fentanyl https://pubchem.ncbi.nlm.nih.gov/compound/3345
143. PubChem CID 62156: Carfentanil https://pubchem.ncbi.nlm.nih.gov/compound/62156
144. PubChem CID 145721979: Isotonitazene https://pubchem.ncbi.nlm.nih.gov/compound/145721979
145. PubChem CID 53316366: Metonitazene https://pubchem.ncbi.nlm.nih.gov/compound/53316366
146. PubChem CID 155804760: N-Pyrrolidino etonitazene https://pubchem.ncbi.nlm.nih.gov/compound/155804760
147. PubChem CID 68870: Tianeptine https://pubchem.ncbi.nlm.nih.gov/compound/68870
148. PubChem CID 9838803: O-Desmethyltramadol https://pubchem.ncbi.nlm.nih.gov/compound/9838803
149. PubChem CID 5707: Xylazine https://pubchem.ncbi.nlm.nih.gov/compound/5707
150. Metal Concentrations in e-Cigarette Liquid and Aerosol (Environ Health Perspect) https://pubmed.ncbi.nlm.nih.gov/29467105/
151. Elevated Toxic Element Emissions from Popular Disposable E-Cigarettes (ACS Cent Sci) https://pubmed.ncbi.nlm.nih.gov/40893954/
152. Vitamin E Acetate in Bronchoalveolar-Lavage Fluid Associated with EVALI (N Engl J Med) https://pubmed.ncbi.nlm.nih.gov/31860793/
153. Patterns of nicotine concentrations in e-cigarettes sold in the US (Drug Alcohol Depend) https://pubmed.ncbi.nlm.nih.gov/31386973/
154. PubChem CID 89594: Nicotine https://pubchem.ncbi.nlm.nih.gov/compound/89594
155. PubChem CID 25768196: 6-Methylnicotine https://pubchem.ncbi.nlm.nih.gov/compound/25768196
156. PubChem CID 1030: Propylene glycol https://pubchem.ncbi.nlm.nih.gov/compound/1030
157. PubChem CID 753: Glycerol https://pubchem.ncbi.nlm.nih.gov/compound/753
158. PubChem CID 712: Formaldehyde https://pubchem.ncbi.nlm.nih.gov/compound/712
159. PubChem CID 177: Acetaldehyde https://pubchem.ncbi.nlm.nih.gov/compound/177
160. PubChem CID 7847: Acrolein https://pubchem.ncbi.nlm.nih.gov/compound/7847
161. PubChem CID 650: Diacetyl https://pubchem.ncbi.nlm.nih.gov/compound/650
162. PubChem CID 65300: WS-23 https://pubchem.ncbi.nlm.nih.gov/compound/65300

163. PubChem CID 2117: Vitamin E acetate
https://pubchem.ncbi.nlm.nih.gov/compound/2117

164. PubChem CID 10038: Ketene
https://pubchem.ncbi.nlm.nih.gov/compound/10038

165. PubChem CID 54680676: Brodifacoum
https://pubchem.ncbi.nlm.nih.gov/compound/54680676

166. PubChem CID 667484: Etomidate
https://pubchem.ncbi.nlm.nih.gov/compound/667484

167. Blount BC et al. NEJM 2020 (vitamin E acetate in 48 of 51 EVALI cases)
https://www.nejm.org/doi/full/10.1056/NEJMoa1916433

168. Identification of N-pyrrolidino protonitazene in powders sold as heroin and associated with overdose clusters in Dublin and Cork, Ireland (2025) (Drug Test Anal)
https://pubmed.ncbi.nlm.nih.gov/38769669/

169. Characteristics and ingredients of disposable Elfbar e-cigarettes (Addiction)
https://pubmed.ncbi.nlm.nih.gov/39505323/

170. The atypical antidepressant tianeptine is a mu-opioid receptor agonist (Transl Psychiatry)
https://pubmed.ncbi.nlm.nih.gov/25026323/

171. PMID 41170377; 20411370; 34052638; 33968476; 32051800; 30062086 (PMID 41170377)
https://pubmed.ncbi.nlm.nih.gov/41170377/

172. PMID 42377231; DOI 10.1212/WNL.0000000000204770; DOI 10.1212/WNL.96.15_supplement.1562 (PMID 42377231)
https://pubmed.ncbi.nlm.nih.gov/42377231/

173. PMID 31874991; 27260674; 25535742; 40054906; 39574989; 41746245; 39139851; 42377231; 32870119; 42636328 (PMID 31874991)
https://pubmed.ncbi.nlm.nih.gov/31874991/

174. PMID 33257199; 41803068; 31919755 (PMID 33257199)
https://pubmed.ncbi.nlm.nih.gov/33257199/

175. PMID 29568783; 29626673 (PMID 29568783)
https://pubmed.ncbi.nlm.nih.gov/29568783/

176. PMID 41996698; 40171304; 41487756; 41982589; 42857839 (PMID 41996698)
https://pubmed.ncbi.nlm.nih.gov/41996698/

177. PMID 24698080; 41487756 (PMID 24698080)
https://pubmed.ncbi.nlm.nih.gov/24698080/

178. FDA 2025 assessment
https://www.fda.gov/media/187899/download

179. PMID 41189061; 41177541; 29949228; 38788532 (PMID 41189061)
https://pubmed.ncbi.nlm.nih.gov/41189061/

180. PMID 42661120; 41385306 (PMID 42661120)
https://pubmed.ncbi.nlm.nih.gov/42661120/

181. PMID 42359792 (PMID 42359792)
https://pubmed.ncbi.nlm.nih.gov/42359792/

182. PMID 30404789; 33589723 (PMID 30404789)
https://pubmed.ncbi.nlm.nih.gov/30404789/

183. Cannabinoid Content and Label Accuracy of Hemp-Derived Topical Products (JAMA Network Open)
https://doi.org/10.1001/jamanetworkopen.2022.23019

184. E-Liquid and Aerosol Characterization of Popular Disposable E-Cigarettes (ACS Omega)
https://pmc.ncbi.nlm.nih.gov/articles/PMC12268721/

185. Laboratory Analysis of Kratom Products for Heavy Metals (U.S. Food and Drug Administration)
https://www.fda.gov/news-events/public-health-focus/laboratory-analysis-kratom-products-heavy-metals

186. 2018 Salmonella Infections Linked to Kratom (Final Update) (Centers for Disease Control and Prevention)
https://archive.cdc.gov/www_cdc_gov/salmonella/kratom-02-18/index.html

187. Up to 1 in 4 vapes confiscated in schools contains spice, and these are pushed on social media (University of Bath)
https://www.bath.ac.uk/announcements/up-to-1-in-4-vapes-confiscated-in-schools-contains-spice-and-these-are-pushed-on-social-media/

188. Schedule I Substances Identified in Nootropic Gummies Containing Amanita muscaria or Other Mushrooms, Charlottesville, Virginia, 2023-2024 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/73/wr/mm7328a3.htm

189. Quantity of phenibut in dietary supplements before and after FDA warnings (Clinical Toxicology (Phila))
https://pubmed.ncbi.nlm.nih.gov/34550038/

190. Commercial Delta-8 THC Products: an Analysis of Content and Labeling (Journal of Medical Toxicology)
https://doi.org/10.1007/s13181-023-00974-y

191. Severe Illness Associated with Eating Mushroom-Containing Chocolate Products, United States, January-October 2024 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/75/wr/mm7513a2.htm

192. High-risk synthetic cannabinoids found in vapes and products sold in Ireland by HSE Drug Trends Lab (Health Service Executive (HSE), Ireland)
https://about.hse.ie/news/high-risk-synthetic-cannabinoids-found-in-vapes-and-products-sold-in-ireland-by-hse-drug-trends-lab/

193. Lawmakers Weigh Guardrails, Bans on Kratom and 7-OH (National Conference of State Legislatures)
https://www.ncsl.org/state-legislatures-news/details/lawmakers-weigh-guardrails-bans-on-kratom-and-7-oh

194. Synthetic Drugs: Overview and Issues for Congress (R42066) (Congressional Research Service)
https://www.congress.gov/crs_external_products/R/PDF/R42066/R42066.18.pdf

195. Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products (CDC)
https://archive.cdc.gov/www_cdc_gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

196. Drug Overdose Deaths in the United States, 2003-2023 (NCHS Data Brief No. 522)
https://www.cdc.gov/nchs/products/databriefs/db522.htm

197. Drug Overdose Deaths in the United States, 2023-2024 (NCHS Data Brief No. 549)
https://www.cdc.gov/nchs/products/databriefs/db549.htm

198. openFDA CAERS food adverse event API
https://open.fda.gov/apis/food/event/

199. Characteristics of Tianeptine Exposures Reported to the National Poison Data System, United States, 2000-2017 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/67/wr/mm6730a2.htm

200. Increase in Poison Center Reports Linked to Kratom-Containing Kava Products, National Poison Data System, United States, 2000-2025 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/75/wr/mm7512a1.htm

201. Poison Help (HRSA) (U.S. Health Resources and Services Administration)
https://poisonhelp.hrsa.gov/

202. Hepatic Toxicity Possibly Associated with Kava-Containing Products, United States, Germany, and Switzerland, 1999-2002 (CDC MMWR)
https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5147a1.htm

203. Tianeptine Products Linked to Serious Harm, Overdoses, Death (FDA)
https://www.fda.gov/consumers/consumer-updates/tianeptine-products-linked-to-serious-harm-overdoses-death

204. FDA Updates Import Alerts to Reinforce that All Unauthorized E-Cigarettes May Be Detained Without Physical Examination (U.S. Food and Drug Administration)
https://www.fda.gov/tobacco-products/ctp-newsroom/fda-updates-import-alerts-reinforce-all-unauthorized-e-cigarettes-may-be-detained-without-physical

205. Wang TW et al. E-cigarette Use Among Middle and High School Students, United States, 2020 (CDC MMWR) https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm

206. CDC HAN-00451: Increases in Availability of Cannabis Products Containing Delta-8 THC and Reported Cases of Adverse Events (CDC) https://archive.cdc.gov/emergency_cdc_gov/han/2021/han00451.asp

207. Temporary Placement of Isotonitazene in Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2020/08/20/2020-17951/schedules-of-controlled-substances-temporary-placement-of-isotonitazene-in-schedule-i

208. Schedules of Controlled Substances: Temporary Placement of 5,6-Dichloro Brorphine, 5,6-Dichloro Desmethylchlorphine, N-Propionitrile Chlorphine, and Spirochlorphine in Schedule I of the Controlled Substances Act (Federal Register (DEA)) https://www.federalregister.gov/documents/2026/08/27/2026-17531/schedules-of-controlled-substances-temporary-placement-of-56-dichloro-brorphine-56-dichloro

209. Healthcare utilisation and expenditures attributable to current e-cigarette use among US adults (Wang, Sung, Lightwood, Yao, Max) (Tobacco Control 2023;32(6):723-728) https://tobaccocontrol.bmj.com/content/32/6/723

210. State-Level Economic Costs of Opioid Use Disorder and Fatal Opioid Overdose, United States, 2017 (MMWR 70(15):541-546) (CDC MMWR) https://www.cdc.gov/mmwr/volumes/70/wr/mm7015a1.htm

211. $76 Million in Illegal E-Cigarettes Seized in Joint Federal Operation (U.S. Food and Drug Administration) https://www.fda.gov/news-events/press-announcements/76-million-illegal-e-cigarettes-seized-joint-federal-operation

212. HHS, CBP Seize $86.5 Million Worth of Illegal E-Cigarettes in Largest-Ever Operation (U.S. Food and Drug Administration) https://www.fda.gov/news-events/press-announcements/hhs-cbp-seize-865-million-worth-illegal-e-cigarettes-largest-ever-operation

213. Operation Red Mist: CBP, federal partners seize millions of illegal e-cigarettes in maritime cargo (U.S. Customs and Border Protection) https://www.cbp.gov/newsroom/national-media-release/operation-red-mist-cbp-federal-partners-seize-millions-illegal-e

214. A Year in Review: FDA's Progress on Tobacco Product Regulation in 2024 (U.S. Food and Drug Administration) https://www.fda.gov/tobacco-products/ctp-newsroom/year-review-fdas-progress-tobacco-product-regulation-2024

215. Warning letter: Shaman Botanicals, LLC (American Shaman) (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/shaman-botanicals-llc-709622-06252025

216. FDA and CBP Seize Nearly $34 Million Worth of Illegal E-Cigarettes During Joint Operation (U.S. Food and Drug Administration) https://www.fda.gov/news-events/press-announcements/fda-and-cbp-seize-nearly-34-million-worth-illegal-e-cigarettes-during-joint-operation

217. Import Alert 54-15 red list entry (FDA Office of Inspections and Investigations) https://www.accessdata.fda.gov/cms_ia/importalert_1137.html

218. Import Alert 66-41 red list entry (FDA Office of Inspections and Investigations) https://www.accessdata.fda.gov/cms_ia/importalert_190.html

219. HALT Fentanyl Act Permanently Controls Fentanyl-Related Substances (LSB11343) (Congressional Research Service) https://www.congress.gov/crs_external_products/LSB/PDF/LSB11343/LSB11343.1.pdf

220. Temporary Placement of Fentanyl-Related Substances in Schedule I (83 FR 5188) (Federal Register (DEA)) https://www.federalregister.gov/documents/2018/02/06/2018-02319/schedules-of-controlled-substances-temporary-placement-of-fentanyl-related-substances-in-schedule-i

221. HALT Fentanyl Act (Pub. L. 119-26) (Congress) https://www.govinfo.gov/content/pkg/PLAW-119publ26/pdf/PLAW-119publ26.pdf

222. FDA, FTC Continue Joint Effort to Protect Consumers Against Companies Illegally Selling Copycat Delta-8 THC Food Products (U.S. Food and Drug Administration and Federal Trade Commission) https://www.fda.gov/news-events/press-announcements/fda-ftc-continue-joint-effort-protect-consumers-against-companies-illegally-selling-copycat-delta-8

223. FDA, FTC Warn Six Companies for Illegally Selling Copycat Food Products Containing Delta-8 THC (FDA and FTC) https://www.fda.gov/news-events/press-announcements/fda-ftc-warn-six-companies-illegally-selling-copycat-food-products-containing-delta-8-thc

224. CPSC: Liquid Nicotine Packaging business guidance (U.S. Consumer Product Safety Commission) https://www.cpsc.gov/Business--Manufacturing/Business-Education/Business-Guidance/Liquid-Nicotine-Packaging

225. CPSC news release (Nov 22, 2019) (U.S. Consumer Product Safety Commission) https://www.cpsc.gov/Newsroom/News-Releases/2020/Safety-Regulator-Warns-Vape-Shops-and-Other-Retailers-Selling-Liquid-Nicotine-without-Proper-Packaging-is-Against-Federal-Law

226. CPSC recall 21-759 (U.S. Consumer Product Safety Commission) https://www.cpsc.gov/Recalls/2021/TBD-Liquids-Recalls-Liquid-Nicotine-Products-Due-to-Failure-to-Meet-Child-Resistant-Packaging-Requirement-Risk-of-Poisoning-Recall-Alert

227. EUDA Table EDR25-NPS-1: New psychoactive substances reported for the first time to the EU Early Warning System, by category, 2005-2024 (EU Drugs Agency (EUDA)) https://www.euda.europa.eu/sites/default/files/data/data-nodes/32279/versions/57/edr2025-nps-table-1_en.csv

228. Temporary Placement of Three Synthetic Cannabinoids Into Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2013/05/16/2013-11593/schedules-of-controlled-substances-temporary-placement-of-three-synthetic-cannabinoids-into-schedule

229. Schedules of Controlled Substances: Temporary Placement of MDMB-4en-PINACA, 4F-MDMB-BUTICA, ADB-4en-PINACA, CUMYL-PEGACLONE, 5F-EDMB-PICA, and MMB-FUBICA into Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2023/12/12/2023-27243/schedules-of-controlled-substances-temporary-placement-of-mdmb-4en-pinaca-4f-mdmb-butica

230. Temporary Placement of Three Synthetic Cathinones Into Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2011/10/21/2011-27282/schedules-of-controlled-substances-temporary-placement-of-three-synthetic-cathinones-into-schedule-i

231. Temporary Placement of 10 Synthetic Cathinones Into Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2014/03/07/2014-04997/schedules-of-controlled-substances-temporary-placement-of-10-synthetic-cathinones-into-schedule-i

232. Schedules of Controlled Substances: Temporary Placement of Butonitazene, Etodesnitazene, Flunitazene, Metodesnitazene, Metonitazene, N-Pyrrolidino etonitazene, and Protonitazene in Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2022/04/12/2022-07640/schedules-of-controlled-substances-temporary-placement-of-butonitazene-etodesnitazene-flunitazene

233. Schedules of Controlled Substances: Temporary Placement of Ethyleneoxynitazene, Methylenedioxynitazene, 5-Methyl Etodesnitazene, N-Desethyl Etonitazene, N-Desethyl Protonitazene, N,N-Dimethylamino Etonitazene, and N-Pyrrolidino Isotonitazene in Schedule I (Federal Register (DEA)) https://www.federalregister.gov/documents/2025/10/15/2025-19542/schedules-of-controlled-substances-temporary-placement-of-ethyleneoxynitazene-methylenedioxynitazene

234. European Drug Report 2025: New psychoactive substances (EU Drugs Agency (EUDA)) https://www.euda.europa.eu/publications/european-drug-report/2025/new-psychoactive-substances_en

235. Emergence of Etomidate in Singapore (J Anal Toxicol) https://pubmed.ncbi.nlm.nih.gov/43016347/

236. NPS Discovery: Year in Review 2021 (CFSRE NPS Discovery) https://www.cfsre.org/images/trendreports/yir-2021/YearInReview-2021.pdf

237. List of Designated Substances in Japan (as of June 1, 2026) (Ministry of Health, Labour and Welfare of Japan) https://www.mhlw.go.jp/content/11120000/001682859.pdf

238. More synthetic opioids banned to protect communities (UK Home Office) https://www.gov.uk/government/news/more-synthetic-opioids-banned-to-protect-communities

239. Kratom: Summary of State Laws (April 2025) (Legislative Analysis and Public Policy Association) https://legislativeanalysis.org/wp-content/uploads/2025/07/Kratom-Summary-of-State-Laws.pdf

240. US Census Bureau: cartographic boundary files (2023, 1:20m) https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html

241. New Study Finds E-Cigarette Directory Laws Did Not Lead to Sustained Reductions in Sales of Flavored E-Cigarettes (CDC Foundation) https://www.cdcfoundation.org/pr/2026/JAMA-Open-Network-Study-E-Cigarette-Directory-Laws

242. Early evidence of flavored tobacco product restrictions in Massachusetts and New York State (Tobacco Induced Diseases) https://doi.org/10.18332/tid/172000

243. Adolescent Delta-8-THC and Marijuana Use in the US (JAMA) https://doi.org/10.1001/jama.2024.0865

244. The Wiley Rule world literature index, summary statistics (Europe PMC and OpenAlex) https://thewileyrule.org/api/data/literature/stats

245. Use of vapes and other novel tobacco and nicotine products among young people in Great Britain (ASH) https://ash.org.uk/resources/view/use-of-e-cigarettes-among-young-people-in-great-britain

246. Trinity research suggests head shop closures reduced drug harm (Trinity College Dublin) https://www.tcd.ie/news_events/articles/trinity-research-suggests-head-shop-closures-reduced-drug-harm/

247. Evaluation der Auswirkungen des Neue-psychoaktive-Stoffe-Gesetzes (NpSG): Abschlussbericht (IFT / German Federal Ministry of Health) https://ift.de/wp-content/uploads/2022/08/Kraus_et_al_2020_NpSG-Abschlussbericht.pdf

248. Commencement of the Misuse of Drugs (Amendment) Act 2023 [Second Tranche] (Singapore Ministry of Home Affairs) https://www.mha.gov.sg/media-room/newsroom/commencement-of-the-misuse-of-drugs-amendment-act-2023-second-tranche-and-constitution-of-the-republic-of-singapore-amendment-act-2023/

249. New vaping laws to commence 1 July 2024 (Therapeutic Goods Administration) https://www.tga.gov.au/news/media-releases/new-vaping-laws-commence-1-july-2024

250. April 2019 - China: Announcement to place all fentanyl-related substances under national control (UNODC Early Warning Advisory) https://www.unodc.org/LSS/announcement/Details/f2adea68-fbed-4292-a4cc-63771c943318

251. Definitions and history of psychoactive substances (New Zealand Ministry of Health) https://www.health.govt.nz/regulation-legislation/psychoactive-substances/psychoactive-substances-act/definitions-and-history

252. FDA: Premarket Tobacco Product Applications https://www.fda.gov/tobacco-products/market-and-distribute-tobacco-product/premarket-tobacco-product-applications

253. FDA: New Dietary Ingredient notification process https://www.fda.gov/food/dietary-supplements/new-dietary-ingredient-ndi-notification-process

254. Deaths related to drug poisoning in England and Wales: 2025 registrations (Office for National Statistics) https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtodrugpoisoninginenglandandwales/2025registrations

255. Psychoactive Substances Regulations: Regulatory Impact Statement (31 July 2014) (New Zealand Ministry of Health) https://www.regulation.govt.nz/assets/RIS-Documents/ris-moh-psr-jul14.pdf

256. Annual Report for the Psychoactive Substances Expert Advisory Committee for the year 2025 (Briefing H2026077776) (New Zealand Ministry of Health / Medsafe) https://www.health.govt.nz/system/files/2026-05/H2026077776-Briefing-Annual-Report-for-the-Psychoactive-Substances-Expert-Advisory-Committee-for-the-year-2025.pdf

257. How to get a psychoactive product approved (New Zealand Ministry of Health) https://www.health.govt.nz/regulation-legislation/psychoactive-substances/how-to-get-a-product-approved

258. AG Hanaway Files Suit Against American Shaman for Unlawfully Manufacturing and Selling Deadly Opioid 7-OH (Missouri Attorney General) https://ago.mo.gov/attorney-general-hanaway-files-suit-against-american-shaman-for-unlawfully-manufacturing-and-selling-deadly-opioid-7-oh/

259. Certain Disposable and Other Closed-System ENDS; Institution of Investigation (FR Doc. 2026-04158) (U.S. International Trade Commission) https://www.govinfo.gov/content/pkg/FR-2026-03-03/pdf/2026-04158.pdf

260. Arizona Company and CEO Sentenced for Illegal Distribution of Tianeptine and Other Drugs and Ordered to Forfeit $2.4 Million (USAO D.N.H.; FDA OCI) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/press-releases/arizona-company-and-ceo-sentenced-illegal-distribution-tianeptine-and-other-drugs-and-ordered

261. Natural Earth: admin-0 countries, 1:110m (public domain) https://www.naturalearthdata.com/downloads/110m-cultural-vectors/

262. The Wiley Rule: actors and government or court records (public API) https://thewileyrule.org/api/data/actors

263. Warning letter: 7Tabz Retail, LLC (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/7tabz-retail-llc-709546-06252025

264. Shaman Petition for Injunction, Civil Penalties and Other Relief (Missouri Attorney General) https://ago.mo.gov/wp-content/uploads/Shaman-Petition-for-Injunction-Civil-Penalties-and-Other-Relief.pdf

265. AG Hanaway Expands Investigation Into Kratom Manufacturer And Retailers (Missouri Attorney General) https://ago.mo.gov/attorney-general-hanaway-expands-investigation-into-kratom-manufacturer-and-retailers/

266. Kinsale Insurance v. Hydroxie (S.D. Cal.) exhibit (U.S. District Court S.D. Cal.) https://storage.courtlistener.com/recap/gov.uscourts.casd.870599/gov.uscourts.casd.870599.1.2.pdf

267. Warning letter: Hydroxie, LLC (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/hydroxie-llc-709661-06252025

268. Warning letter: My Smoke Wholesale (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/my-smoke-wholesale-710314-06252025

269. AG Paxton Sues Kratom Retailers for Selling Products Containing Nearly Fifty Times the Legal Limit of 7-OH (Texas Attorney General) https://www.texasattorneygeneral.gov/news/releases/attorney-general-paxton-sues-kratom-retailers-selling-products-containing-nearly-fifty-times-legal

270. Warning letter: Relax Relief Rejuvenate Trading, LLC (RRR Trading / EDP Kratom) (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/relax-relief-rejuvenate-trading-llc-dba-rrr-trading-or-edp-kratom-709475-06252025

271. AG Hanaway Files Suit against EDP Kratom (Missouri Attorney General) https://ago.mo.gov/attorney-general-hanaway-files-suit-against-edp-kratom-for-unlawfully-manufacturing-and-selling-deadly-opioids/

272. AG Hanaway Announces Update In Efforts Against Opioid Manufacturers, Retailers, and Distributors (Missouri Attorney General) https://ago.mo.gov/attorney-general-hanaway-announces-update-in-efforts-against-opioid-manufacturers-retailers-and-distributors/

273. Warning letter: Royal Diamond Imports, Inc. (Roxytabs.com) (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/royal-diamond-imports-inc-709540-06252025

274. American Shaman Agrees to Suspend Sales of Kratom and 7-OH in Missouri (Missouri Attorney General) https://ago.mo.gov/american-shaman-agrees-to-suspend-sales-of-kratom-and-7-oh-in-missouri/

275. AG Paxton Sues Kratom Retailers (Smokey's Paradise) (Texas Attorney General) https://www.texasattorneygeneral.gov/news/releases/attorney-general-paxton-sues-kratom-retailers-deceptively-marketing-and-selling-products-containing

276. Warning letter: Thang Botanicals, Inc. (7OHMZ) (FDA Human Foods Program) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/thang-botanicals-inc-dba-7ohmz-7-ohmz-or-7ohmz-710190-06252025

277. State of New York v. Puff Bar et al., No. 1:25-cv-01445 (S.D.N.Y.) (New York Attorney General) https://ag.ny.gov/sites/default/files/court-filings/state-of-new-york-v-puff-bar-et-al-complaint-2025_0.pdf

278. More Than Two Million Illicit Vaping Products Seized in Nationwide Sweep (S.D. Fla.) (DOJ Civil Division; FDA; ATF; U.S. Marshals) https://www.justice.gov/opa/pr/more-two-million-illicit-vaping-products-seized-nationwide-sweep

279. Warning letter: B&G Trading LLC (Vaportech Wholesale) (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/bg-trading-llc-dba-vaportechusa-640657-10142022

280. FDA Puts Firms Responsible for Esco Bars and Breeze on Notice (FDA CTP) https://www.fda.gov/tobacco-products/ctp-newsroom/fda-puts-firms-responsible-esco-bars-and-breeze-two-popular-disposable-e-cigarette-brands-notice

281. Warning letter: D&A Distribution, LLC (Strictly E-Cig) (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/da-distribution-llc-dba-strictly-e-cig-666519-10062023

282. Warning letter: EVO Brands LLC and PVG2 LLC (Puff Bar) (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/evo-brands-llc-and-pvg2-llc-dba-puff-bar-643091-10062022

283. FDA Inspection Blitz Leads to More Than 180 Warning Letters to Retailers for Elf Bar and Esco Bars (FDA) https://www.fda.gov/news-events/press-announcements/fda-inspection-blitz-leads-more-180-warning-letters-retailers-illegal-sale-youth-appealing-elf-bar

284. Warning letter: Midwest Goods Inc. (Midwest Distribution) (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/midwest-goods-inc-dba-midwest-distribution-and-midwest-distribution-illinois-696454-01082025

285. Warning letter: Safa Goods, LLC (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/safa-goods-llc-665079-10052023

286. Warning letter: SV3, LLC (Mi-One Brands) (FDA Center for Tobacco Products) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/sv3-llc-dba-mi-one-brands-647624-12022022

287. Warning letter: ATLRx, Inc. (618341) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/atlrx-inc-618341-05042022

288. Warning letter: BioMD Plus LLC (618460) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/biomd-plus-llc-618460-05042022

289. Warning letter: Delta 8 Hemp (618368) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/delta-8-hemp-618368-05042022

290. Warning letter: Discover Health, LLC d/b/a Discover CBD and Strain Snobs (661488) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/discover-health-llc-dba-discover-cbd-and-strain-snobs-661488-11162023

291. Warning letter: Dr. Smoke, LLC aka Dr. S, LLC (648825) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/dr-smoke-llc-aka-dr-s-llc-648825-06292023

292. Warning letter: Earthly Hemps (674916) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/earthly-hemps-674916-07152024

293. Warning letter: Exclusive Hemp Farms/Oshipt.com (648877) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/exclusive-hemp-farmsoshiptcom-648877-06292023

294. Warning letter: GCHNC LLC dba Hemp XR/Gate City Hemp dba Hemp XR/Allaziya Enterprises, LLC dba Hemp XR (656057) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gchnc-llc-dba-hemp-xrgate-city-hemp-dba-hemp-xrallaziya-enterprises-llc-dba-hemp-xr-656057-09282023

295. Warning letter: Hippy Mood (677031) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/hippy-mood-677031-07152024

296. Warning letter: Kingdom Harvest (625058) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/kingdom-harvest-625058-05042022

297. Warning letter: Koi CBD, LLC (651252) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/koi-cbd-llc-651252-07182023

298. Warning letter: Latro Inc. (698196) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/latro-inc-698196-03252025

299. Warning letter: Life Leaf Medical CBD Center (674917) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/life-leaf-medical-cbd-center-674917-07152024

300. Warning letter: Mary Jane's Bakery Co. LLC (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/mary-janes-bakery-co-llc-678010-07152024

301. Warning letter: Naturally Infused LLC (628036) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/naturally-infused-llc-628036-11162022

302. Warning letter: Nikte's Wholesale, LLC (649469) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/niktes-wholesale-llc-649469-06292023

303. Warning letter: North Carolina Hemp Exchange, LLC dba NC Hemp Shoppe (649018) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/north-carolina-hemp-exchange-llc-dba-nc-hemp-shoppe-649018-06292023

304. Warning letter: Northland Vapor Company, LLC (648568) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/northland-vapor-company-llc-648568-07072023

305. Warning letter: Shamrockshrooms.com (675517) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/shamrockshroomscom-675517-07152024

306. Warning letter: The Haunted Vapor Room (648878) (FDA and FTC) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/haunted-vapor-room-648878-06292023

307. Warning letter: TKO Distribution, LLC (696557) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/tko-distribution-llc-696557-04172025

308. Warning letter: White Label Leaf, LLC/Flying Monkey US, LLC (681493) (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/white-label-leaf-llcflying-monkey-us-llc-681493-07112024

309. Warning letter: Premier Manufacturing Products, LLC (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/premier-manufacturing-products-llc-678912-07022024

310. Warning letter: PureRawz (FDA) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/purerawz-715218-09082025

311. E.D.N.Y. indictment (unsealed June 2023) (USAO E.D.N.Y.; DEA) https://www.justice.gov/d9/2023-06/edny_unsealed_23-cr-263_anhi_moker_new_marketing_tech._co_et_al_indictment.pdf

312. China-Based Chemical Manufacturing Companies and Employees Indicted for Alleged Fentanyl Manufacturing and Distribution (DEA; USAO M.D. Fla.) https://www.dea.gov/press-releases/2024/10/24/china-based-chemical-manufacturing-companies-and-employees-indicted

313. E.D.N.Y. indictment (unsealed June 2023) (USAO E.D.N.Y.; DEA) https://www.justice.gov/d9/2023-06/edny_unsealed_23-cr-264_hefei_gsk_trade_co_ltd._et_al_indictment.pdf

314. LDA filings for client Global Kratom Coalition (registrants: TROUTMAN STRATEGIES, BGR GOVERNMENT AFFAIRS) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/9bfef5fe-c193-4f50-8d4f-f3dc977daf3e/print/

315. LDA filings for client U.S. Hemp Roundtable (registrants: FROST BROWN TODD LLC, WILLIAMS AND JENSEN, PLLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/d99b0bd4-2515-4f1b-9be2-87fe0395837a/print/

316. LDA filings for client American Healthy Alternatives Association (registrants: CLARK HILL PUBLIC STRATEGIES LLC, BECKER & POLIAKOFF, P.A., AVENUE SOLUTIONS, S2R, LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/3de3d982-f54f-4852-9889-db8a9ce1132b/print/

317. LDA filings for client Campaign for Tobacco-Free Kids (registrants: CAMPAIGN FOR TOBACCO-FREE KIDS, BUCKNER GROUP LLC, PALLADIAN HILL STRATEGIES) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/26993768-16a9-46c4-bb05-6b132461f107/print/

318. LDA filings for client SAM Action, Inc. (registrants: SAM ACTION, INC., BRIDGE STREET GROUP, LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/0cfa9b88-92fd-4a6e-be43-fd2b19de26d0/print/

319. LDA filings for client Johnson Foods, LLC (registrants: HOLLAND & KNIGHT LLP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/44edd4e5-3841-4a1a-b5a6-1e2b92da8dac/print/

320. LDA filings for client MIT45, Inc. (registrants: MCGUIREWOODS CONSULTING (A SUBSIDIARY OF MCGUIREWOODS LLP), RAGNAR GROUP LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/7b7f31c6-062b-4eb3-8cc4-be3074d48582/print/

321. LDA filings for client Botanic Tonics LLC (registrants: TROUTMAN STRATEGIES) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/735f7a5a-cc74-45ba-83d9-9cc265a5430f/print/

322. LDA filings for client American Trade Association for Cannabis and Hemp (ATACH) (registrants: THE VOGEL GROUP, THE RUSSELL GROUP, INC., FURROW STRATEGIES) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/b9d59df2-cb56-4601-9a48-a7d5a2350a71/print/

323. LDA filings for client Coalition for Access Now (registrants: BOSE PUBLIC AFFAIRS GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/f9756c19-0da8-4ad7-b478-ef45a89a25f5/print/

324. LDA filings for client 3CHI Corporation (registrants: BOSE PUBLIC AFFAIRS GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/10424eea-963b-49c5-baa3-3fb5e3c529d4/print/

325. LDA filings for client Hemp Industry & Farmers of America (HIFA) (registrants: S2R, LLC, AVENUE SOLUTIONS, BABBAGE COFOUNDER) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/api/v1/filings/?client_name=Hemp%20Industry%20%26%20Farmers%20of%20America

326. LDA filings for client GVB Biopharma (registrants: THE SMITH-FREE GROUP, LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/d76f5ed4-8e5d-47cb-aba3-3214bed61d92/print/

327. LDA filings for client Hemp Beverage Alliance (registrants: CROSSROADS STRATEGIES, LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/aab6ca5a-7fdb-4cf3-b05d-1a283b45ebaf/print/

328. LDA filings for client Mood Product Group LLC (registrants: MS. TAMI WAHL) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/bf635301-544b-4542-8d64-00328400a176/print/

329. LDA filings for client MAG Industries Ltd. (registrants: CAPITOL67 STRATEGIES, MAG INDUSTRIES LTD) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/api/v1/filings/?client_name=MAG%20Industries
330. LDA filings for client Midwest Hemp Council, Inc. (registrants: BOSE PUBLIC AFFAIRS GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/b8af960e-aad9-4d41-8806-02780f7c1fb1/print/
331. LDA filings for client Juul Labs, Inc. (registrants: JUUL LABS, INC., W STRATEGIES, LLC, FULCRUM PUBLIC AFFAIRS LLC, CHECKMATE GOVERNMENT RELATIONS) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/6b73d259-c2b7-4e5c-9f19-fe70b360a715/print/
332. LDA filings for client Vapor Technology Association (registrants: RYAN COSTELLO STRATEGIES, WEST FRONT STRATEGIES LLC, S-3 GROUP, BLACK DIAMOND STRATEGIES LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/10d0b185-a219-4ccf-8931-e947d9046e67/print/
333. LDA filings for client Turning Point Brands (registrants: S-3 GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/ee91f33f-177d-44bc-930c-2e57268a277f/print/
334. LDA filings for client American Vapor Manufacturers (registrants: TRIMPA GROUP, LLC, MR. JOE MIKLOSI, ERVIN GRAVES STRATEGY GROUP, LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/ca11ae06-ac26-4cdf-bf62-2095b0562718/print/
335. LDA filings for client Smoke-Free Alternatives Trade Association (SFATA) (registrants: SMOKE-FREE ALTERNATIVES-TRADE ASSOCIATION) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/4b2c2ac2-a86d-4187-b229-0e5224f4ef37/print/
336. LDA filings for client Smoore International Holdings Limited (registrants: THE VOGEL GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/4abd6174-d8cf-4bcd-90fc-4c01af89a44c/print/
337. LDA filings for client Kaival Brands Innovations Group, Inc. (registrants: BLUE STAR STRATEGIES LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/ed547171-53fd-4e57-88f3-145d156ca830/print/
338. LDA filings for client National Association of Convenience Stores (registrants: HILL EAST GROUP, LLC, ATLAS CROSSING LLC, NATIONAL ASSOCIATION OF CONVENIENCE STORES, TIGER HILL PARTNERS LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/fb0baabe-46f4-4a86-bc18-d8345b630b8d/print/
339. LDA filings for client Natural Products Association (registrants: NATURAL PRODUCTS ASSOCIATION, MCCARTHY ADVANCED CONSULTING LLC, PARRY, ROMANI, DECONCINI & SYMMS, DUDDINGTON GLOBAL STRATEGIES LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/0749891b-ad13-42e9-88d9-54d8c281a92b/print/
340. LDA filings for client Council for Responsible Nutrition (registrants: COUNCIL FOR RESPONSIBLE NUTRITION, ALPINE GROUP PARTNERS, LLC., WILLIAMS AND JENSEN, PLLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/3a15b988-939e-4b83-bd85-ebf515e710a7/print/
341. LDA filings for client Convenience Distribution Association (registrants: CAPITOL DECISIONS, INC., THOMAS A. BRIANT, P.A.) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/e47ba973-1919-4b9e-9925-9abdcc318597/print/
342. LDA filings for client American Herbal Products Association (registrants: VAN SCOYOC ASSOCIATES) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/5852b56a-f964-45e2-9426-071fd338d2f0/print/
343. LDA filings for client Stop Gas Station Heroin LLC (registrants: CHECKMATE GOVERNMENT RELATIONS) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/d2c45cde-b51b-42ad-9578-7c6b7d13c1f8/print/
344. LDA filings for client No Dangerous Intoxicating Products (NODIP) (registrants: THE MADISON GROUP) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/ccf6cfc8-1cf3-4bc2-8891-23c4239ec695/print/
345. LDA filings for client Holistic Alternative Recovery Trust (registrants: FROST BROWN TODD LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/86cd02c4-751e-4ddc-b384-a494045c30fa/print/
346. LDA filings for client End Kratom Addiction (registrants: BOB GOOD LLC) (Senate Office of Public Records / House Clerk (lda.gov)) https://lda.gov/filings/public/filing/9b154e59-64e1-4b06-b607-26903122a1d8/print/
347. FEC committee record (Federal Election Commission) https://www.fec.gov/data/committee/C00905745/
348. State of New York v. Puff Bar et al. (New York Attorney General) https://ag.ny.gov/press-release/2025/attorney-general-james-sues-nations-largest-vape-distributors-fueling-youth
349. Unregulated Highs: Kratom (CWRU PRCHN, Oct 2025) (news report) https://prchn.org/wp-content/uploads/2025/10/Unregulated-Highs-Kratom_10.2025.pdf
350. Concurrent availability of cannabinoid and tobacco products in licensed tobacco retailers in three U.S. cities https://pmc.ncbi.nlm.nih.gov/articles/PMC12707458/
351. Availability and Characteristics of Hemp-Derived Psychoactive Cannabis Products: A Pilot Study in Cleveland, Ohio (Ohio Journal of Public Health, 2024) (news report) https://doi.org/10.18061/ojph.v6i2.9747
352. Alabama AG Operation Southern Shield https://www.alabamaag.gov/attorney-generals-office-and-alea-announce-operation-southern-shield/
353. Arizona AG press release https://www.azag.gov/press-release/attorney-general-mayes-cracks-down-vape-stores-selling-minors
354. CDC Foundation: Monitoring E-Cigarette Sales, State Trends, Data Brief Issue 18 (Circana retail scanner data through Mar 22, 2026) https://tobaccomonitoring.org/wp-content/uploads/2026/10/State-E-Cigarette-Sales-Brief-03.22.26_Issue-18.pdf
355. Shelby County District Attorney: kratom enforcement operation (Oct 2026) https://www.scdag.com/news-releases/da-steve-mulroy-west-tn-violent-crime-and-drug-task-force-announce-major-kratom-enforcement-operation
356. Louisiana Department of Revenue: Operation Vape Out II https://revenue.louisiana.gov/news-and-announcements/2025/new-orleans-area-suspects-arrested-products-seized-in-crackdown-on-illegal-vapes/
357. State AG petition (Cole Co. Cir. Ct.) https://ago.mo.gov/wp-content/uploads/State-v-RRR-Trading-Clean-to-file.pdf

358. State AG petition (Collin Co. 366-02536-2026) https://www.texasattorneygeneral.gov/sites/default/files/images/press/Petition_19.pdf
359. DOJ/USAO press release (sentencing) https://www.justice.gov/usao-mdfl/pr/orlando-business-owner-sentenced-six-years-federal-prison-illegally-possessing-arsenal-firearms
360. FDA CTP press release (warning letters + import alert) https://www.fda.gov/tobacco-products/ctp-newsroom/fda-puts-firms-responsible-esco-bars-and-breeze-two-popular-disposable
361. State AG complaint (L.A. Super. Ct.) https://oag.ca.gov/system/files/attachments/press-docs/Flum%20Complaint.pdf
362. State AG settlement (consent judgment) https://illinoisattorneygeneral.gov/news/story/attorney-general-raoul-announces-settlement-with-makers-of-posh-e-cigarettes
363. State AG complaint https://www.ag.state.mn.us/Office/Communications/2026/docs/Loon_Complaint.pdf
364. State AG complaint (Santa Fe Co. D-101-CV-2026-00900) https://nmdoj.gov/wp-content/uploads/State-of-NM-v-Circle-K-Stores-Inc-et-al.-Complaint.pdf
365. State AG settlement (stipulated judgment) https://portal.ct.gov/ag/press-releases/2026-press-releases/attorney-general-tong-announces-settlement-with-company-for-distributing-illegal-cannabis-products
366. State AG complaint https://ago.nebraska.gov/news/attorney-general-mike-hilgers-sues-savage-enterprises-violating-nebraskas-consumer-protection
367. State AG petition https://ago.mo.gov/attorney-general-hanaway-launches-statewide-action-against-illegal-marijuana-defeats-challenge-to-intoxicating-cannabinoid-law/
368. FDA recall notice https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts/neptune-resources-llc-issues-voluntary-nationwide-recall-neptunes-fix
369. DOJ/FDA-OCI press release (plea) https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/doj-press-releases-involving-fda-oci/california-man-pleads-guilty-smuggling-alleged-cognitive-enhancement-drug-united-states-china
370. FDA Import Alert 54-16 https://www.accessdata.fda.gov/cms_ia/importalert_1141.html
371. FDA guidance: Civil Money Penalties and No-Tobacco-Sale Orders for Tobacco Retailers (Revised), Aug 2023 https://www.fda.gov/media/80888/download
372. Kentucky LRC committee document, Oct 22, 2025: hemp-derived cannabinoid enforcement update https://apps.legislature.ky.gov/CommitteeDocuments/366/35681/10%2022%202025%207.Update%20on%20Kratom%20Admin%20Regs.pdf
373. Maryland Department of Health: Tobacco Enforcement Strategies report (2025) https://dlslibrary.state.md.us/publications/Exec/MDH/HG24-307(f)(2)_2025.pdf
374. Wisconsin Statutes 961.14(7) https://docs.legis.wisconsin.gov/statutes/statutes/961/ii/14/7/ml
375. Wisconsin: vape directory status (State vape directory in force) https://www.revenue.wi.gov/Pages/OnlineServices/electronic-vaping-device-directory.aspx
376. Wisconsin DOR report to Legislature, received June 22, 2026 https://docs.legis.wisconsin.gov/misc/mandatedreports/2026/department_of_revenue/electronic_vaping_device_directory_received_6_22_2026
377. Code of Virginia § 59.1-200 https://law.lis.virginia.gov/vacode/title59.1/chapter17/section59.1-200/
378. Virginia: vape directory status (State vape directory in force) https://www.oag.state.va.us/regulatory-agencies/lnnvp
379. VA tianeptine: Va. Code 54.1-3446 https://law.lis.virginia.gov/vacode/title54.1/chapter34/section54.1-3446/
380. Virginia OAG release https://oag.state.va.us/media-center/news-releases/3087-attorney-general-jay-jones-announces-creation-of-regulated-products-enforcement-unit
381. Cannabis Business Times quoting VDACS, Aug 16, 2024 (news report) https://www.cannabisbusinesstimes.com/us-states/virginia/news/15686495/virginia-hemp-businesses-fined-124-million-since-july-2023-including-16-million-last-month
382. Texas Health and Safety Code chapter 445 https://tcss.legis.texas.gov/resources/HS/htm/HS.445.htm
383. TX hemp/THC: 51 TexReg 4597 (Schedule I items reinstated) https://www.sos.state.tx.us/texreg/archive/July102026/In%20Addition/20260610-1.pdf
384. Texas DSHS, Compliance Actions: Consumable Hemp https://www.dshs.texas.gov/sites/default/files/CP-Hemp/docs/pdf/consumablehempdisciplinaryactions.pdf
385. Oklahoma: vape directory status (State vape directory in force) https://oklahoma.gov/able-commission/enforcement/tobacco-and-vape-information.html
386. OK hemp/THC: SB 1257 (2026), 63 O.S. 2-204 http://webserver1.lsb.state.ok.us/cf_pdf/2025-26%20ENR/SB/SB1257%20ENR.PDF
387. OK tianeptine: 63 O.S. 2-206 (Schedule II), as amended by Laws 2019, c. 207 https://oksenate.gov/sites/default/files/2019-12/os63.pdf
388. AHA Policy Implementation & Outcome Evaluation Report (2026); ABLE Annual Report 2025 (American Heart Association report, secondary source) https://www.heart.org/-/media/Files/About-Us/Policy-Research/Policy-Positions/Tobacco-Endgame/ECigarette-Registry-Exec-Summary.pdf?sc_lang=en
389. Alabama Attorney General https://www.alabamaag.gov/alabama-attorney-general-issues-statewide-cease-and-desist-order-targeting-illegal-kratom-products/
390. Alabama: vape directory status (State vape directory in force) https://www.revenue.alabama.gov/tax-types/e-liquid-and-alternative-nicotine-products/
391. AL hemp/THC: Ala. Act 2025-445 (HB 445), Title 28 Ch. 12 https://alison.legislature.state.al.us/files/pdf/SearchableInstruments/2025RS/HB445-enr.pdf
392. AL tianeptine: Ala. Admin. Code r. 420-7-2 Appendix, Schedule I(c)(24) (state control Mar. 15, 2021) https://admincode.legislature.state.al.us/administrative-code/420-7-2-A
393. Alabama ABC Board Annual Report FY2024-25 https://alison.legislature.state.al.us/files/pdf/joint/public-reports/house/2025/Alabama%20ABC%20Board%20Annual%20Report.7zElzg.pdf
394. TN 7-OH/kratom: Tenn. Pub. Ch. 950 (2026) (Matthew Davenport's Law) https://publications.tnsosfiles.com/acts/114/pub/pc0950.pdf
395. Tennessee: vape directory status (Directory law passed; unlisted products barred from Jan 1, 2027) https://revenue.support.tn.gov/hc/en-us/articles/41939999495572-TOB-19-Manufacturers-Must-Register-Vapor-Products-Sold-in-this-State
396. TN tianeptine: Tenn. Comp. R. & Regs. 0940-06-01-.02 (Schedule II) https://publications.tnsosfiles.com/rules/0940/0940-06/0940-06-01.20230101.pdf
397. Mississippi HB 1077 (2025) https://billstatus.ls.state.ms.us/documents/2025/html/HB/1000-1099/HB1077SG.htm
398. Mississippi: vape directory status (State vape directory in force) https://www.dor.ms.gov/news/filing-opens-june-1-cigarette-and-ends-products
399. Mississippi DOR notice https://www.dor.ms.gov/sites/default/files/news/72-25-15%20Cigarette%20and%20ENDS%20Directories.pdf
400. WLBT, Nov 2, 2026 (news report) https://www.wlbt.com/2026/11/02/vape-shops-across-metro-raided-law-enforcement/

401. Rhode Island General Laws 21-28.12-3
https://webserver.rilegislature.gov/statutes/TITLE21/21-28.12/21-28.12-3.htm

402. RI vape: R.I. Gen. Laws 44-20-61 (flavored e-cigarettes, eff. Jan. 1, 2025)
https://webserver.rilegislature.gov/Statutes/TITLE44/44-20/44-20-61.htm

403. RI hemp/THC: 230-RICR-80-10-1
https://rules.sos.ri.gov/regulations/part/230-80-10-1

404. University of Mississippi: kratom availability survey release (Nov 2024)
https://olemiss.edu/news/2024/11/kratom-availability-2024/index.html

405. N.D. Cent. Code ch. 19-03.1 (Schedule I, kratom alkaloid derivatives)
https://ndlegis.gov/cencode/t19c03-1.pdf

406. ND hemp/THC: N.D. Cent. Code ch. 4.1-18.1
https://ndlegis.gov/cencode/t04-1c18-1.pdf

407. HI 7-OH/kratom: HRS 329-14(b) amended by NED emergency scheduling action
https://law.hawaii.gov/wp-content/uploads/2026/09/2026-Emergency-Controlled-Substance-Scheduling-Action.pdf

408. HI hemp/THC: HRS 328G; Act 269 (2025)
https://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/HRS0328G/HRS_0328G-0001.htm

409. CTFK litigation summary (updated Sept 3, 2026) (Campaign for Tobacco-Free Kids tracker, secondary source)
https://www.tobaccofreekids.org/resources/us-states-and-localities-take-action-against-illegal-unauthorized-e-cigarettes

410. Vermont Department of Health, regulated drugs rule
https://www.healthvermont.gov/sites/default/files/document/reg-regulated-drugs.pdf

411. VT hemp/THC: CCB Rule 2
https://ccb.vermont.gov/sites/ccb/files/2025-07/Rule%202%20Adopted%20Text.pdf

412. DE hemp/THC: 16 Del. C. 4714 (Schedule I THC isomers)
https://delcode.delaware.gov/title16/c047/sc02/index.html

413. Georgia General Assembly, HB 181 (AS PASSED)
https://gov.georgia.gov/document/2024-signed-legislation/hb-181/download

414. GA tianeptine: O.C.G.A. 16-13-25 (Schedule I), as amended by 2022 Ga. Laws Act 877 (HB 963)
https://gov.georgia.gov/document/2022-signed-legislation/hb-963/download

415. Georgia AG press release, Oct 23, 2026
https://law.georgia.gov/press-releases/2026-10-23/carr-calls-convenience-stores-remove-dangerous-kratom-products

416. KS 7-OH/kratom: K.S.A. 65-4105 as amended (2026 SB 430 / HB 2365) Schedule I
https://www.kslegislature.gov/b2025_26/bills/download/?apn=b2025_26/year2/ready_for_publication/sb_430/sb430_enrolled.pdf

417. KS tianeptine: K.S.A. 65-4105
https://www.kslegislature.gov/li/b2025_26/statute/065_000_0000_chapter/065_041_0000_article/065_041_0005_section/065_041_0005_k/

418. KCTV5, July 1, 2026 (news report)
https://www.kctv5.com/2026/07/01/johnson-county-prosecutor-says-retailers-are-first-focus-kansas-kratom-ban-takes-effect/

419. Indiana Code 35-31.5-2-321
https://iga.in.gov/ic/2026/Title_35/Article_31.5.pdf

420. IN tianeptine: IC 35-48-2-4 (Schedule I), as amended by P.L.48-2023 (SEA 379) (Justia reproduction of the official code)
https://law.justia.com/codes/indiana/title-35/article-48/chapter-2/section-35-48-2-4/

421. 14 News (news report)
https://www.14news.com/2025/12/19/prosecutor-shares-reminder-after-store-found-selling-kratom-pike-co/

422. Pennsylvania: vape directory status (State vape directory in force)
https://www.attorneygeneral.gov/businesses-and-organizations/electronic-nicotine-delivery-system-laws-forms-directory/

423. PA AG press release, Nov 19, 2026
https://www.attorneygeneral.gov/taking-action/one-month-since-act-57-took-effect-ag-sundays-agents-made-dozens-of-inspections-for-illegal-vape-products-early-signs-of-promise-from-a-phila-school/

424. FOX 29 Philadelphia (news report)
https://www.fox29.com/news/46-montgomery-county-businesses-charged-illegal-thc-product-sales

425. Florida Attorney General
https://www.myfloridalegal.com/newsrelease/attorney-general-james-uthmeier-signs-emergency-rule-immediately-scheduling-dangerous-7

426. FDACS press release 2024
https://www.fdacs.gov/News-Events/Press-Releases/2024-Press-Releases/Commissioner-Wilton-Simpson-Announces-Historic-Enforcement-Actions-Against-Hemp-Companies-for-Violations-of-Florida-Law

427. Louisiana Department of Revenue release, June 16, 2025
https://revenue.louisiana.gov/news-and-announcements/2025/suspects-arrested-products-seized-and-businesses-closed-in-multi-agency-vape-crackdown/

428. St. Tammany Parish Sheriff's Office (news report)
https://www.stpso.com/news_detail_T6_R177.php

429. CDTFA news release 26-09
https://cdtfa.ca.gov/news/26-09.htm

430. NY Governor press release
https://www.governor.ny.gov/news/governor-hochul-announces-new-yorks-legal-cannabis-market-surpasses-4-billion-retail-sales

431. NJ AG consent order
https://www.njoag.gov/wp-content/uploads/2026/05/2026-0515_King-Distribution-LLC.pdf

432. Congressional Research Service: hemp redefinition (IF13136)
https://www.congress.gov/crs-product/IF13136

433. Notes from the Field: Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students - United States, 2011-2018 (CDC MMWR)
https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm

434. E-Cigarette and Nicotine Pouch Use Among Youth, United States, 2025 (NEJM Evidence)
https://www.cidrap.umn.edu/sites/default/files/page-files/PHA-E-cigarette100526.pdf

435. Tobacco Product Use and Associated Factors Among Middle and High School Students, NYTS 2021 (CDC MMWR Surveillance Summaries)
https://www.cdc.gov/mmwr/volumes/71/ss/ss7105a1.htm

436. Retailers Warned to Stop Selling Illegal E-Cigarettes Resembling Youth-Appealing Characters, School Supplies, Toys, and Drinks (U.S. Food and Drug Administration)
https://www.fda.gov/tobacco-products/ctp-newsroom/retailers-warned-stop-selling-illegal-e-cigarettes-resembling-youth-appealing-characters-school

437. FDA Warns Retailers to Stop Selling Illegal Youth-Appealing E-Cigarettes Disguised as Everyday Items (U.S. Food and Drug Administration)
https://www.fda.gov/tobacco-products/ctp-newsroom/fda-warns-retailers-stop-selling-illegal-youth-appealing-e-cigarettes-disguised-everyday-items

438. Kratom exposures reported to United States poison control centers: 2011-2017 (Clinical Toxicology)
https://doi.org/10.1080/15563650.2019.1569236

439. National Survey on Drug Use and Health detailed tables (point estimates) (SAMHSA, Center for Behavioral Health Statistics and Quality)
https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect8pe.htm

440. Alaska: vape directory status (No state vape directory found)
https://www.commerce.alaska.gov/web/cbpl/BusinessLicensing/EndorsementFAQs

441. Arizona Revised Statutes 36-795.02
https://www.azleg.gov/ars/36/00795-02.htm

442. Arizona: vape directory status (Under review)
https://www.azleg.gov/legtext/57leg/1R/summary/S.1272PS_ASPASSEDCOMMITTEE.DOCX.htm

443. Arkansas Department of Health list of controlled substances
https://arkleg.state.ar.us/Home/FTPDocument?path=%2FAssembly%2FMeeting+Attachments%2F040%2F27958%2FE.5.a+DOH+List+of+Controlled+Substances+and+Act+934+of+2025.pdf

444. Arkansas: vape directory status (State vape directory in force)
https://www.dfa.arkansas.gov/office/arkansas-tobacco-control/manufacturer-directory-for-vapor-and-e-liquid-products/

445. California: vape directory status (Related vape sales law)
https://oag.ca.gov/news/press-releases/attorney-general-bonta-announces-publication-unflavored-tobacco-list

446. Colorado session law SB25-072
https://leg.colorado.gov/laws/session-laws/SB25-072/283/download

447. Colorado: vape directory status (No state vape directory found)
https://tax.colorado.gov/tobacco-products-retailers

448. Connecticut Department of Consumer Protection
https://portal.ct.gov/dcp/knowledge-base/articles/drug-control/patients/kratom-update-october-2025

449. Connecticut: vape directory status (No state vape directory found)
https://prdext2.cga.ct.gov/asp/CGABillStatus/cgabillstatus.asp?bill_num=HB05539&selBillType=Bill&which_year=2026

450. Delaware: vape directory status (No state vape directory found)
https://legis.delaware.gov/BillDetail/141979

451. DC Register, Notice of Final Rulemaking, Schedule of Controlled Substances (63 DCR 14819, Dec 2, 2016)
https://dcregs.dc.gov/Common/NoticeDetail.aspx?NoticeId=N0061279

452. Florida: vape directory status (Related vape sales law)
https://www.flsenate.gov/Laws/Statutes/2026/0569.311

453. Georgia: vape directory status (No state vape directory found)
https://www.legis.ga.gov/api/legislation/document/20252026/235638

454. Hawaii Department of Law Enforcement, Narcotics Enforcement Division: Notice of Emergency Controlled Substance Scheduling Action (7-OH)
https://law.hawaii.gov/about-us/law-enforcement-division/narcotics-enforcement-division/

455. Hawaii: vape directory status (Directory law passed, launch pending)
https://ag.hawaii.gov/cjd/tobacco-enforcement-unit/notice-of-new-laws-re-electronic-smoking-devices-and-e-liquids/

456. Idaho: vape directory status (No state vape directory found)
https://tax.idaho.gov/taxes/product-excise-taxes/cigarette-and-tobacco-taxes/pact-act/

457. Illinois: vape directory status (No state vape directory found)
https://ilga.gov/legislation/BillStatus?DocNum=3244&DocTypeID=SB&GAID=18&LegId=165984&SessionID=114

458. Indiana: vape directory status (Related vape sales law)
https://www.in.gov/atc/tobacco-resources/e-liquid/

459. Iowa: vape directory status (Directory law passed, launch pending)
https://revenue.iowa.gov/taxes/tax-guidance/sales-use-excise-tax/vapor-products-directory

460. Kansas Legislature, HB 2365 enrolled
https://kslegislature.gov/b2025_26/documents/view-leg/?apn=b2025_26%2Fyear2%2Fready_for_publication%2Fhb_2365%2Fhb2365_enrolled.pdf

461. Kansas: vape directory status (No state vape directory found)
https://www.ksrevenue.gov/bustaxtypescig.html

462. Kentucky regulation 902 KAR 55:015
https://apps.legislature.ky.gov/law/kar/titles/902/055/015/

463. Kentucky: vape directory status (Related vape sales law)
https://apps.legislature.ky.gov/record/24rs/hb11.html

464. Louisiana R.S. 40:966.1
https://legis.la.gov/legis/Law.aspx?d=1429497

465. Louisiana: vape directory status (State vape directory in force)
https://atc.louisiana.gov/resources/vape-directory-information/

466. Maine: vape directory status (No state vape directory found)
https://legislature.maine.gov/statutes/22/title22sec1551.html

467. Maryland: vape directory status (No state vape directory found)
https://atcc.maryland.gov/faqs/how-do-i-become-a-tobacco-products-cigarettes-electronic-smoking-devices-and-other-tobacco-products-manufacturer-wholesaler-or-retailer-that-operates-in-maryland/

468. Massachusetts Governor and Department of Public Health
https://www.mass.gov/news/governor-healey-takes-action-to-protect-young-people-and-residents-from-dangerous-kratom-products

469. Massachusetts: vape directory status (No state vape directory found)
https://www.mass.gov/guides/2019-tobacco-control-law

470. Michigan: vape directory status (No state vape directory found)
https://www.michigan.gov/mdhhs/keep-mi-healthy/chronicdiseases/tobacco/e-cigarettes

471. Minnesota: vape directory status (No state vape directory found)
https://www.revisor.mn.gov/statutes/cite/325F.7821

472. Missouri: vape directory status (No state vape directory found)
https://documents.house.mo.gov/billtracking/bills251/sumpdf/HB0276I.pdf

473. Montana: vape directory status (No state vape directory found)
https://mca.legmt.gov/bills/mca/title_0160/chapter_0110/part_0030/section_0030/0160-0110-0030-0030.html

474. Nebraska Department of Revenue: ENDS and kratom directory enforcement (Oct 7, 2026)
https://revenue.nebraska.gov/sites/default/files/doc/news-release/ndr/News_Release_ENDS_Kratom_Enforcement_Final.pdf

475. Nebraska: vape directory status (State vape directory in force)
https://revenue.nebraska.gov/businesses/cigarettes-other-tobacco-products

476. Nevada: vape directory status (No state vape directory found)
https://www.leg.state.nv.us/App/NELIS/REL/83rd2025/Bill/12784/Overview

477. New Hampshire: vape directory status (No state vape directory found)
https://www.revenue.nh.gov/taxes-glance/tobacco-tax

478. New Jersey: vape directory status (No state vape directory found)
https://www.nj.gov/treasury/taxation/tobacco.shtml

479. New Mexico: vape directory status (No state vape directory found)
https://www.nmlegis.gov/Legislation/Legislation?chamber=H&legtype=B&legno=268&year=25

480. New York: vape directory status (Under review)
https://www.nysenate.gov/legislation/bills/2025/A4619/amendment/B

481. NC General Assembly, HB 328
https://www.ncleg.gov/BillLookUp/2025/H328

482. North Carolina: vape directory status (State vape directory in force)
https://www.ncdor.gov/taxes-forms/other-taxes-and-fees/vapor-product-and-consumable-product-certification-directory

483. North Dakota: vape directory status (No state vape directory found)
https://www.tax.nd.gov/excise-special-and-other-taxes/cigarette-and-tobacco-products-tax

484. Ohio Administrative Code 4729:9-1-01.1
https://codes.ohio.gov/ohio-administrative-code/rule-4729%3A9-1-01.1

485. Ohio: vape directory status (No state vape directory found)
https://ohiosenate.gov/legislation/136/hb849/status

486. Oregon: vape directory status (No state vape directory found)
https://www.oregon.gov/dor/programs/businesses/pages/statewide-tobacco-retail-license.aspx

487. Rhode Island: vape directory status (No state vape directory found)
https://tax.ri.gov/tax-sections/sales-excise-taxes/ends-tax

488. South Carolina Act 35 of 2025
https://www.scstatehouse.gov/sess126_2025-2026/bills/221.htm

489. South Carolina: vape directory status (Directory law passed, launch pending)
https://www.scstatehouse.gov/sess126_2025-2026/bills/287.htm

490. South Dakota: vape directory status (No state vape directory found)
https://dor.sd.gov/businesses/taxes/cigarette-tobacco-nicotine-products/

491. Tennessee General Assembly, HB 1649 (Public Chapter 950)
https://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=HB1649&GA=114

492. Texas: vape directory status (Related vape sales law) https://comptroller.texas.gov/taxes/tobacco/faq-e-cig.php
493. Utah Code 58-37-108 (Schedule I) https://le.utah.gov/xcode/Title58/Chapter37/C58-37-S108_2026050620260506.pdf
494. Utah: vape directory status (State vape directory in force) https://tax.utah.gov/business/other-taxes/tobacco/e-cigarette/
495. Vermont: vape directory status (No state vape directory found) https://tax.vermont.gov/business/miscellaneous-taxes/e-cigarettes/faqs
496. Washington: vape directory status (No state vape directory found) https://app.leg.wa.gov/billsummary/?BillNumber=1534&Initiative=false&Year=2025
497. West Virginia: vape directory status (Related vape sales law) https://code.wvlegislature.gov/16-9H/
498. Wyoming: vape directory status (No state vape directory found) https://www.wyoleg.gov/Legislation/2026/HB0132
499. WBRC News, Oct 6, 2026 (news report) https://www.wbrc.com/2026/10/06/package-store-owner-arrested-st-clair-county-drug-investigation/
500. WBRC, July 10, 2026 (news report) https://www.wbrc.com/2026/07/10/cherokee-county-compliance-checks-result-seizure-thc-kratom-products/
501. al.com (news report) https://www.al.com/crime/2026/07/2-arrested-for-illegal-hemp-in-raids-at-multiple-opelika-businesses.html
502. AK: 11 AAC 40.400 (sale only via licensed marijuana retailers) https://www.akleg.gov/basis/aac.asp?media=print&secStart=11.40.400&secEnd=11.40.910
503. Arizona AG consumer alert https://www.azag.gov/ag-mayes-consumer-alert-kratom
504. AR: Ark. Dept. of Health List of Controlled Substances, Schedule I(c)(24)-(25) https://www.sos.arkansas.gov/uploads/rulesRegs/Arkansas%20Register/2015/1115reg/007.07.15-002.pdf
505. AR: Act 934 of 2025 (SB 533), Ark. Code 20-56-501 et seq. https://arkleg.state.ar.us/Home/FTPDocument?path=%2FACTS%2F2025R%2FPublic%2FACT934.pdf
506. AR: Ark. Dept. of Health List of Controlled Substances, Schedule II (opiates) item 30 (added May 2022) https://arkleg.state.ar.us/Home/FTPDocument?path=%2FAssembly%2FMeeting+Attachments%2F040%2F27518%2FB.6.a+DOH+SBH+List+of+Controlled+Substances.pdf
507. Kratom News Today (secondary; verify primary) (news report) https://kratomnewstoday.com/briefings/jonesboro-arkansas-exxon-owner-mirzali-lakhani-felony-possession-schedule-i-62-kratom-pills-arkansas-regulatory-police-craighead-county-january-25-nea-report/
508. Arkansas DFA news https://www.dfa.arkansas.gov/news/dfa-agents-seize-6400-illegal-products-make-arrests/
509. Arkansas DFA news https://www.dfa.arkansas.gov/news/more-than-7600-illicit-products-seized-from-vape-and-tobacco-stores/
510. CA: Cal. Health & Safety Code 104559.5 (flavored tobacco incl. e-cigarettes) https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=104559.5
511. CA: Cal. Code Regs. tit. 17 secs. 23000-23015 (CDPH hemp regs); AB 8 (2025) https://www.cdph.ca.gov/Programs/OLS/CDPH%20Document%20Library/DPH-24-005B-IHCannibinoidsFinalRegulationText.pdf
512. California ABC Illegal Hemp Enforcement page; Governor release Oct 31, 2026 https://www.abc.ca.gov/enforcement/illegal-hemp-enforcement/
513. CO: C.R.S. 25-5-427 (SB 23-271) https://content.leg.colorado.gov/sites/default/files/2023a_271_signed.pdf
514. Colorado AG press release, Sept 21, 2026 https://coag.gov/press-releases/colorado-smoke-shop-owners-to-pay-152000-for-selling-illegal-kratom-products/
515. CT: Conn. Gen. Stat. 21a-240 https://www.cga.ct.gov/current/pub/chap_420b.htm
516. CT: Conn. Agencies Regs. 21a-243-7 (Schedule I), per CT Department of Consumer Protection, 2026 https://portal.ct.gov/dcp/news-releases-from-the-department-of-consumer-protection/2026-news-releases/department-of-consumer-protection-applauds-passage-of-controlled-substance-drug-schedule-updates
517. Milford Times (news report) https://www.themilfordtimes.com/article/police-seize-54-pounds-of-marijuana-from-two-milford-smoke-s
518. New Haven Independent, Apr 7, 2026 (news report) https://www.newhavenindependent.org/2026/04/07/smoke-shop-shuttered-after-pot-bust/
519. DC ABCA release https://abca.dc.gov/release/abca-and-mpd-shut-down-illegal-cannabis-operations-across-district
520. FL: Fla. Stat. 893.03(1)(a) https://www.flsenate.gov/Laws/Statutes/2025/893.03
521. TCPalm, July 10, 2026 (news report) https://www.tcpalm.com/story/money/business/2026/07/10/florida-confiscates-kratom-gas-station-morphine-as-deaths-rise/90766369007/
522. FOX 13 Tampa Bay (news report) https://www.fox13news.com/news/pinellas-park-kwik-stop-owner-employee-accused-thc-products-minors-elementary-school
523. FDACS press release 2025 https://www.fdacs.gov/News-Events/Press-Releases/2025-Press-Releases/Commissioner-Wilton-Simpson-Provides-Update-on-Operation-Safe-Summer-Over-155-000-Illegal-Hemp-Packages-Removed-to-Date
524. FDACS press release 2023 https://www.fdacs.gov/News-Events/Press-Releases/2023-Press-Releases/Commissioner-Wilton-Simpson-Announces-Seizure-of-Over-1-900-Gas-Station-Heroin-and-THC-O-Products-from-Florida-Businesses
525. Georgia Dept. of Agriculture press release https://agr.georgia.gov/pr/georgia-department-agriculture-law-enforcement-operation-leads-seizure-120-pounds-marijuana-and
526. ID: Idaho Code 37-2705 (Schedule I) https://legislature.idaho.gov/statutesrules/idstat/title37/t37ch27/sect37-2705/
527. City of Boise (news report) https://www.cityofboise.org/news/police/2025/july/boise-police-arrest-two-in-ongoing-vape-glass-smoke-shop-investigation/
528. IA: 641 IAC ch. 156 (ARC 8178C) https://www.legis.iowa.gov/docs/aco/arc/8178C.pdf
529. WBKO, Oct 22, 2026 (news report) https://www.wbko.com/2026/10/22/store-clerk-indicted-after-synthetic-drugs-found-muhlenberg-county-convenience-store/
530. LA: La. R.S. 3:1482 https://legis.la.gov/Legis/Law.aspx?d=1147993
531. LA: La. R.S. 40:964 Schedule I(G) (Act 732 of 2024) https://legis.la.gov/Legis/Law.aspx?d=98877
532. St. Tammany Parish Sheriff's Office (news report) https://www.stpso.com/news_detail_T6_R240.php
533. Morgan City Police Department (news report) https://www.morgancitypolice.org/press-releases/mcpd-narcotics-division-arrest-multiple-suspects-in-gas-station-heroin-investigation
534. MD: Md. Code, Health-General 21-2D-02 (retail sale ban) https://mgaleg.maryland.gov/mgawebsite/Laws/StatuteText?article=ghg&section=21-2D-02&enactments=false
535. Maryland ATCC release https://atcc.maryland.gov/public-information/news-press-releases/atcc-announces-major-illegal-thc-seizures-anne-arundel-county
536. St. Mary's County Sheriff's Office (news report) https://www.firstsheriff.com/news/1073/Joint-Operation-Seizes-Over-98000-in-Contraband-Cannabis-and-THC-Products-from-St.-Marys-County-Tobacco-Stores

537. MA: 105 CMR 726.000 (emergency Schedule I, all kratom) https://www.mass.gov/doc/105-cmr-726-temporary-placement-of-kratom-in-schedule-1-pursuant-to-mgl-c-94c-ss-2a-emergency-regulation/download
538. MA: St. 2019 c. 133 (flavored tobacco incl. e-cigarettes, except smoking bars) https://malegislature.gov/Laws/SessionLaws/Acts/2019/Chapter133
539. Shrewsbury Post, Sept 5, 2026 (news report) https://shrewsburypost.com/2026/09/05/kratom-seized-smoke-shop-owner-arrested-in-east-longmeadow/
540. Massachusetts Illegal Tobacco Task Force FY24 Annual Report https://www.mass.gov/doc/task-force-fy24-annual-report/download
541. MI: MCL 333.7214(f) https://www.legislature.mi.gov/Laws/MCL?objectName=mcl-333-7214
542. WDIV ClickOnDetroit (news report) https://www.clickondetroit.com/news/local/2026/09/04/canton-police-crack-down-on-kratom-7-oh-sales-as-legal-questions-remain/
543. MN: Minn. Stat. 342.01 (artificially derived cannabinoid) https://www.revisor.mn.gov/statutes/cite/342.01
544. MN: Minn. Stat. 152.02 subd. 2(f) https://www.revisor.mn.gov/statutes/cite/152.02
545. MS: Mississippi Hemp Cultivation Act (SB 2725, 2020) https://billstatus.ls.state.ms.us/documents/2020/html/SB/2700-2799/SB2725SG.htm
546. MS: Miss. Code 41-29-117 (2023 HB 4) https://billstatus.ls.state.ms.us/documents/2023/html/HB/0001-0099/HB0004SG.htm
547. NBC News (news report) https://www.nbcnews.com/news/us-news/mississippi-police-seize-kratom-make-arrests-deaths-ole-miss-students-rcna599889
548. MO: RSMo 195.900 (2026 HB 2641) https://revisor.mo.gov/main/OneSection.aspx?section=195.900
549. KCTV5, Oct 15, 2026 (news report) https://www.kctv5.com/2026/10/15/missouri-ag-expands-7-oh-kratom-investigation-9-more-companies/
550. MT: Mont. Code Ann. 16-12-117 https://mca.legmt.gov/bills/mca/title_0160/chapter_0120/part_0010/section_0170/0160-0120-0010-0170.html
551. NE: Neb. Rev. Stat. 28-405 (Schedule II) https://nebraskalegislature.gov/laws/statutes.php?statute=28-405
552. NV: SB 49 (2021) https://archive.leg.state.nv.us/Session/81st2021/Bills/SB/SB49_EN.pdf
553. NV: NAC 453.480 (Schedule I) https://www.leg.state.nv.us/NAC/NAC-453.html
554. Nevada CCB Biennial Report 2025 https://ccb.nv.gov/wp-content/uploads/2025/02/CCB-Biennial-Report-2025-FINAL.pdf
555. NH: RSA 439-A:4 https://gc.nh.gov/rsa/html/XL/439-A/439-A-4.htm
556. NH Liquor Commission enforcement agenda https://mm.nh.gov/files/uploads/enforcement/documents/20260402-agenda.pdf
557. NJ: P.L.2019, c.425 (flavored vapor products) https://pub.njleg.state.nj.us/Bills/2018/PL19/425_.HTM
558. NJ: P.L.2025, c.215 (N.J.S.A. 4:28-8; C.2C:35-10f) https://pub.njleg.state.nj.us/Bills/2024/PL25/215_.HTM
559. NJ: P.L.2025, c.249 (N.J. Stat. 24:21-6) https://pub.njleg.state.nj.us/Bills/2024/PL25/249_.HTM
560. NJ AG press release https://www.njoag.gov/ag-platkin-division-of-consumer-affairs-issues-19-notices-of-violation-to-stores-after-investigation-into-illegal-sales-of-flavored-vapor-products-banned-in-new-jersey/
561. NJ Division of Consumer Affairs release https://www.njconsumeraffairs.gov/News/Pages/05152026.aspx
562. City of Albuquerque https://www.cabq.gov/environmentalhealth/news/environmental-health-department-enforces-ban-of-kratom-sales
563. NY: N.Y. Pub. Health Law 1399-mm-1 (flavored vapor products), per NYS Department of Health https://health.ny.gov/press/releases/2020/2020-05-18_fl_nicotine_vapor_products_ban.htm
564. NY: 9 NYCRR Part 114, sec. 114.8 https://cannabis.ny.gov/system/files/documents/2024/01/part-114-exprs-trms-adopted-12-2023.pdf
565. NC: N.C. Gen. Stat. 90-90(2)bb https://www.ncleg.gov/EnactedLegislation/Statutes/HTML/BySection/Chapter_90/GS_90-90.html
566. NC DPS press release https://www.ncdps.gov/news/press-releases/2026/03/27/ale-arrests-business-owner-controlled-substances-and-abc-violations
567. OH: Ohio Rev. Code 928.01 (SB 56) https://codes.ohio.gov/ohio-revised-code/section-928.01
568. OH: Ohio Adm. Code 4729:9-1-01 https://codes.ohio.gov/ohio-administrative-code/rule-4729:9-1-01
569. Ohio Investigative Unit news https://oiu.ohio.gov/about-us/oiu-news/authorities-execute-search-warrants-at-clark-county-businesses
570. OR: HB 3000 (2021) https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB3000/Enrolled
571. SC AG press release https://www.scag.gov/about-the-office/news/attorney-general-alan-wilson-announces-indictments-in-state-grand-jury-operation-ganjapreneur-involving-marijuana-and-illegal-thc-products-being-sold-openly-in-sc-businesses/
572. SD: SDCL 34-20B-118 https://sdlegislature.gov/api/Statutes/34-20B-118.html
573. SD: SDCL 34-20B-12 https://sdlegislature.gov/api/Statutes/34-20B-12.html
574. NewsCenter1 (news report) https://www.newscenter1.tv/news/local/pennington-county-states-attorneys-office-charges-two-smoke-shops-with-illegal-sale-of-hemp
575. South Dakota Searchlight (news report) https://southdakotasearchlight.com/2025/09/24/statewide-sting-operation-returns-charges-for-smoke-shop-owners/
576. WAFF, Sept 11, 2026 (news report) https://www.waff.com/2026/09/11/kratom-seized-21-lincoln-county-businesses/
577. WSMV, July 22, 2026 (news report) https://www.wsmv.com/2026/07/22/man-arrested-allegedly-selling-kratom-trunk-vehicle-middle-tn-gas-station/
578. FOX 17 Nashville (news report) https://fox17.com/news/local/kratom-crackdown-continues-across-tennessee-months-after-statewide-ban
579. KETK (news report) https://www.ketk.com/news/local-news/scorpion-smoke-shop-raids-9-wont-face-criminal-charges-as-civil-cases-settle/amp/
580. UT: Utah Code 58-37-108(2)(a)(viii); 2026 kratom law (non-leaf kratom banned) https://ag.utah.gov/news/new-kratom-law-now-in-effect/
581. UT: Utah Code 76-9-1114 (flavored electronic cigarette products) https://le.utah.gov/xcode/Title76/Chapter9/C76-9-S1114_2025050720250507.pdf
582. UT: Utah Code 4-41-102 https://le.utah.gov/xcode/Title4/Chapter41/4-41-S102.html
583. KUTV (news report) https://kutv.com/news/local/lehi-store-investigation-raises-questions-about-how-utah-monitors-products-on-shelves

584. WA LCB research brief, Jan 12, 2026
https://lcb.wa.gov/sites/default/files/2026-01/Research%20Brief_Intoxicating%20Hemp%20Products_01122026.pdf

585. WV: W. Va. Code 19-12E-3
https://code.wvlegislature.gov/19-12E-3/

586. WVDA Annual Report 2025
https://agriculture.wv.gov/wp-content/uploads/WVDA-Annual-Report-2025.pdf

587. WY: Wyo. Stat. 11-51-101
https://wyoleg.gov/statutes/compress/title11.pdf

588. Riverton Ranger / Lander Journal (news report)
https://rivertonranger.com/lander_journal/dci-vape-shops-searched-in-drug-investigation/article_a2a591bb-03a8-402b-92dc-8ab9dbd9faf2.html

APPENDIX C

C. Data access

All public data behind this report can be downloaded or queried directly.

What	Where
Evidence library, data points and timeline (JSON and CSV)	https://thewileyrule.org/api/data
World literature index	https://thewileyrule.org/api/data/literature and /api/data/literature.csv
Literature summary statistics	https://thewileyrule.org/api/data/literature/stats
Model Context Protocol server for AI tools (search_world_literature and other read-only tools)	https://thewileyrule.org/mcp
Actors and government or court records (Section 12), JSON and CSV	https://thewileyrule.org/api/data/actors and /api/data/actors.csv
Molecular structure assets (SMILES, PubChem and ChEMBL IDs)	Listed with each exhibit; IDs are in Appendix B
Human-readable data pages	https://thewileyrule.org/data, /data/world, /science/molecular

> Actor records are labeled by record type. A listing, complaint or suit is not a finding of guilt.

APPENDIX D

D. Register of FDA kratom import alert listings

FDA Import Alerts 54-15 and 66-41 allow FDA to detain shipments from listed firms and persons without physical examination. A listing is an agency action, not a finding of guilt or wrongdoing, and listed parties may petition for removal. Names and locations are shown exactly as listed.

Name as listed	Type	Location as listed	Record
0904649 BC LTD	Firm	Canada	Import Alert 54-15 red list entry[217]
1001387362 Ontario Inc	Firm	Canada	Import Alert 54-15 red list entry[217]
Andreas Mandai	Individual	Canada	Import Alert 54-15 red list entry[217]
Kathina T	Individual	Canada	Import Alert 54-15 red list entry[217]
Malaspina Gift	Firm	Canada	Import Alert 54-15 red list entry[217]
Three Ocean Export	Firm	Canada	Import Alert 54-15 red list entry[217]
AMC	Firm	Indonesia	Import Alert 66-41 red list entry[218]
Aguslie Sh	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Amc Line Express	Firm	Indonesia	Import Alert 66-41 red list entry[218]
Aswin	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Batuah Maan Cv	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Bikhuk	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Bintang Dua	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Borneo Khatulistiwa Cv	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Broerry Soetarno	Individual	Indonesia	Import Alert 54-15 red list entry[217]
C.V. BALI HERBAL	Firm	Indonesia	Import Alert 54-15 red list entry[217]
CV MELDA FAMILY	Firm	Indonesia	Import Alert 66-41 red list entry[218]
CV TRITOP BORNEO KENCANA	Firm	Indonesia	Import Alert 66-41 red list entry[218]
CV. PRASADA BALI UTAMA	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Cv Fabulift Borneo Mitra	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Cv Leafsync	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Cv. Putra Bali Agung	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Davine Botanical	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Deni I	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Dr. Mahdiri Bersama	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Enggang Borneo	Firm	Indonesia	Import Alert 54-15 red list entry, Import Alert 66-41 red list entry[217,218]
Erlan Setiawan	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Faisal Putra Perdana	Individual	Indonesia	Import Alert 54-15 red list entry[217]

Name as listed	Type	Location as listed	Record
Hendra R	Individual	Indonesia	Import Alert 54-15 red list entry[217]
M. Ridho Rizki Maulufi Alk	Individual	Indonesia	Import Alert 54-15 red list entry, Import Alert 66-41 red list entry[217,218]
Mahmudi SE	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Mardianto	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Marjan Putra	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Mhd Syamsu Bahri	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Mke	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Mulyadi Pasaribu	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Mumung Mulharyana	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Musmuriadi	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Nusi Wandri	Individual	Indonesia	Import Alert 54-15 red list entry[217]
PT Ambat Trading	Firm	Indonesia	Import Alert 54-15 red list entry[217]
PT INDIGO PRIMA	Firm	Indonesia	Import Alert 54-15 red list entry[217]
PT TRANSINDO ANTARIKSA BORNEO	Firm	Indonesia	Import Alert 54-15 red list entry[217]
PT. Angkutan Jasa Aviasi	Firm	Indonesia	Import Alert 54-15 red list entry[217]
PT. Citra Nuansa Buana	Firm	Indonesia	Import Alert 54-15 red list entry[217]
PT. POS INDONESIA (PERSERO)	Firm	Indonesia	Import Alert 66-41 red list entry[218]
PT.PANCA LAKSINDO EXPRESS	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Perwanto	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Priyanti	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Pt Badar Jaya Sakti	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Pt Buana Adhu Gemilang	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Pt Rifa Agung	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Rama Yogaswara	Individual	Indonesia	Import Alert 66-41 red list entry[218]
Rere Adrea Novattra	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Rudi Hartona	Individual	Indonesia	Import Alert 54-15 red list entry, Import Alert 66-41 red list entry[217,218]
TRANSINDO ANTARIKSA LOGISTIK	Firm	Indonesia	Import Alert 54-15 red list entry[217]
Tan Alaindo Mantina	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Teguh Ap	Individual	Indonesia	Import Alert 54-15 red list entry[217]
Zulfikar	Individual	Indonesia	Import Alert 54-15 red list entry[217]
adi dharma putra	Individual	Indonesia	Import Alert 66-41 red list entry[218]
Dr Foerster (M) Sdn Bhd	Firm	Malaysia	Import Alert 66-41 red list entry[218]
Jaymen Mack Enterprise	Firm	Malaysia	Import Alert 54-15 red list entry[217]
Wisdom Herbs Enterprise	Firm	Malaysia	Import Alert 54-15 red list entry[217]
Akita Herbal Products	Firm	Philippines	Import Alert 54-15 red list entry[217]
CHEEVALOME	Firm	Thailand	Import Alert 54-15 red list entry, Import Alert 66-41 red list entry[217,218]
Al Jufri Global Enterprise	Firm	United States	Import Alert 54-15 red list entry[217]
Atofil LLC	Firm	United States	Import Alert 54-15 red list entry[217]
Cantafio, John	Individual	United States	Import Alert 54-15 red list entry[217]

Name as listed	Type	Location as listed	Record
Christopher Mercer	Individual	United States	Import Alert 54-15 red list entry[217]
Clayton Tannery	Firm	United States	Import Alert 66-41 red list entry[218]
Cody Pederson	Individual	United States	Import Alert 54-15 red list entry[217]
Collins, Chris	Individual	United States	Import Alert 54-15 red list entry[217]
Derian, David	Individual	United States	Import Alert 54-15 red list entry[217]
Divinity Product Distribution LLC	Firm	United States	Import Alert 54-15 red list entry[217]
Drd Global Inc	Firm	United States	Import Alert 54-15 red list entry[217]
EAST COAST ADHESIVES LLC	Firm	United States	Import Alert 54-15 red list entry[217]
Earthly Mist	Firm	United States	Import Alert 54-15 red list entry[217]
Fishman Chemical of North Carolina, LLC	Firm	United States	Import Alert 54-15 red list entry[217]
Fjc Tea & Spice Company	Firm	United States	Import Alert 54-15 red list entry[217]
Freedom Vapor	Firm	United States	Import Alert 66-41 red list entry[218]
Galimidi, Yossi	Individual	United States	Import Alert 54-15 red list entry[217]
Green House Kratom	Firm	United States	Import Alert 54-15 red list entry[217]
Holly Chavez	Individual	United States	Import Alert 66-41 red list entry[218]
JS4 SOURCING INC	Firm	United States	Import Alert 66-41 red list entry[218]
Joseph Saporito	Individual	United States	Import Alert 54-15 red list entry[217]
KATZ, DUSTIN G	Individual	United States	Import Alert 54-15 red list entry[217]
Kan, Brian	Individual	United States	Import Alert 54-15 red list entry[217]
Keith Poulos	Individual	United States	Import Alert 54-15 red list entry, Import Alert 66-41 red list entry[217,218]
Lunar Botanicles	Firm	United States	Import Alert 66-41 red list entry[218]
Lynn Collins	Individual	United States	Import Alert 54-15 red list entry[217]
Mana Ent Llc	Firm	United States	Import Alert 54-15 red list entry[217]
Mana Enterprise Llc	Firm	United States	Import Alert 54-15 red list entry[217]
Mary Castellano	Individual	United States	Import Alert 54-15 red list entry[217]
Mc Alliance Llc	Firm	United States	Import Alert 54-15 red list entry[217]
Mcmahan, Robert	Individual	United States	Import Alert 54-15 red list entry[217]
Mood & Mind LLC	Firm	United States	Import Alert 66-41 red list entry[218]
Moon Botanicals LLC	Firm	United States	Import Alert 66-41 red list entry[218]
Nathan John Watters	Individual	United States	Import Alert 66-41 red list entry[218]
Rocky Mountain Bontanicals, Llc	Firm	United States	Import Alert 54-15 red list entry[217]
Rodriguez, Julia	Individual	United States	Import Alert 54-15 red list entry[217]
Scofield, Keegan	Individual	United States	Import Alert 54-15 red list entry[217]
Steven Stott	Individual	United States	Import Alert 54-15 red list entry[217]
Turner, Kevin	Individual	United States	Import Alert 54-15 red list entry[217]
Underground Supps Inc	Firm	United States	Import Alert 54-15 red list entry[217]
WILD ORIGINS LLC	Firm	United States	Import Alert 54-15 red list entry[217]
paul sturgis	Individual	United States	Import Alert 66-41 red list entry[218]

APPENDIX E

E. State by state: banned, sold, enforced

One row per state and DC. **Illegal to sell**: product groups state law bans or restricts so that stronger or unlisted products are illegal, as of November 20, 2026, each with its legal source; notes marked as secondary trackers cite the statute but were not read at the statute. **FDA retail violations**: compliance-check decisions with a warning letter, civil money penalty action or no-sale order, all tobacco, Oct 1, 2024 to Oct 31, 2026; **FDA fine actions** are the civil money penalty decisions among them.[3] FDA says these counts cannot be readily compared across states. **State or local enforcement records found**: substantive actions (seizure, citation, fine, license action, charge, suit or settlement) in published records, including news reports of arrests and seizures, which are allegations. **Illegal groups with no record**: banned product groups with no substantive record found. K = 7-OH or kratom, V = vapes, H = intoxicating hemp, T = tianeptine; * = national searches only. None found is not proof that no enforcement occurred. Appendix A and this appendix use the same official sources for 7-OH status.

State	Illegal to sell under state law	FDA retail violations	of which e-cig	FDA fine actions	State or local enforcement records found	Illegal groups with no record
Alabama	7-OH/kratom banned[389]; vape directory[390]; delta-8 banned[391]; tianeptine banned[392]	576	100	111	4[352,499,500,501]	2 of 4 (V, T*)
Alaska	delta-8 banned[502]	1	1	0	0	1 of 1 (H)
Arizona	7-OH/kratom cap[441]	415	256	95	1[503]	0 of 1
Arkansas	7-OH/kratom banned[504]; vape directory[444]; delta-8 banned[505]; tianeptine banned[506]	373	71	71	3[507,508,509]	2 of 4 (H*, T*)
California	flavored vapes banned[510]; delta-8 banned[511]	449	160	94	4[409,429,512]	0 of 2
Colorado	7-OH/kratom cap[446]; delta-8 banned[513]	632	108	144	1[514]	1 of 2 (H)
Connecticut	7-OH/kratom banned[448]; delta-8 banned[515]; tianeptine banned[516]	735	111	200	2[517,518]	2 of 3 (H*, T*)
Delaware	delta-8 banned[412]; tianeptine banned[412]	88	43	17	0	2 of 2 (H, T)
District of Columbia	7-OH/kratom banned[451]	78	0	5	2[409,519]	1 of 1 (K)
Florida	7-OH/kratom banned[425]; tianeptine banned[520]	2,680	730	524	6[425,426,521,522,523,524]	0 of 2
Georgia	7-OH/kratom cap[413]; tianeptine banned[414]	213	103	19	1[525]	2 of 2 (K (warnings only), T)
Hawaii	7-OH/kratom banned[407]; delta-8 banned[408]	46	15	11	0	2 of 2 (K, H*)
Idaho	delta-8 banned[526]	154	33	36	1[527]	0 of 1
Illinois	None (federal law only)	1,248	580	422	1[409]	n/a
Indiana	7-OH/kratom banned[419]; tianeptine banned[420]	466	188	101	0	2 of 2 (K (warnings only), T*)
Iowa	delta-8 banned[528]	200	27	48	0	1 of 1 (H*)

State	Illegal to sell under state law	FDA retail violations	of which e-cig	FDA fine actions	State or local enforcement records found	Illegal groups with no record
Kansas	7-OH/kratom banned[416]; tianeptine banned[417]	220	24	37	0	2 of 2 (K (warnings only), T*)
Kentucky	7-OH/kratom banned[462]; tianeptine banned[462]	783	40	175	1[529]	1 of 2 (T)
Louisiana	7-OH/kratom banned[464]; vape directory[465]; delta-8 banned[530]; tianeptine banned[531]	715	9	136	6[356,427,428,532,533]	1 of 4 (H)
Maine	None (federal law only)	98	35	9	0	n/a
Maryland	tianeptine banned[534]	642	217	318	2[535,536]	1 of 1 (T)
Massachusetts	7-OH/kratom banned[537]; flavored vapes banned[538]	493	91	83	2[539,540]	0 of 2
Michigan	tianeptine banned[541]	1,647	411	521	1[542]	1 of 1 (T)
Minnesota	delta-8 banned[543]; tianeptine banned[544]	981	110	257	1[409]	2 of 2 (H (warnings only), T*)
Mississippi	7-OH/kratom cap[397]; vape directory[398]; delta-8 banned[545]; tianeptine banned[546]	134	9	9	3[400,547]	2 of 4 (V, T*)
Missouri	delta-8 banned[548]	886	122	258	3[271,274,549]	1 of 1 (H (warnings only))
Montana	delta-8 banned[550]	371	163	81	0	1 of 1 (H)
Nebraska	7-OH/kratom registry[474]; vape directory[475]; tianeptine banned[551]	177	45	51	2[474]	1 of 3 (T*)
Nevada	delta-8 banned[552]; tianeptine banned[553]	48	0	0	1[554]	1 of 2 (T*)
New Hampshire	delta-8 banned[555]	271	63	50	1[556]	0 of 1
New Jersey	flavored vapes banned[557]; delta-8 banned[558]; tianeptine banned[559]	2,861	356	1,178	3[431,560,561]	2 of 3 (H, T*)
New Mexico	None (federal law only)	115	12	31	2[409,562]	n/a
New York	flavored vapes banned[563]; delta-8 banned[564]	2,239	160	690	2[409,430]	0 of 2
North Carolina	vape directory[482]; tianeptine banned[565]	328	104	51	1[566]	1 of 2 (V)
North Dakota	7-OH/kratom banned[405]; delta-8 banned[406]	51	4	8	0	2 of 2 (K, H*)
Ohio	7-OH/kratom banned[484]; delta-8 banned[567]; tianeptine banned[568]	714	188	145	2[409,569]	2 of 3 (K, T)
Oklahoma	vape directory[385]; delta-8 banned[386]; tianeptine banned[387]	337	74	59	0	3 of 3 (V, H, T*)
Oregon	delta-8 banned[570]	155	0	42	0	1 of 1 (H)
Pennsylvania	vape directory[422]	870	130	135	1[424]	1 of 1 (V (warnings only))
Rhode Island	7-OH/kratom cap[401]; flavored vapes banned[402]; delta-8 banned[403]	159	8	42	0	3 of 3 (K, V, H*)
South Carolina	7-OH/kratom cap[488]	632	94	108	1[571]	1 of 1 (K)

State	Illegal to sell under state law	FDA retail violations	of which e-cig	FDA fine actions	State or local enforcement records found	Illegal groups with no record
South Dakota	delta-8 banned[572]; tianeptine banned[573]	96	26	11	2[574,575]	1 of 2 (T)
Tennessee	7-OH/kratom banned[394]; tianeptine banned[396]	708	121	121	3[576,577,578]	1 of 2 (T*)
Texas	7-OH/kratom cap[382]; delta-8 banned[383]	2,191	1,448	649	4[269,275,384,579]	0 of 2
Utah	7-OH/kratom banned[580]; flavored vapes banned[581]; delta-8 banned[582]; tianeptine banned[493]	5	0	0	2[583]	2 of 4 (H, T*)
Vermont	7-OH/kratom banned[410]; delta-8 banned[411]	35	1	2	1[409]	2 of 2 (K, H)
Virginia	7-OH/kratom cap[377]; vape directory[378]; tianeptine banned[379]	976	170	173	1[381]	3 of 3 (K*, V, T*)
Washington	None (federal law only)	991	163	255	1[584]	n/a
West Virginia	delta-8 banned[585]	259	155	63	1[586]	0 of 1
Wisconsin	7-OH/kratom banned[374]; vape directory[375]	777	227	164	1[376]	1 of 2 (K)
Wyoming	delta-8 banned[587]	100	5	25	1[588]	0 of 1