

Frequently Asked Questions

Synthetic Drugs - Synthetic Cannabinoids & Synthetic Stimulants

Q: What are synthetic or designer drugs?

A: Synthetic or designer drugs are substances chemically produced in a laboratory and are designed to mimic or enhance the effects of natural drugs. More specifically, Quest Diagnostics delineates two categories of illicit synthetic drugs: synthetic cannabinoids (a.k.a. “synthetic marijuana”, “Spice” or “K2”) and synthetic cathinones or stimulants (a.k.a. “Bath Salts”). Synthetic drugs are not new; yet, in the past five years, they have emerged as new drug threats. Hundreds of distinct drugs are available and as one synthetic, or “designer”, drug is identified, multiple others are being synthesized and marketed. Clandestine drug manufacturers continuously change the chemical compounds in an attempt to stay ahead of detection and evade DEA and other regulatory requirements.

Q: How does Quest Diagnostics select the substances included in its synthetic drug panels?

A: The synthetic cannabinoids and synthetic stimulants were selected for our panels because they are commonly identified in synthetic drug-containing products. We are working collaboratively with the oil and gas industry and other service providers (laboratories) to periodically refine the panel based on information from the National Forensic Laboratory Information System (NFLIS), the Drug Enforcement Administration (DEA), peer-reviewed scientific literature and industry-observed trends and usage. Compounds change frequently. As such, this team of scientific experts continually monitors and makes adjustments to their synthetic drug testing panels with the goal of providing a standardized panel that can detect the most relevant drugs from an ever-changing list of substances.

Q: How should an employer include synthetic drugs in their drug testing program?

A: Over the last few years, synthetic drug use has expanded among young adults and, more recently, in certain industries. Concerned employers should include a provision in their drug testing policy specifically prohibiting the use and/or possession of synthetic drugs in the workplace, similar to policies regarding alcohol and illicit drugs. Employers should consult an attorney who is licensed to practice in their state to help develop their policy. Finally, a decision to monitor synthetic drugs in workplace drug testing should take into account user demographics, workforce industry, regional patterns of drug use and testing benefits and limitations.

Q: What are synthetic cannabinoids?

A: Synthetic cannabinoids are sometimes sold as “herbal incense” and resemble potpourri or dried plant material, similar in appearance to marijuana. Synthetic cannabinoids act

on the same receptor in the human body as Δ 9-tetrahydrocannabinol (THC), the main psychoactive ingredient in marijuana and produce effects similar to marijuana. They are commonly used via smoking, snorting or oral ingestion. They are sometimes misleadingly called "synthetic marijuana" or "fake weed" and they are often marketed as "safe," legal alternatives to marijuana.

Q: Are synthetic cannabinoids the same as marijuana?

A: No. Although these compounds mimic the effects of THC, synthetic cannabinoids are not marijuana. In fact, they may even produce more intense responses with smaller amounts of the drug. It is estimated that many of synthetic cannabinoids are between four and fifty times (4-50x) more potent than the THC found in marijuana.

Q: What substances are found in synthetic cannabinoid products?

A: Suppliers of synthetic cannabinoid products claim that they are selling products composed of natural essences. However, the chemicals sprayed on the plant material are often not listed on the label and these compounds/chemicals bind to the same receptor (cannabinoid receptor) in the body as THC and produce marijuana-like effects. Manufacturers may apply more than one of these synthetic chemicals to their product, creating a mix of drug substances instead of a single active ingredient. More recently, the dosage has shifted to a powder form which allows people to titrate (or continuously measure and re-adjust) their dosages and blends.

Q: What are the effects of synthetic cannabinoid use?

A: Reported adverse effects can include agitation, anxiety, nausea, vomiting, tachycardia (fast, racing heartbeat), elevated blood pressure, tremors, seizures, hallucinations, paranoid behavior and non-responsiveness. The effects of synthetic cannabinoids are unpredictable due to a constantly changing variety of chemicals used, manufacturing processes devoid of quality controls and regulatory oversight, and the varying amount of the substance(s) applied to the dried plant material.

Q: What are some common names of products that contain synthetic cannabinoids?

A: Some of the more common product names include "K2" (K3, K4), "Spice," "Bliss," "Black Mamba," "Bombay Blue," "Fake Weed," "Genie," "Mad Hatter," "Rocket Engine" and "Sky." Marketed as "legal" highs, synthetic cannabinoids are commonly purchased in head shops, tobacco shops and various retail outlets as well as on the internet and labeled "not for human consumption."

Q: Which synthetic cannabinoid compounds are being detected by the Quest panel?

A: Currently, our synthetic cannabinoid panel detects the use of the following compounds: AB-CHMINACA, AB-FUBINACA, AB-PINACA/5F-AB-PINACA, ADB- PINACA, ADBICA, AKB-48 (APINACA), BB-22, JWH-018/AM-2201, JWH-073, PB-22/5F-PB-22 and UR -144/ XLR11.

Q: How does Quest Diagnostics report results for synthetic cannabinoids?

A: Our panel includes 15 synthetic cannabinoid analytes. We report a final result for the class of drugs and do not list each synthetic cannabinoid compound individually. If a synthetic cannabinoid is detected, the report will indicate the specific analyte that confirmed positive along with the reporting level and method (MS).

Q: What are synthetic stimulants (commonly called “Bath Salts”)?

A: Synthetic stimulants are amphetamine-like drugs (e.g. cathinone family) which are found naturally in the khat plant and are sometimes referred to as “legal cocaine” and “legal ecstasy.” Synthetic stimulants are used via injection, inhalation or snorting. They are white or brown crystal-like powders sold in small foil and plastic packages labeled “not for human consumption” to evade FDA regulatory requirements.

Q: What are the effects of synthetic stimulant use?

A: Synthetic stimulants may induce unpredictable and sometimes severe physical effects lasting minutes or even hours. The drugs produce an excessive release of dopamine and have a high potential for addiction with extreme cravings and drug-seeking behavior. Adverse effects can include agitation, dehydration, hyperthermia, euphoria, increased sociability and sex drive, paranoia and hallucinatory delirium with some users even displaying psychotic and violent behavior. Similar to synthetic cannabinoids, the compounds continue to evolve and manufacturing processes are devoid of quality controls and regulatory oversight.

Q: What are some common names of products that contain synthetic stimulants?

A: Some common names are “Bath Salts,” “Plant Food,” “Gravel” and “Flakka.” In addition, some brand names include “Ivory Wave,” “Purple Wave,” “Vanilla Sky,” “White Rush,” “White Girl,” “White China,” “Dynamite,” “Bliss,” “White Lightening,” “Cloud-9” and “White Dove.”

Q: Which synthetic stimulants are being tested in the Quest Diagnostics panel?

A: Our synthetic stimulants panel provides an extensive list of analytes, allowing for drug detection of various forms of synthetic stimulants. Analytes being tested include: alpha-PVP, Butylone, Flephedrone (4-Fluoromethcathinone), MDPV, Mephedrone, Methedrone, Methylone, Pentedrone and Pentylone.

Q: Can a synthetic drugs panel be included in the standard drug panel?

A: In order to detect synthetic drugs, different methods of testing outside of a standard, 5-panel urine drug screen must be utilized – e.g., a standard test for marijuana will not detect synthetic cannabinoids. Clients will need to order the synthetic drugs panel in addition to their standard drug panel.

Q: What is the legal status of synthetic drugs?

A: The Synthetic Drug Abuse Prevention Act is part of the FDA Safety and Innovation Act of 2012, signed into law by President Obama. This law permanently placed 26 individual synthetic cannabinoids and cathinones into Schedule I of the Controlled Substances Act (CSA). In addition, the Drug Enforcement Agency (DEA) has instituted emergency scheduling for a number of these compounds, however many of these substances are still not illegal at the federal level.

According to the National Conference of State Legislatures, all 50 states have banned two types of the synthetic drugs - cannabinoids and cathinones - with the majority doing so via legislation. Initially, state legislative action targeted specific versions of these drugs with individual bans. However, minor changes to the chemical composition of these substances can create new, but very similar, drugs not previously covered by law. In response, legislation in subsequent years has been more general in nature, targeting entire classes of substances or using broad language to describe the prohibited drugs.

- [Synthetic Drug Threats](#) – National Conference of State Legislatures (NCSL)
- [Synthetic Cannabinoids Enactments by State](#) – NCSL
- [Synthetic Drugs](#) – Office of National Drug Control Policy
- [Synthetic Marijuana](#) – National Institute on Drug Abuse
- [EmployerSolutions.com](#) – Testing for Synthetic Drugs
- [Synthetic Drugs: What You Need to Know](#) – Quest Diagnostics webinar

Q: What specimen type is used for synthetic drug testing?

A: Urine is used in testing for synthetic cannabinoids and stimulants.

Q: What is the testing methodology for the synthetic drug panels?

A: Synthetic cannabinoid and stimulant drug panels are screened using liquid chromatography tandem mass spectrometry (LC-MS/MS). Any non-negative screening (initial) test is also confirmed by LC-MS/MS.

Q: What is the standard turnaround time for a lab-based urine test for synthetic drugs?

A: Urine drug test specimens go through a two-tiered testing process at the laboratory. The initial screening is performed on one portion of the specimen and is designed to isolate negative specimens from those that need additional testing to confirm the outcome. Negative screening results are typically released within 24 to 48 hours and non-negative confirmations are typically released within an additional 24 to 48 hours.

Q: How much does a drug test for synthetic drugs cost?

A: Clients should consult with their Sales or Account Management representatives for more information about pricing.