

Agilent Cannabis Pesticide and Mycotoxin Kit – LC/MS and GC/MS 7890/8890 General

p/n 5610-2051
User Guide



Congratulations on taking a big step in pesticide and mycotoxin analysis for cannabis flower samples. Through the purchase of the Agilent Cannabis Pesticide and Mycotoxin kit, you have received the necessary consumables and resources to get up and running—FAST!

This guide provides additional information about each of the parts included in your kit, including application-specific maintenance recommendations, and is broken into the following sections:

Sample preparation

Includes p/n:

5982-1365
5982-9313
5610-2049

Sample containment

Includes p/n:

5183-2072
5182-0718

Instrument supplies

Includes p/n:

LC:

G2453-85060
G1946-85021

GC:

G4513-80220
5183-4759
5190-4006
5181-3323
G2855-20530
G3188-27501
G3440-81011
G3440-81013

Separation

Includes p/n:

LC:

695975-312
823750-914

GC:

19091S-431UI

Cannabis Pesticide and Mycotoxin Kit: LC/MS and GC/MS 7890/8890 General, p/n 5610-2051

Sample preparation



SampliQ SPE cartridges: C18 endcapped, 6 mL tubes, 500 mg, 30/pk

Qty: 14

p/n 5982-1365

Optimized sample preparation is critical for successful pesticide and mycotoxin determination in dry cannabis flower. Agilent SampliQ C18 endcapped solid phase extraction (SPE) cartridges are used for “pass-through cleanup” of cannabis extracts. With pass-through cleanup, the sample extract is sent through the cartridge to allow the pesticides and mycotoxins to pass through, and interfering compounds to be retained on the cartridge. The significant endcapping provides a more inert cleanup, and will be less likely to retain analytes of interest on the cartridge. Cartridges are designed for one-time use, and should be discarded after extraction.



Ceramic homogenizers for 50 mL tubes, 100/pk

Qty: 8

p/n 5982-9313

Ceramic homogenizers are used to grind your cannabis sample using vertical shaking. They make analyte extraction easier by:

- Increasing extraction efficiency
- Maintaining reproducible extractions
- Minimizing grinding/extraction variance between users

Use two ceramic homogenizers per sample. Ceramic homogenizers are intended for one-time use, and should be discarded after use.



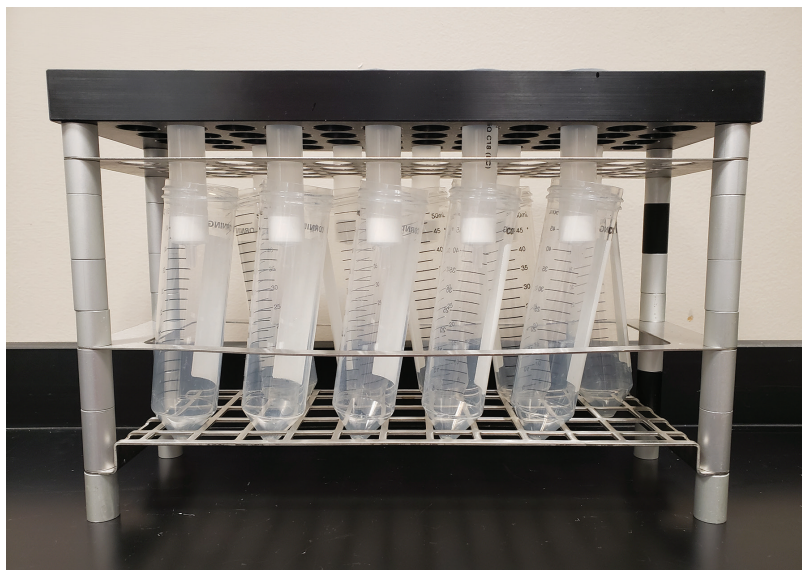
Centrifuge tubes, 50 mL, 25/pk

Qty: 32

p/n 5610-2049

Centrifuge tubes (50 mL) are essential for cannabis sample preparation. One centrifuge tube is used to prepare the initial cannabis sample. Another centrifuge tube is used to collect the final eluent after the SPE protocol. When using these tubes, do not overtighten the caps. These tubes are designed to seal with very little tightening, and can leak if overtightened. For the best seal, ensure that the sealing surface is free of powders, sample, or liquid before placing the cap on the tube.

User tip: Use the Agilent 6 mL SPE cartridge rack (p/n 5191-4104) and PPM-48 waste rack (p/n 5191-4102) to set up your SampliQ SPE cartridges and 50 mL centrifuge tubes easily. **Note:** Only the aforementioned racks, and not a PPM-48 processor, are recommended for this extraction.



To streamline your cannabis workflow, see Table 1 for more one-time use purchases and recommended consumables.

Sample containment



Vial, screw top, amber, write-one spot, deactivated (silanized), certified, 2 mL, 100/pk

Qty: 8

p/n 5183-2072

Screw top vials are an excellent alternative to crimp cap vials, and eliminate the need for a manual or automatic crimper. The amber color is necessary for cannabis samples that may have sensitive compounds (semivolatile organic compounds or pesticides that tend to break down or “disappear” in the inlet/column, are sensitive to temperature, or known to degrade over time when in a mixture). The amber vial reduces the risk of analyte loss due to exposure to light.



Cap, screw, green, PTFE/red silicone septa, 100/pk

Qty: 8

p/n 5182-0718

This cap features a PTFE/red silicone septum, which is compatible with most solvents. PTFE is least likely to interact with the sample and less likely to extract siloxanes into the sample that can interfere chromatographically with your analytes of interest. Screw caps are easier to use, and eliminate the need for a manual or automatic crimper. Plus, you do not need to worry about overcrimping or undercrimping the cap, which can lead to analyte loss.

Instrument supplies

LC

Formic acid (mobile phase modifier), 1 × 5 mL vial

Qty: 1

p/n G2453-85060

Ammonium formate (mobile phase modifier), 6 × 2.2 mL vial

Qty: 1

p/n G1946-85021

Formic Acid and ammonium formate are high-quality mobile phase modifiers that help improve your overall chromatography. These modifiers work together to:

- Improve peak shape by minimizing unwanted interactions between the analyte and the column stationary phase
- Increase sensitivity by improving ionization
- Control the analyte ionization state that can be used to achieve baseline resolution and separate isobars or matrix components from your sample

GC

ALS syringe, Blue Line, 10 μ L, fixed needle, 23/42/cone, PTFE-tip plunger

Qty: 1

p/n G4513-80220

Commonly used autosampler syringe to inject samples into GC inlet. Smallest suggested injection on a 10 μ L syringe is 1 μ L. **Application specific:** Replace when needle or plunger becomes contaminated by the samples being analyzed. The lifetime can be extended by proper sample preparation and solvent rinses between injections.

Inlet septa, Advanced Green, nonstick, 11 mm, 50/pk

Qty: 1

p/n 5183-4759

This is the recommended inlet septum for the majority of GC applications (fits Split/Splitless and multimode inlets). Replace when installing a new liner.

Inlet liner, Ultra Inert, splitless, dimpled, 2 mm id, 5/pk

Qty: 2

p/n 5190-4006

For programmed temperature injections, the narrow diameter helps keep the sample in a tight band for transfer onto the column head. Dimples add surface area to better transfer heat to the sample and volatilize upon temperature ramping. Must be changed regularly for longer column lifetime. When analyzing Captan, a clean and inert injection port is required. **Application specific:** Replace approximately every 40 injections.





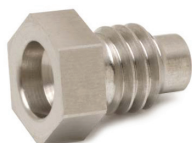
Ferrule, 0.4 mm id, 15% graphite/85%Vespel, 0.1 to 0.25 mm column, 10/pk

Qty: 1

p/n 5181-3323

Standard ferrule for 0.25 columns to use with self-tightening column nuts.

Ferrules are a one-time use consumable, and should be replaced every time you make a new connection.



Internal nut, CFT capillary fitting

Qty: 2

p/n G2855-20530

This nut is used with CFT unions, such as the purged ultimate union (or other CFT devices).

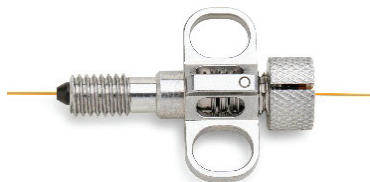


Ferrule, flexi inert 0.25 mm col, 10/pk

Qty: 1

p/n G3188-27501

These ferrules are used with the above CFT internal nuts (G2855-20530) to make connections with CFT unions and other CFT devices. Ferrules are a one-time use consumable, and should be replaced every time you make a new connection.

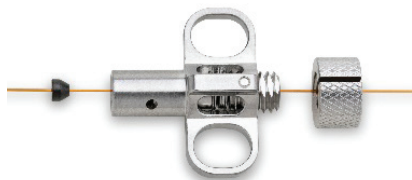


Column nut, collared, self-tightening, inlet/detector

Qty: 1

p/n G3440-81011

The self-tightening, collared column nut is designed for easy, finger-tight installation of the column into the inlet (or non-MS detectors). It includes a collar that helps to set the installation depth for the column into the inlet. Only to be used with a graphite/vespel ferrule (5181-3323). See image for proper orientation of column nut and ferrule.



Column nut, collared, self-tightening, MSD

Qty: 1

p/n G3440-81013

The self-tightening, collared column nut is designed for easy, finger-tight installation of the column into the mass spectrometer (MS) transfer line. It includes a collar that helps to set the installation depth for the column into transfer line. Only to be used with a graphite/vespel ferrule (5181-3323). See image for proper orientation of column nut and ferrule.

Separation

LC

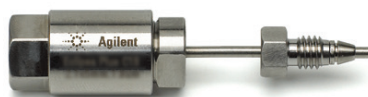


Agilent InfinityLab Poroshell 120 Phenyl-Hexyl, 3.0 × 100 mm, 2.7 µm LC column

Qty: 1

p/n 695975-312

This is your main liquid chromatography column that separates your analytes from other molecules being present in the sample. Separation of analytes from other, irrelevant components is key to reliable detection and quantification of your components. **Application specific:** Replace approximately every 400 injections.



Agilent InfinityLab Poroshell 120 Phenyl-Hexyl, 3 × 5 mm, 2.7 µm, UHPLC guard, 3/pk

Qty: 1

p/n 823750-914

A guard column is a short metal tube filled with silica material that is identical to the material of your main LC column. Guard columns are not meant to separate your sample but to protect your main column from clogging with particles or sample compounds that stick to the column phase material and alter its properties. The guard column is “sacrificed” and regularly exchanged to increase the lifetime of your main LC column. **Application specific:** Replace approximately every 135 injections.

How to connect your LC column

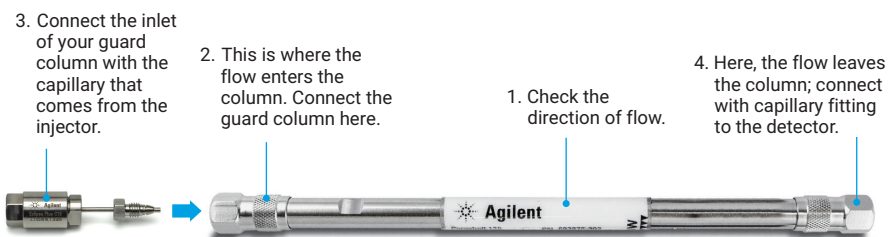
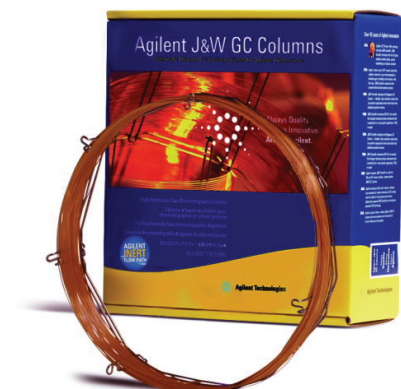


Figure 1. How to connect your LC column.

GC



Agilent J&W HP-5ms Ultra Inert GC column, 15 m × 0.25 mm, 0.25 µm

Qty: 2

p/n 19091S-431UI

This is a commonly used 5% phenyl/95% methylpolysiloxane capillary column with Ultra Inert deactivation that has lower bleed (less background). This column provides good separation of most compounds across many compound classes. Commonly favored configuration for U.S. customers: 15 m × 0.25 mm. Replacement of the columns depends on the sample injected and the method conditions. Cleaner matrices will reduce the amount of matrix that goes through the column and thus maintain a longer lifetime. Operating within the column's temperature guidelines will prolong the life of the column phase. **Application specific:** Replace approximately every 400 injections.

Additional recommended products to complete your workflow

Use these items to optimize your specific workflow.

Table 1. Recommended consumables.

Sample Preparation	Part Number
SPE cartridge rack, 6 mL, for PPM-48	5191-4104*
Waste rack and three waste bins, for PPM-48	5191-4112*
Sample Containment	Part Number
Vial insert, 250 µL, deactivated glass with polymer feet, 100/pk	5181-8872
LC Analysis	Part Number
InfinityLab ACN, 1 L	5191-4496
InfinityLab MeOH, 1 L	5191-4497
InfinityLab ultrapure water, 1 L	5191-4498
Quick Connect assembly, 0.12 × 105 mm	5067-5957
Quick Connect assembly, 0.17 × 105 mm	5067-6166
Quick Turn fitting	5067-5966
Quick Turn capillary, 0.12 × 280 mm	5500-1191
GC Analysis	Part Number
Purged Ultimate union – Inert	G3186-60581*
Pesticide Chemical Standards	Part Number
Oregon pesticides standard 1	SOR-100-1
Oregon pesticides standard 2	SOR-105-1
Oregon pesticides standard 3	SOR-120-1
Nevada pesticides standard	SNV-100-1
Colorado pesticides standard	SCO-100-1
California (universal) pesticide standard 1	SCA-200-1
California (universal) pesticide standard 2	SCA-201-1
California (universal) pesticide standard 3	SCA-202-1
Supplemental pesticides standard	SCA-211-1

* Item is intended to be a one-time purchase.

If you need a custom reference standard, click "Request Custom Standard" on www.agilent.com/en/product/chemical-standards. And if you have any chemical standards questions, email chem-standards-support@agilent.com for a quick response by our experts.

Visit our new ordering guide at www.agilent.com/chem/CannabisKitOrdering. There, you can:

- Use our *MyList* links to find recommendations for sample preparation, containment, calibration, and analysis.
- Build a *MyFavorites* list, and eliminate the hassle of entering individual part numbers when you reorder.

Agilent products and solutions are intended to be used for cannabis quality control and safety testing in laboratories where such use is permitted under state/county law.

This information is subject to change without notice.