Agilent

Trusted Answers

# Agilent Cannabis Pesticide and Mycotoxin Kit – LC/MS and GC/MS Intuvo 9000

p/n 5610-2053

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

G4581-60260

5190-9072

G4587-60665

## Separation

**Includes p/n:**

**LC:**

695975-312

823750-914

**GC:**

19091S-431UI-INT

# Cannabis Pesticide and Mycotoxin Kit – LC/MS and GC/MS Intuvo 9000, p/n 5610-2053

## 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

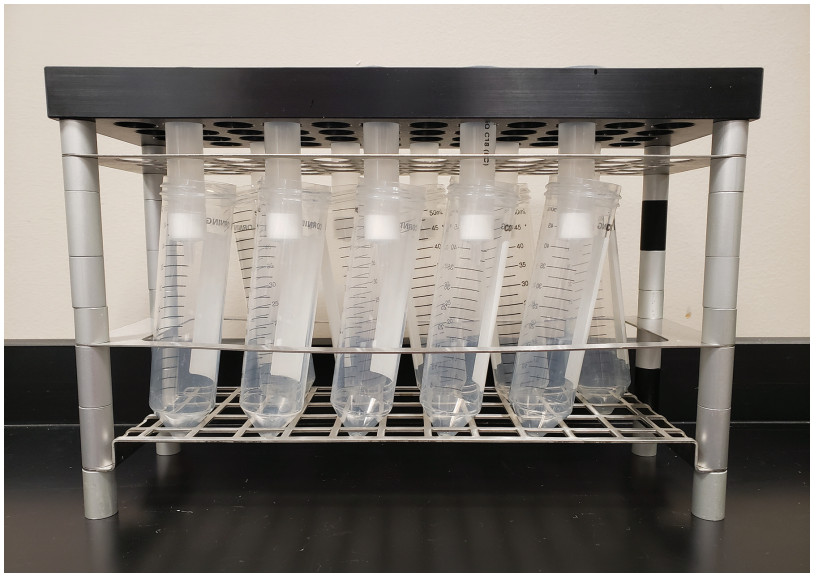
Use two ceramic homogenizers per sample. Ceramic homogenizers are intended for one-time use, and should be discarded after use.

### 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 µL, 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 µL syringe is 1 µL.
**Application specific:** Replace when needle or plunger become 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.

### Compression bolt, Intuvo

Qty: 2
p/n G4581-60280

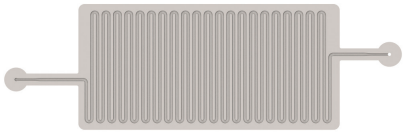
Used to make leak-free connections in in the Intuvo flowpath. Replace every 10 Guard Chips.


5190-9072
≤ 350 °C

### Intuvo polyamide gasket, 5/pk

Qty: 1
p/n 5190-9072

Intuvo polyamide gaskets are used to seal the connections of the flowpath. Compression bolts (G4581-60280) help in creating a leak free connection with the gasket. Polyimide gaskets are suggested for applications running below 350 °C. Replacement recommended every new connection.



### Guard Chip, Intuvo, MMI, 2/pk

Qty: 5
p/n G4587-60665

The Guard Chip serves as the Intuvo flowpath connection between the inlet liner and the rest of the flowpath. The Guard Chip acts like a UHPLC guard by protecting the flowpath (mainly the columns) from matrix.
**Application specific:** Replace approximately every 40 injections.

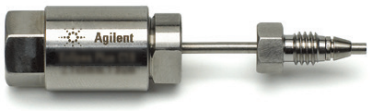
## Separation

## 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 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.

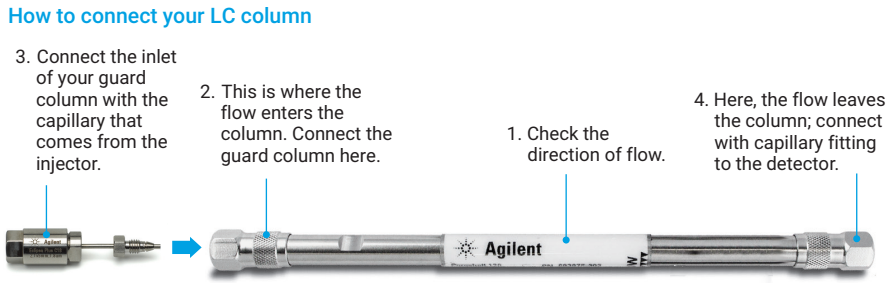



Figure 1. How to connect your LC column.


## GC

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

Qty: 2
p/n 19091S-431UI-INT

To be used on Intuvo systems only. Commonly used 5% phenyl/95% methylpolysiloxane capillary column with Ultra Inert deactivation that has lower bleed (less background). Provides good separation of most compounds across many compound classes. **Application specific:** Replace approximately every 400 injections.

## Want to customize your kit?

Agilent Cannabis Pesticide and Mycotoxin Kits were designed to provide you with consumables for 400 runs. Use Table 1 for guidance on one-time purchase items and recommendations for additional products that support this 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 |
| **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.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