

# Consumables Guide for the Cannabis Testing Lab



# Potency Testing - HPLC

## Cannabinoid Standards

Shimadzu manufactures two cannabinoid mixtures to reduce the time of your sample preparation. Each standard has a concentration of 250ug/mL housed in a flame sealed ampule. All Shimadzu standards are manufactured to ISO-17025 Guide 34 requirements.

10-part mix contains: THC-A,  $\Delta$ 8-THC,  $\Delta$ 9-THC, CBD, CBD-A, CBD-V, CBN, CBG, CBG-A, CBC

11-part mix contains: THC-A, THC-V,  $\Delta$ 8-THC,  $\Delta$ 9-THC, CBD, CBD-A, CBD-V, CBN, CBG, CBG-A, CBC



Part Number	Description
220-91239-20	Certified Cannabinoids Standards Mixture - 10 Components 1mL x 250ug/mL
220-91239-21	Certified Cannabinoids Standards Mixture - 11 Components 1mL x 250ug/mL

## Columns & Vials

Shimadzu specifically engineered a superficially porous liquid chromatography analytical and guard column for the analysis of cannabinoids. Ensure the ultimate in resolution and sensitivity for cannabis analysis by using the NexLeaf™ brand.

Part Number	Description
220-91525-70	NexLeaf™ CBX™ for Potency, LC Column 2.7 $\mu$ m 150 mm, 4.6 mm ID
220-91525-72	NexLeaf™ CBX™ Guard Column 2.7 $\mu$ m, pack of 3
220-91525-73	NexLeaf™ Guard Column Holder
227-34001-01	LabTotal Vial Kit, 100/pk
220-90631-01	Vial, 40mL, EPA Clear, 72/pk



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# Potency Testing - HPLC

## Solvents

Solvent purity and quality are extremely important in analytical testing therefore Shimadzu only recommends Honeywell Burdick & Jackson brand solvents to ensure the highest quality results.

Part Number	Description
220-91394-82	Cannabis Analyzer for Potency Solvent Kit, High Resolution Method
220-91394-81	Cannabis Analyzer for Potency Solvent Kit, High Sensitivity Method
220-91394-80	Cannabis Analyzer for Potency Solvent Kit, High Throughput Method
220-91394-85	High Sensitivity Method Solvent B (Case of 4 X 4L)
220-91394-91	High Sensitivity Method Solvent B (1 X 4L)
220-91394-86	High Throughput Method Solvent A (Case of 4 X 4L)
220-91394-88	High Throughput Method Solvent A (1 X 4L)
220-91394-87	High Throughput Method Solvent B (Case of 4 X 4L)
220-91394-89	High Throughput Method Solvent B (1 X 4L)
220-91394-84	High Resolution Method Solvent B (Case of 4 X 4L)
220-91394-92	High Resolution Method Solvent B (1 X 4L)
220-91394-83	High Resolution/High Sensitivity Method Solvent A (Case of 4 X 4L)
220-91394-90	High Resolution/High Sensitivity Method Solvent A (1 X 4L)
220-91545-12	WATER, LCMS CHROMASOLV, Case, 4 x 4L
220-91545-10	ACETONITRILE, LCMS CHROMASOLV $\geq 99.9\%$ , Case 4 x 4L
220-91545-11	METHANOL, LCMS CHROMASOLV(R), $\geq 99.9\%$ , Case, 4 x 4L
220-91545-70	Formic Acid, LCMS Analytical Grade, 50mL Bottle
220-91545-74	Phosphoric Acid, HPLC Grade 85-90%, 100mL Bottle



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# Pesticide Testing - LCMS

## Pesticide Standards

Shimadzu offers a 204 multiresidue pesticide mixture to reduce your sample preparation time. Each mixture has a concentration of 100ug/mL. Individual pesticide standards are also available if your lab wants to customize method analytes to meet customer needs. Additional information is available upon request.



Part Number	Description
REST-31971	Standards, LC, Multiresidue Pesticide Kit (204 analytes)

## Columns & Vials

Shimadzu specifically engineered a superficially porous liquid chromatography analytical and guard column for the analysis of pesticides in cannabis. Ensure the ultimate in resolution and sensitivity for cannabis analysis by using the NexLeaf™ brand. NexLeaf™ CBX™ provides the ultimate separation for all of your pesticide analysis needs



Part Number	Description
220-91525-71	NexLeaf™ for Pesticides, LC Column 2.7 μm 100 mm, 2.1 mm ID
220-91525-74	NexLeaf™ for Pesticides, LC Column 2.7 μm 150 mm, 2.1 mm ID
220-91525-72	NexLeaf™ CBX™ Guard Column 2.7um, pack of 3
220-91525-73	NexLeaf™ Guard Column Holder
227-34001-01	LabTotal Vial Kit, 100/pk

## Solvents & Sample Preparation

Solvent purity and quality are extremely important in analytical testing; therefore, Shimadzu only recommends Honeywell Burdick & Jackson brand solvents to ensure the highest quality results. An array of sample preparation products exist on the market for pesticide analysis in cannabis. Below are a few QuEChERS items that we recommend.



Part Number	Description
REST-26237	Q-sep® QuEChERS Extraction Salts
REST-26238	Q-sep® QuEChERS Extraction Salts (no tubes)
REST-26243	Q-sep® QuEChERS dSPE Tubes for Extract Cleanup (LC)
REST-26245	Q-sep® QuEChERS dSPE Tubes for Extract Cleanup (LC)
220-91545-12	WATER, LCMS CHROMASOLV, Case, 4 x 4L
220-91545-11	METHANOL, LCMS CHROMASOLV(R), >=99.9%, Case, 4 x 4L
220-91545-70	Formic Acid, LCMS Analytical Grade, 50mL Bottle
220-91545-71	Acetic Acid, LCMS Analytical Grade, 50mL Bottle
220-91545-72	Ammonium Acetate, LCMS Analytical Grade, 25g

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# Pesticide Testing - GCMS

## Columns, Vials & Liners

Shimadzu specifically engineered a GCMS analytical column for the analysis of pesticides in cannabis. Ensure the ultimate in resolution and sensitivity for cannabis analysis by using the Shimadzu columns. Shimadzu provides the ultimate separation for all of your pesticide analysis needs

Part Number	Description
221-75954-30	SH-RXI 5 SIL MS – 30m x 0.25mm x 0.25um
227-34001-01	LabTotal Vial Kit, 100/pk
REST-23336	Topaz Liner, Splitless Single Taper w/Wool, 3.5mm x 5.0 x 95, 5-pk

## Sample Preparation

An array of sample preparation products exist on the market for pesticide analysis in cannabis. Below are a few QuEChERS items that we recommend.

Part Number	Description
REST-26237	Q-sep® QuEChERS Extraction Salts
REST-26125	Q-sep® QuEChERS dSPE Tubes for Extract Cleanup (LC)
REST-26194	Pesticide Residue Cleanup SPE Cartridges (GC)
220-91525-90	Supelco QuE Verde Tube, QuEChERS dSPE Tubes for Extract Cleanup



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# What else do you need for the lab?

## **Pipettes & Tips**

Quality pipettes will last a lifetime and low binding technology coupled with low leaching plastics are critical for obtaining accurate results in cannabis analysis, which is why Shimadzu recommends only Eppendorf® plastics.

Part Number	Description
EPPE-3120000909	Pipette, Eppendorf Research Plus, 3 pack, 0.5-10, 10-100 and 100-1000uL
EPPE-022493024	Pipette Tips, Eppendorf Quality, Reloads, 10 trays x 96 tips, 50-1000uL, LoRet
EPPE-022493022	Pipette Tips, Eppendorf Quality, Reloads, 10 trays x 96 tips, 2-200uL, LoRet
EPPE-022493020	Pipette Tips, Eppendorf Quality, Reloads, 10 trays x 96 tips, 0.5-20uL, LoRet

## **Sample Preparation**

Every lab requires more than just analytical instrumentation; gloves, conical tubes, centrifuges, and vortex mixers are just some of the tools needed for preparing samples.

Part Number	Description
REST-26230	Q-sep 3000 Centrifuge



A cannabis lab needs so much more equipment than can be listed in a simple and concise document so please speak with your Shimadzu sales representative for more information and laboratory supplies.

# Standard Vials & Inserts

## Clear Vial Kits

Part Number	Description
228-45450-91	Vials, LC, 1.5mL KIT CLEAR GLASS, 9mm SCREW CAP, 100/PK
228-45451-91	Vials, LC, 1.5mL KIT CLEAR SILANIZED GLASS, 9mm SCREW CAP, 100/PK
227-34001-01	Vials, LC, LabTotal Kit, 100/pk
220-91498-00	Vials, LC, 1.5mL WITH SNAP CAPS 100/PK
220-91498-01	Vials, LC, 1.5mL SNAP, REDWOOD ONLY
220-91498-02	Vials, LC, 1.5mL Clear Kit w/ Red Snap Cap, Non-slit Septa
220-91498-03	Vials, LC, 1.5mL Clear Kit w/ Red Snap Cap, Pre-slit Septa
220-91521-01	Vials, LC, 1.5mL MT-IT LOW VOLUME SET CLEAR 100/PK
220-91521-18	Vials, LC, 1.5mL CLEAR GLASS S WITH PRE-SLIT SEPTA, 100/PK
220-91521-19	Vials, LC, 1.5mL SCREW-THREAD CLEAR GLASS S, NO CAPS
220-91521-20	Vials, LC, 4mL Clear Glass with Screw Cap and Pre-slit Septa, 100/pk
220-91521-21	Vials, LC, 200uL Clear Qsert Set with Snap Cap
220-91521-25	Vials, LC, 1.5mL Clear with Snap Cap and Pre-Slit Septa, 100/pk
220-91521-31	Vials, LC, 12x32mm, 9mm screw cap PTFE/Silicone septum 100/PK
220-91521-33	Vials, LC, 12x32mm, 9mm screw cap pre-slit PTFE/Silicone septum
220-91521-03	Vials, LC, 200uL QSERT SET CLEAR LA 100/PK

## Amber Vial Kits

Part Number	Description
228-45452-91	Vials, LC, 1.5mL KIT AMBER GLASS, 9mm SCREW CAP, 100/PK
228-45453-91	Vials, LC, 1.5mL SET AMBER SILANIZED GLASS, 9mm SCREW CAP, 100/PK
220-91521-17	Vials, LC, 1.5mL AMBER WITH SNAP CAP, 100/PK
220-91521-26	Vials, LC, 1.5mL Amber with Snap Cap and Pre-Slit Septa, 100/pk
220-91521-27	Vials, LC, 1.5mL Amber Kit w/ Red Snap Cap, Pre-slit Septa
220-91521-29	Vials, LC, 1.5mL AMBER KIT W/RED SNAP CAP, NON-SLIT SEPTA
220-91521-34	Vials, LC, 12 x 32mm amber vial 9mm screw cap pre-slit PTFE/Silicone septum
220-91521-02	Vials, LC, 1.5mL MT-IT LOW VOLUME SET AMBER XLA 100/PK

## Bulk Vial Caps

Part Number	Description
228-45454-91	Vials, LC, 9MM SCREW CAP W/NON-BONDED SEPTUM, NO SLIT, 1000/PK
220-91521-16	Vials, LC, SCREW CAP (9MM) W/ PRE-SLIT SEPTA FOR PROMINENCE VIALS 1000/PK
220-91521-22	Vials, LC, Snap Cap with Non-Slit Septa for 12 x 32mm 2mL Shimadzu, 1000/pk
220-91521-23	Vials, LC, Snap Cap with Pre-Slit Septa for 12 x 32mm 2mL Shimadzu, 1000/pk
220-91521-24	Vials, LC, Screw Cap with Pre-slit Septa for 4mL
220-91521-28	Vials, LC, SCREW CAP WITH NONSLIT SEPTA FOR 4ML

## Inserts

Part Number	Description
228-21284-91	Vials, LC, 300uL INSERT + SPRING FOR 4mL vial (100/PK)
228-21285-91	Vials, LC, 300uL INSERT (NO SPRING) FOR 4mL vial (100/PK)
220-91521-04	Vials, LC, 200uL Inserts for Blue/Red Cap and 8x40 1mL

## Non Glass Vials

Part Number	Description
220-91521-05	Vials, LC, 300uL Polypropylene Set



# Filter Vials & Microtiter Plates

## Filter Vials

Part Number	Description
220-91521-40	Vials, LC, 0.2uM PTFE Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-41	Vials, LC, 0.2uM Nylon Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-42	Vials, LC, 0.2uM PVDF Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-43	Vials, LC, 0.2uM PES Filter , 12x32mm with Pre-Slit Septa, 100/pk.
220-91521-44	Vials, LC, 0.45uM PTFE Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-45	Vials, LC, 0.45uM Nylon Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-46	Vials, LC, 0.45uM PVDF Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-47	Vials, LC, 0.45uM PES Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-48	Vials, LC, 0.2uM eXtreme PTFE Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-49	Vials, LC, 0.2uM eXtreme Nylon Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-50	Vials, LC, 0.2uM eXtreme PVDF Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-51	Vials, LC, 0.2uM eXtreme PES Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-52	Vials, LC, 0.45uM eXtreme PTFE Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-53	Vials, LC, 0.45uM eXtreme Nylon Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-54	Vials, LC, 0.45uM eXtreme PVDF Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-55	Vials, LC, 0.45uM eXtreme PES Filter , 12x32mm with Pre-Slit Septa, 100/pk
220-91521-57	Vials, LC, 0.2uM PTFE nano Filter, 12x32mm with Pre-Slit Septa, 100/pk
220-91521-58	Vials, LC, 0.2uM Nylon nano Filter, 12x32mm with Pre-Slit Septa, 100/pk
220-91521-59	Vials, LC, 0.2uM PVDF nano Filter, 12x32mm with Pre-Slit Septa, 100/pk
220-91521-60	Vials, LC, 0.2uM PES nano Filter, 12x32mm with Pre-Slit Septa, 100/pk
220-91521-61	Vials, LC, 0.45uM PTFE nano Filter, 12x32mm with Pre-Slit Septa, 100/pk
220-91521-62	Vials, LC, 0.45uM PVDF nano Filter, 12x32mm with Pre-Slit Septa, 100/pk

## Microtiter Plates & Covers

Part Number	Description
220-91530-01	Vials, LC, 96-Pos Shallow Well MTP. 350 uL, Round Well, U Bottom
220-91530-02	Vials, LC, 96-pos Shallow Well MTP. 350 uL, Round Well, U Bottom, 12/pk
220-91530-03	Vials, LC, 96-pos Shallow Well MTP. 350 uL, Round Well, U Bottom, 72/pk
220-91530-11	Vials, LC, 96-Pos Shallow Well MTP. 350 uL, Round Well, V Bottom
220-91530-12	Vials, LC, 96-pos Shallow Well MTP. 350 uL, Round Well, V Bottom, 12/pk
220-91530-13	Vials, LC, 96-pos Shallow Well MTP. 350 uL, Round Well, V Bottom, 72/PK
220-91530-21	Vials, LC, 96-Pos Deep Well MTP. 2 mL, Square Well, U Bottom
220-91530-22	Vials, LC, 96-pos Deep Well MTP. 2 mL, Square Well, U Bottom, 12/pk
220-91530-23	Vials, LC, 96-pos Deep Well MTP. 2 mL, Square Well, U Bottom, 72/pk
220-91530-31	Vials, LC, 96-Pos Deep Well MTP. 2 mL, Square Well, V Bottom
220-91530-32	Vials, LC, 96-pos Deep Well MTP. 2 mL, Square Well, V Bottom, 12/pk
220-91530-33	Vials, LC, 96-pos Deep Well MTP. 2 mL, Square Well, V Bottom, 72/pk
220-91530-41	Vials, LC, Snap Cap for DW-MTP Glass Inserts, Blue, 100/pk
220-91530-42	Vials, LC, Snap Cap for DW-MTP Glass Inserts, Natural, 100/pk
220-91530-43	Vials, LC, Snap Cap for DW-MTP Glass Inserts, Green, 100/pk
220-91530-44	Vials, LC, Snap Cap for DW-MTP Glass Inserts, Red, 100 pk
220-91530-45	Vials, LC, Blue CapMat, Pre-Cut T/S Septa for 96-MTP Glass Inserts
220-91530-46	Vials, LC, 500 ul Insert for DW-MTP, Amber, 100/pk
220-91530-47	Vials, LC, 350 ul Insert Kit with MTP
220-91530-40	Vials, LC, 350 ul Insert for DW-MTP, 100/pk
220-91530-50	Vials, LC, Bulk 350 ul Insert for Medium-Well MTP, 1000/pk
220-91530-51	Vials, LC, Bulk Snap Cap for Medium-Well MTP Glass Inserts, Natural, 1000/pk
220-91530-52	Vials, LC, Medium-Well MTP, 500 ul, Round Well, U Bottom
220-91530-93	Vials, LC, Teflon/Silicone Mat for Square Well MTP, Pre-slit, 72/pk
220-91530-94	Vials, LC, Teflon/Silicone Mat for Square Well MTP, Pre-slit, 12/pk
220-91530-95	Vials, LC, Teflon/Silicone Mat for Round Well MTP, Pre-slit, 72/pk
220-91530-96	Vials, LC, Teflon/Silicone Mat for Round Well MTP, Pre-slit, 12/pk
220-91530-97	Vials, LC, Teflon/Silicone Mat for Square Well MTP, Pre-slit
220-91530-98	Vials, LC, Teflon/Silicone Mat for Round Well MTP, Pre-slit

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URL: [www.shimadzu.com/an/](http://www.shimadzu.com/an/)

**Shimadzu Scientific Instruments**  
7102 Riverwood Drive, Columbia, Maryland 21046, U.S.A.  
Phone: 800-477-1227/410-381-1227, Fax: 410-381-1222  
URL: [www.ssi.shimadzu.com](http://www.ssi.shimadzu.com)

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