

Cannabis Testing Methods and Specifications

Test	Method	Validated on Cannabis Plant Material	Validated on Cannabis Extracts or Concentrates	Specification or Limit
Potency	A dried and homogenized portion of cannabis or an aliquot of cannabis extract is extracted with methanol with solvents, diluted appropriately and analyzed by HPLC/UV-Vis or HPLC/MS/MS. Results are reported on an as-received basis (not corrected for moisture content) unless otherwise requested by the client.	Yes	Yes	Not Applicable
Cannabinoid Profile	A dried and homogenized portion of cannabis or an aliquot of cannabis extract is extracted with solvents, diluted appropriately and analyzed by HPLC/MS/MS. Results are reported on an as-received basis (not corrected for moisture content) unless otherwise requested by the client.	Yes	Yes	Not Applicable
Pesticides	A homogenized portion of cannabis or an aliquot of cannabis extract is extracted with acetonitrile, diluted appropriately and analyzed using both HPLC/MS/MS and GC/MS/MS.	Yes	Yes	Health Canada
Metals	A dried and homogenized portion of cannabis or an aliquot of cannabis extract is digested with nitric acid in a closed vessel microwave digestion system to completely dissolve the material in an aqueous matrix. The digested material is diluted appropriately and analyzed by ICP-MS.	Yes	Yes	USP-232

Microbial Analysis	The cannabis extract or a dried cannabis sample is collected in a clean container. A specific amount of this sample is cultured in media. Microbial counts are determined via presence/absence or dilute-to-specification methods by adding aliquots of this sample solution to organism-specific test vials. Additional confirmation analyses are performed for positive samples.	Yes	Yes	As specified by the client
Aflatoxins	A homogenized portion of cannabis or an aliquot of cannabis extract is extracted with acetonitrile, diluted appropriately and analyzed by HPLC/MS/MS.	Yes	Yes	USP-561
Terpene Profile	A homogenized portion of cannabis or an aliquot of cannabis extract is extracted with methanol, diluted appropriately and analyzed GC/MS.	Yes	Yes	Not Applicable
Water Activity	A portion of the plant material as received by the client is added to a sealed chamber in which a laser determines the vapor pressure in the headspace, which correlates to the Water Activity.	Yes	Not Applicable	Not Applicable
Loss on Drying (Moisure)	Gravimetric: The difference in weight between the material as received and after drying it at 105° C.	Yes	Not Applicable	Not Applicable
Residual Solvents	Cannabis extract or concentrate is diluted with N,N-dimethylacetamide and measured into a headspace vial. The vial is then heated and agitated. A portion of the headspace is subsequently analyzed by GC/MS/FID.	Not Applicable	Yes	Not Applicable
Foreign Material	The sample is visually examined for any foreign material. Any foreign material identified is photographed. Result is reported as <2% or >2%.	Yes	Not Applicable	Not Applicable

Rancidity	Peroxide value gives the measure of rancidity in oils and fats. It is determined using Iodometric Titration. Anisidine value (AV) is a measure of the aldehyde levels in an oil or fat. It is determined by reacting a solution of oil or fat in iso-octane with p-anisidine in glacial acetic acid to form yellowish reaction products and then analyzed for absorbance at 350 nm.	Not Applicable	Yes	Not Applicable
Plant Gender	A leaflet (cotyledon) is collected from seedling as early as the formation of the second set of true leaves. The leaf is lysed with DNA extraction buffer to release the total genomic DNA. Probe-based qPCR is used to detect the presence of any male plants from the extracted DNA.	Yes	Not Applicable	Not Applicable

Notes:

- HPLC/MS/MS: High Performance Liquid Chromatography, tandem mass spectrometry
- HPLC/UV/Vis: High Performance Liquid Chromatography, ultra-violet visible detection
- GC/MS/MS: Gas Chromatography, tandem mass spectrometry
- GC/MS: Gas Chromatography, mass spectrometry
- GC/FID: Gas Chromatography, Flame Ionization Detector
- ICP-MS: Inductively Coupled Plasma Mass Spectrometry
- Potency analysis includes THC, THCA, CBD, CBDA, Total THC, Total CBD
- Cannabinoid Profile analysis includes THC, THCA, CBD, CBDA, CBC, CBCA, CBDV, CBG, CBGA, CBN, THCV, THCVA, Δ^8 -THC, Total THC, Total CBD, Total CBG
- Pesticides analysis includes all 96 Health Canada regulated pesticides
- Metals analysis includes just the heavy metals (As, Cd, Pb, Hg) or the full metals scan
- Microbial analysis includes Gram-negative bacteria, *E. coli*, *Salmonella* spp., Total Aerobic Bacteria, Total Yeast and Mold, *P. aeruginosa* and *S. aureus*
- Aflatoxins analysis includes B1, B2, G1, G2, Total Aflatoxins
- Terpene profile analysis includes a list of 23 terpenes
- Residual solvent analysis includes:
 - 1,2 dichloroethane, 2-propanol, acetone, acetonitrile, benzene, chloroform, cyclohexane, ethanol, ethyl acetate, ethyl ether, heptane, hexane, xylenes, methylene chloride, pentane, toluene, trichloroethane
- Rancidity analysis includes anisidine value, peroxide value and Total Oxidation (Totox)
- The laboratory is ISO 17025 accredited by the Canadian Association for Laboratory Accreditation (CALA) for specific tests as listed on the CALA website.
- The laboratory is not GMP certified but is working on obtaining GMP certification

SRC Environmental Analytical Laboratories

- The laboratory reports against USP criteria unless otherwise specified (e.g., Health Canada Pesticide Active Ingredients List and Limits)

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