

Potency Parameters, Limits, Labeling

Parameter	Action limits (%)	Product labeling
Total THC	30% for flower 60% Concentrates	Within 10% of label value
Other cannabinoids	none	Within 10% of label value

Procedures for Laboratory SOPs

- Largely based on Oregon's protocols and VAAFM's Hemp Rule
- Designed to provide an adequate chain of custody and a representative sample of a product
 - Sampling and Lab specific SOPs will be formed and finalized using these protocols
- Procedures for sampling usable Cannabis, Concentrates, Extracts, and Products
 - Representative sampling
 - Incremental and representative sampling design
 - Random sampling
 - Planning
 - Equipment and supplies
 - Records/field data
 - Preservation, Handling, Storage
 - Quality Assurance/Quality Control (including Field QC)
 - Chain of Custody
 - Audits

Testing Requirements (n/a = not applicable)

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	Potency	Moisture or Water Activity	Microbiological (human pathogens)	Heavy Metals	Pesticides	Residual solvents
Harvest lot						
THC compliance	Each lot	Each lot	N/A	Note 5	Each Lot Note 6	N/A
Plant material						
Trim flower	Note 1	Each process lot	Each process lot	Note 1	Note 1	N/A
Concentrates						
Liquids	Each process lot	N/A	Each process lot	Each process lot	Each process lot	Note 3
Solids	Each process lot	N/A	Each process lot	Each process lot	Each process lot	Note 3
Products and Infused products						
Liquids, including infused products (tinctures, and water based)	Note 4	N/A	Note 2	Note 1 or Note 2	Note 2	Note 2 or Note 3
Solids, including infused edibles, tablets	Note 4	N/A	Note 2	Note 1 or Note 2	Note 2	Note 2 or Note 3

Note 1 Harvest lot testing is sufficient to show compliance.

Note 2: Trim flower or concentrate testing is sufficient to show compliance.

Note 3: Residual solvents are tested whenever solvent based extraction techniques are used.

Note 4: CCB to apply the standards articulated in Vermont Hemp Program Rule Section 8.3 (a) for potency compliance. *(a certified lab's CoA demonstrates that the product meets the acceptable potency level or the processor's formulation demonstrates compliance with the acceptable potency level)*

Note 5: Testing for heavy metals is required whenever the cannabis crop land was used for orchard crops or any land use other than farming as defined in the Required Agricultural Practices Rule, unless a recent soils test demonstrates that the heavy metals are within the authorized action limits for soils.

Note 6: No pesticide testing required if crop is certified by a third-party to be pesticide free.

Note 7: Testing for other contaminants is necessary when the Agency of Natural Resources has approved biosolids applications to crop land.

Moisture Parameters and Limits

Parameter	Action limits for trim flower
Moisture content	13 %
Water activity	0.65

Microbiological Parameters and Limits

Parameter	Action limits for trim flower	Action limits for concentrates	Action limits for products and infused products
Shiga--toxin producing Escherichia coli (STEC) – Bacteria	None Detected	None Detected	None Detected
Salmonella species – Bacteria	None Detected	None Detected	None Detected
Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, Aspergillus terreus – Fungus	None Detected	None Detected	None Detected

*CFU = Colony Forming Unit per gram or milliliter (CFU/g or CFU/ml)

Recommend the required microbial testing for cannabis and cannabis products are analyzed by **allowable methods** listed below:

1. A validated method using guidelines for food and environmental testing put forth by the USP, FDA, and AOAC Appendix J and cannabis as a sample type; or
2. (i) Another approved AOAC, FDA, or USP validated method using cannabis as a sample type.”

NOTE: "Another approved AOAC, FDA, or USP validated method using cannabis as a sample type" may include molecular methods, such as qPCR."

Metal Parameters and Limits

Parameter	Action limits for harvest lot and trim flower (ppm, mg/kg)	Action limits for concentrates, products and infused products (ppm, mg/kg, mg/l)	Action limits for soil (ppm, mg/kg) for agricultural use (additional levels for Cr, Cu, Ni, and Zn, see Note 1)
Arsenic	0.200	1.500	---
Cadmium	0.200	0.500	0.43
Lead	0.500	1.000	200
Mercury	0.100	1.500	---

Note 1: Soil action limits for Agricultural use, (NYSDEC) as referenced in UVM table 2 :
http://www.uvm.edu/vtvegandberry/factsheets/interpreting_heavy_metals_soil_tests.pdf

Additional levels must also be met for Chromium (11 ppm), Copper (270), Nickel (72 ppm) and Zinc (1100 ppm).

Pesticide Parameters and Limits

Parameter	Action limits for harvest lots, trim flower, concentrates, products and infused products (ppm, mg/kg, mg/l)
Acephate	0.1
Acequinocyl	0.1
Abamectin (each isomer)	0.1
Azoxystrobin	0.1
Bifenazate	0.1
Bifenthrin	3.0
Carbaryl	0.5
Chlorpyrifos	0.04
Cypermethrin (zeta) sum of isomers	1.0
Etoxazole	0.1
Imazalil	0.04
Imidacloprid	5.0
Myclobutanil	0.1
Pyrethrins I and II (sum of isomers)	0.5
Spinosyn (each for Spinosad A & D)	0.1

Residual Solvent Parameters and Limits

Parameter	Action limits for concentrates, products and infused products (ppm, mg/kg, mg/l)
Acetone	5000
Acetonitrile	410
Benzene	2
Chloroform	60
Ethanol	5000
Heptanes (total)	5000
Hexanes (total)	290
Isopropyl alcohol	5000
Methanol	3000
Methylene Chloride	600
Toluene	890
Xylenes (total)	2170
Any solvent not permitted for extraction	5000