**R66. Agriculture and Food, Medical Cannabis and Industrial Hemp.**

**R66-3. Quality Assurance Testing on Cannabis.**

**R66-3-1. Authority and Purpose.**

Pursuant to Subsection 4-41a-701(3), this rule establishes the standards for cannabis and cannabis product potency testing and sets limits for water activity, foreign matter, microbial life, pesticides, residual solvents, heavy metals, and mycotoxins.

**R66-3-2. Definitions.**

(1) "Adulterant" means any poisonous or deleterious substance in a quantity that may be injurious to health, including:

(a) pesticides;

(b) heavy metals;

(c) solvents;

(d) microbial life;

(e) toxins; or

(f) foreign matter; or

(g) artificially derived cannabinoids.

(2) "Analyte" means a substance or chemical component that is undergoing analysis.

(3)(a) "Artificially derived cannabinoid" means a chemical substance that is created by a chemical reaction that changes the molecular structure of any chemical substance derived from the cannabis plant.

(b) "Artificially derived cannabinoid" does not include:

(i) a naturally occurring chemical substance that is separated from the cannabis plant by a chemical or mechanical extraction process; or

(ii) a cannabinoid that is produced by decarboxylation from a naturally occurring cannabinoid acid without the use of a chemical catalyst.

(4) "Batch" means a quantity of:

(a) cannabis concentrate produced on a particular date and time, following clean up until the next clean up during which the same lots of cannabis are used;

(b) cannabis product produced on a particular date and time, following clean up until the next clean up during which cannabis concentrate is used; or

(c) cannabis flower from a single strain and growing cycle packaged on a particular date and time, following clean up until the next clean up during which lots of cannabis are being used.

(5) "Cannabinoid" means any:

(a) naturally occurring derivative of cannabigerolic acid (CAS 25555-57-1); or

(b) any chemical compound that is both structurally and chemically similar to a derivative of cannabigerolic acid.

(6) "Cannabis" means any part of the marijuana plant.

(7) "Cannabinoid concentrate" means:

(a) the product of any chemical or physical process applied to naturally occurring biomass that concentrates or isolates the cannabinoids contained in the biomass; or

(b) any amount of a natural or artificially derived cannabinoid.

(8) "Cannabis cultivation facility" means a person that:

(a) possesses cannabis;

(b) grows or intends to grow cannabis; and

(c) sells or intends to sell cannabis to a cannabis cultivation facility or a cannabis processing facility.

(9) "Cannabis cultivation byproduct" means any portion of a cannabis plant that is not intended to be sold as a cannabis plant product.

(10) "Cannabis derivative product" means a cannabis product made using cannabis concentrate.

(11) "Cannabinoid isolate" means a concentrated form of cannabinoid with less than a 0.3% combined concentration of THC or any THC analog that is intended for use as an ingredient in a cannabinoid product but is not grown by a Utah licensed cannabis cultivation facility.

(12) "Cannabis plant product" means any portion of a cannabis plant intended to be sold in a form that is recognizable as a portion of a cannabis plant.

(13) "Cannabis processing facility" means a person that:

(a) acquires or intends to acquire cannabis from a cannabis production establishment;

(b) possesses cannabis with the intent to manufacture a cannabis product;

(c) manufactures or intends to manufacture a cannabis product from unprocessed cannabis or cannabis concentrate; and

(d) sells or intends to sell a cannabis product to a medical cannabis pharmacy.

(14) "Cannabis product" means a product that:

(a) is intended for human use; and

(b) contains cannabis or delta 9-tetrahydrocannabinol.

(15) "CBD" means cannabidiol (CAS 13956-29-1).

(16) "CBDA" means cannabidiolic acid, (CAS 1244-58-2).

(17) "Certificate of analysis" (COA) means a document produced by a testing laboratory listing the quantities of the various analytes for the performed testing.

(18) "Delta-9-tetrahydrocannabinol" or "delta-9-THC" means the cannabinoid identified as CAS #1972-08-03, the primary psychotropic cannabinoid in cannabis.

(19) "Department" means the Utah Department of Agriculture and Food.

(20) "Final product" means a reasonably homogenous cannabis product created using the same standard operating procedures and the same formulation:

(a) in its final packaged form; or

(b) for vapes, in the sealed vape cartridge.

(21) "Foreign matter" means:

(a) any matter that is present in a cannabis lot that is not a part of the cannabis plant; or

(b) any matter that is present in a cannabis or cannabinoid product that is not listed as an ingredient, including seeds.

(22) "Industrial hemp" means a cannabis plant that contains less than 0.3% total THC by dry weight.

(23) "Lot" means the quantity of:

(a) flower from a single strain of cannabis and growing cycle produced on a particular date and time, following clean up until the next clean up during which the same materials are used; or

(b) trim, leaves, or other plant matter from cannabis plants produced on a particular date and time, following clean up until the next clean up.

(24) "Pest" means:

(a) any insect, rodent, nematode, fungus, weed; or

(b) any other form of terrestrial or aquatic plant or animal life, virus, bacteria, or other microorganisms that are injurious to health or to the environment or that the department declares to be a pest.

(25) "Pesticide" means any:

(a) substance or mixture of substances, including a living organism, that is intended to prevent, destroy, control, repel, attract, or mitigate any insect, rodent, nematode, snail, slug, fungus, weed, or other forms of plant or animal life that are normally considered to be a pest or that the commissioner declares to be a pest;

(b) any substance or mixture of substances intended to be used as a plant regulator, defoliant, or desiccant; and

(c) any spray adjuvant, such as a wetting agent, spreading agent, deposit builder, adhesive, or emulsifying agent with deflocculating properties of its own, used with a pesticide to aid in the application or effect of a pesticide.

(26) "Sampling technician" means a person tasked with collecting a representative sample of a cannabis plant product, cannabis concentrate, or cannabis product from a cannabis production establishment who is:

(a) an employee of the department;

(b) an employee of an independent cannabis laboratory that is licensed by the department to perform sampling; or

(c) a person authorized by the department to perform sampling.

(27) "Standard operating procedure" (SOP) means a document providing detailed instruction for the performance of a task.

(28) "THC" means delta-9-tetrahydrocannabinol (CAS 1972-08-3).

(29) "THCA" means delta-9-tetrahydrocannabinolic acid (CAS 23978-85-0).

(30) "THC analog" means the same as the term is defined in Subsection 4-41-102(23).

(31) "Total CBD" means the sum of the determined amounts of CBD and CBDA.

(32) "Total THC" means the sum of the determined amounts of delta-9-THC and delta-9-THCA, according to the formula: Total THC = delta-9-THC + (delta-9-THCA x 0.877).

(33) "Unit" means each individual portion of an individually packaged product.

(34) "Unknown Cannabinoid" means any component of a cannabis plant product, cannabis concentrate, or cannabis product that a laboratory determines is likely to be a cannabinoid by comparison of physical properties, including molecular weight, retention time, and absorption spectra but is not included in Table 2 or Table 3.

(35) "Water activity" is a dimensionless measure of the water present in a substance that is available to microorganisms; calculated as the partial vapor pressure of water in the substance divided by the standard state partial vapor pressure of pure water at the same temperature.

**R66-3-3. Required Cannabis, Cannabis Product, and Cannabinoid Isolate Tests.**

(1) Before the transfer of cannabis biomass from a cannabis cultivation facility to a cannabis processing facility, the cultivation facility shall make a declaration to the department that the biomass to be transferred is either a cannabis plant product or a cannabis cultivation byproduct.

(2) A representative sample of each batch or lot of cannabis plant product shall be tested by an independent cannabis testing laboratory to determine:

(a) the water activity of the sample;

(b) the amount of total THC, total CBD, and any THC analog know to be present in the sample; and

(c) the presence of adulterants in the sample, as specified in Table 1.

(3) Required testing shall be performed either:

(a) before the transfer of the cannabis plant product to a cannabis processing facility; or

(b) following the transfer of the cannabis plant product to a cannabis processing facility.

(4) If cannabis plant product is tested before being transferred to a cannabis processing facility, the cannabis plant product shall be tested for microbial contaminants and foreign matter a second time following the transfer.

(5) Cannabis cultivation byproduct shall either be:

(a) chemically or physically processed to produce a cannabis concentrate for incorporation into cannabis derivative product; or

(b) destroyed pursuant to Section 4-41a-405.

(6) Cannabis concentrate shall be tested by an independent cannabis testing laboratory before it is incorporated into a cannabis derivative product to determine:

(a) the cannabinoid profile; and

(b) the presence of adulterants in the sample, as specified in Table 1.

(7) A medical cannabis processor shall isolate any artificially derived cannabinoids present in the cannabis concentrate to a purity of greater than 95%, with a 5% margin of error, as determined by an independent cannabis testing laboratory using liquid chromatography-mass spectroscopy or an equivalent method.

(8) Before the transfer of a cannabis product to a medical cannabis pharmacy an independent cannabis testing laboratory shall test a representative sample of the product to determine:

(a) the water activity of the sample, as determined applicable by the department;

(b) the quantity of any cannabinoid or terpene to be listed on the product label; and

(c) the presence of adulterants in the sample, as specified in Table 1.

(9) Testing results for cannabis concentrate may be applied to cannabis product derived therefrom, provided that the processing steps used to produce the product are unlikely to change the results of the test, as determined by the department.

(10) The department may require mycotoxin testing of a cannabis plant product or cannabis product if they have reason to believe that mycotoxins may be present.

(11) Mycotoxin testing shall be required for cannabis concentrate.

(12) A cannabis processing facility may remediate a cannabis plant product, cannabis concentrate, or cannabis product that fails any of the required adulterant testing standards after submitting and gaining approval for a remediation plan from the department.

(13) A remediation plan shall be submitted to the department within 15 days of the receipt of a failed testing result.

(14) A remediation plan shall be carried out and the cannabis plant product or cannabis concentrate shall be prepared for resampling within 60 days of department approval of the remediation plan.

(15) Resampling or retesting of a cannabis lot or batch that fails any of the required testing standards is not allowed until the lot or batch has been remediated.

(16) A cannabis lot or cannabis product batch that is not or cannot be remediated in the specified time shall be destroyed pursuant to Section 4-41a-405.

(17) If test results cannot be retained in the Inventory Control System, the laboratory shall:

(a) keep a record of test results;

(b) issue a COA for required tests; and

(c) keep a copy of the COA on the laboratory premises.

(18) Cannabinoid isolate shall be tested for:

(a) solvents;

(b) pesticides;

(c) microbials;

(d) heavy metals; and

(e) mycotoxins.

(19) Cannabinoid isolate shall be accompanied by a COA that complies with the standards included in Section R66-3-5 through Section R66-3-12.

(20) Cannabinoid isolate shall receive cannabinoid testing from an independent cannabis testing laboratory before being used to create a cannabis derivative product.

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| TABLE 1  Required Test by Sample Type | | | |
| Test | Cannabis Plant Product | Cannabis Concentrate | Cannabis Product |
| Moisture Content | Required | X | X |
| Water Activity | Required | X | X |
| Foreign Matter | Required | Required | Required |
| Potency | Required | Required | Required |
| Microbial | Required | Required | Required |
| Pesticides | Required | Required | Required |
| Residual Solvents | X | Required | Required |
| Heavy Metals | Required | Required | Required |

**R66-3-4. Sampling Cannabis and Cannabis Products.**

(1) The entity that requests testing of a cannabis plant product lot, cannabis concentrate batch, or cannabis product batch shall make the entirety of the lot or batch available to the sampling technician.

(2) The lot or batch being sampled shall be contained in a single location and physically separated from other lots or batches.

(3) The sample shall be collected by a sampling technician who is unaffiliated with the entity that requested testing of the cannabis lot or cannabis product batch unless an exception is granted by the department.

(4) The owner of the cannabis lot or cannabis product batch and any of their employees may not assist in the selection of the sample.

(5) The sampling technician shall collect the representative sample in a manner set forth in a SOP, that is ISO 17025 compliant, maintained by the laboratory that will perform the testing.

(6) When collecting the representative sample, the sampling technician shall:

(a) use sterile gloves, instruments, and a glass or plastic container to collect the sample;

(b) place tamper proof tape on the container; and

(c) appropriately label the sample pursuant to Section R66-4-6.

(7) For cannabis plant product lots, the sampling technician shall take a minimum representative sample according to the following schedule:

(a) 10 subunits with an average weight of one gram each for lots weighing 5 kilograms or less;

(b) 16 subunits with an average weight of one gram each for lots weighing 5.01-9 kilograms;

(c) 22 subunits with an average weight of one gram each for lots weighing 9.01-14 kilograms;

(d) 28 subunits with an average weight of one gram each for lots weighing 14.01-18 kilograms;

(e) 32 subunits with an average weight of one gram each for lots weighing 18.01-23 kilograms.

(8) For cannabis concentrate, the sampling technician shall take a minimum representative sample according to the following schedule:

(a) 10 mL or grams for batches of one liter or kilogram or less; or

(b) 20 mL or grams for batches of four liters or kilograms or less.

(9) For cannabis products in their final product form, the sampling technician shall take the following minimum number of sample units, the combined total weight of which must be at least 10 grams, not including packaging materials:

(a) four units for a sample product batch with 5-500 products;

(b) six units for a sample product batch with 501-1000 products;

(c) eight units for a sample product batch with 1,001-5,000 products; and

(d) ten units for a sample product batch with 5,001-10,000 products.

(10) Additional material may be included in the representative sample if the material is necessary to perform the required testing.

**R66-3-5. Moisture Content Testing and Water Activity Standards.**

(1) The moisture content of a sample and related lot of cannabis shall be reported on the COA as a mass over mass percentage.

(2) A sample and related lot of cannabis fail quality assurance testing if the water activity of the representative sample is found to be greater than 0.65.

(3) A sample and related cannabis or cannabinoid product batch intended for human consumption fail quality assurance testing if the water activity of the representative sample is greater than 0.65, unless water is a component of the product formulation and is listed as an ingredient.

**R66-3-6. Foreign Matter Standards.**

A sample and related lot or batch of cannabis, cannabis product, or cannabinoid product fail quality assurance testing if:

(1) the sample contains foreign matter visible to the unaided human eye;

(2) the sample is found to contain microscopic foreign matter considered to be harmful or estimated to comprise greater than 3% of the mass of the representative sample as determined by the testing laboratory; or

(3) foreign matter is found that is suspected of having been intentionally added to the sample to increase its visual appeal or market value; or

(4) for a cannabis plant product, the total number of seeds found is greater than the net weight of the sample collected divided by 1.75.

**R66-3-7. Potency Testing.**

(1) A lot or batch of cannabis plant product, cannabis concentrate, or cannabis product shall have its cannabinoid profile determined and listed on a COA as total THC, total CBD, and the total concentration of any THC analog known to be present.

(2) A lot or batch of cannabis plant product, cannabis concentrate, or cannabis product fail quality assurance testing for cannabinoid content if:

(a) it is not analyzed for each of the analytes listed in Table 2;

(b) the determined amount of any analyte exceeds its action level given in Table 2;

(c) any tetrahydrocannabinol acetate (THC-OAc) is found in a cannabis concentrate with a relative peak area greater than 1% of the total cannabinoid peak area or in a cannabis product with a relative peak area greater than 0.5% of the total cannabinoid peak area as determined by high-performance liquid chromatography with a diode array detector;

(d) any of the artificially derived cannabinoids listed in Table 3 are found to have a peak area greater than 1% of total cannabinoid peak area as determined by high-performance liquid chromatography with a diode array detector (HPLC-DAD); or

(e) greater than 10% of the total cannabinoid peak area is comprised of unknown cannabinoids after peaks smaller than 1% of the total peak area have been excluded as determined by high-performance liquid chromatography with a diode array detector (HPLC-DAD).

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| TABLE 2  Cannabinoid Components and Action Levels | | |
| Analyte | Chemical Abstract Service | Action Level |
| Δ9-Tetrahydrocannabidiol (Δ9-THC) | 1972-08-03 | No Limit |
| Δ8-Tetrahydrocannabidiol (Δ8-THC) | 5957-75-5 | No Limit |
| Δ9-Tetrahydrocannabinolic acid (THCA) | 23978-85-0 | No Limit |
| Δ9-Tetrahydrocannabivarin (THCV) | 31262-37-0 | No Limit |
| Cannabidiol (CBD) | 13956-29-1 | No Limit |
| Cannabidiolic acid (CBDA) | 1244-58-2 | No Limit |
| Cannabidivarin (CBDV) | 24274-48-4 | No Limit |
| Cannabinol (CBN) | 521-35-7 | No Limit |
| Cannabigerol (CBG) | 25654-31-3 | No Limit |
| Cannabichromene (CBC) | 20675-51-8 | No Limit |
| Cannabigerolic acid (CBGA) | 25555-57-1 | No Limit |
| Cannabichromenic acid (CBCA) | 20408-52-0 | No Limit |
| 9R-Δ6a,10a-Tetrahydrocannabidiol (Δ3-THC) | 95720-01-7 | 1%1 |
| 9S-Δ6a,10a-Tetrahydrocannabidiol (Δ3-THC) | 95720-02-8 | 1%1 |
| (6aR,9R)-Δ10-Tetrahydrocannabidiol | 95543-62-7 | 1%1 |
| (6aR,9S)-Δ10-Tetrahydrocannabidiol | 95588-87-7 | 1%1 |
| Cannabicitran (CBTC) | 31508-71-1 | 2% |

1If the laboratory performing the testing cannot chromatographically separate 9(R+S)-Δ6a,10a-Tetrahydrocannabidiol or (6aR,9(R+S))-Δ10-Tetrahydrocannabidiol, then the action level for the combined isomers will be 1.5%.

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| TABLE 3  Artificially Derived Cannabinoids | |
| Analyte | Chemical Abstract Service |
| Hexahydrocannabinol (HHC) | 36403-90-4, 36403-91-5 |
| 3-Heptyl-delta(1)-tetrahydrocannabinol (THCP) | 54763-99-4, 51768-60-6 |

**R66-3-8. Microbial Standards.**

(1) A sample and related lot or batch of cannabis plant product, cannabis concentrate, or cannabis product fail quality assurance testing for microbiological contaminants if the results exceed the limits as set forth in Table 4.

(2) Each sample and related lot or batch of cannabis plant product, cannabis concentrate, or cannabis product shall be tested for total aerobic microbial count and total combined yeast and mold. The specific pathogens listed in Table 4 may be tested for at the discretion of the department.

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| TABLE 4  Microbial Analytes and Action Levels | |
| Material | Microbial Limit Requirement |
| Cannabis Plant Product | Total Aerobic Microbial Count ≤100,000 cfu/g  Not detected in 1g:  Salmonella spp., STEC,  Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, and Aspergillus terreus |
| Cannabinoid Concentrate | Total Aerobic Microbial Count ≤10,000 cfu/g  Total Combined Yeast and Mold Count ≤1,000 cfu/g  Not detectable in 1g:  STEC,  Salmonella spp., Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, and Aspergillus terreus |
| Infused Edible Products | Total Aerobic Microbial Count ≤10,000 cfu/g  Total Combined Yeast and Mold Count ≤1,000 cfu/g  Not detectable in 1g:  STEC, Salmonella spp. |
| Infused Non-edible Products | Total Aerobic Microbial Count ≤250 cfu/g  Total Yeast and Mold Count ≤250 cfu/g  Not detectable in 1g:  Pseudomonas aeruginosa, Staphylococcus aureus |
| Infused Suppository Products | Total Aerobic Microbial Count ≤10,000 cfu/g  Total Combined Yeast and Mold Count ≤1,000 cfu/g  Not detectable in 1 g:  STEC, Salmonella spp., Pseudomonas, Staphylococcus aureus |

**R66-3-9. Pesticide Standards.**

(1) Only pesticides allowed by the department may be used in the cultivation of cannabis.

(2) If an independent cannabis laboratory identifies a pesticide that is not allowed under Subsection R66-3-9(1) and is above the action levels provided in Subsection R66-3-9(3) that lot or batch from which the sample was taken has failed quality assurance testing.

(3) A sample and related lot or batch of cannabis, cannabis product, or cannabinoid product fail quality assurance testing for pesticides if the results exceed the limits as set forth in Table 5.

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| TABLE 5  Pesticide Analytes and Action Levels | | |
| Analyte | Chemical Abstract Service  (CAS) Registry number | Action Level ppm |
| Abamectin | 71751-41-2 | 0.5 |
| Acephate | 30560-19-1 | 0.4 |
| Acequinocyl | 57960-19-7 | 2 |
| Acetamiprid | 135410-20-7 | 0.2 |
| Aldicarb | 116-06-3 | 0.4 |
| Azoxystrobin | 131860-33-8 | 0.2 |
| Bifenazate | 149877-41-8 | 0.2 |
| Bifenthrin | 82657-04-3 | 0.2 |
| Boscalid | 188425-85-6 | 0.4 |
| Carbaryl | 63-25-2 | 0.2 |
| Carbofuran | 1563-66-2 | 0.2 |
| Chlorantraniliprole | 500008-45-7 | 0.2 |
| Chlorfenapyr | 122453-73-0 | 1 |
| Chlorpyrifos | 2921-88-2 | 0.2 |
| Clofentezine | 74115-24-5 | 0.2 |
| Cyfluthrin | 68359-37-5 | 1 |
| Cypermethrin | 52315-07-8 | 1 |
| Daminozide | 1596-84-5 | 1 |
| DDVP (Dichlorvos) | 62-73-7 | 0.1 |
| Diazinon | 333-41-5 | 0.2 |
| Dimethoate | 60-51-5 | 0.2 |
| Ethoprophos | 13194-48-4 | 0.2 |
| Etofenprox | 80844-07-1 | 0.4 |
| Etoxazole | 153233-91-1 | 0.2 |
| Fenoxycarb | 72490-01-8 | 0.2 |
| Fenpyroximate | 134098-61-6 | 0.4 |
| Fipronil | 120068-37-3 | 0.4 |
| Flonicamid | 158062-67-0 | 1 |
| Fludioxonil | 131341-86-1 | 0.4 |
| Hexythiazox | 78587-05-0 | 1 |
| Imazalil | 35554-44-0 | 0.2 |
| Imidacloprid | 138261-41-3 | 0.4 |
| Kresoxim-methyl | 143390-89-0 | 0.4 |
| Malathion | 143390-89-0 | 0.2 |
| Metalaxyl | 57837-19-1 | 0.2 |
| Methiocarb | 2032-65-7 | 0.2 |
| Methomyl | 16752-77-5 | 0.4 |
| Methyl parathion | 298-00-0 | 0.2 |
| MGK-264 | 113-48-4 | 0.2 |
| Myclobutanil | 88671-89-0 | 0.2 |
| Naled | 300-76-5 | 0.5 |
| Oxamyl | 23135-22-0 | 1 |
| Paclobutrazol | 76738-62-0 | 0.4 |
| Permethrins | 52645-53-1 | 0.2 |
| Phosmet | 732-11-6 | 0.2 |
| Piperonyl\_butoxide | 51-03-6 | 2 |
| Prallethrin | 23031-36-9 | 0.2 |
| Propiconazole | 60207-90-1 | 0.4 |
| Propoxur | 114-26-1 | 0.2 |
| Pyrethrins | 8003-34-7 | 1 |
| Pyridaben | 96489-71-3 | 0.2 |
| Spinosad | 168316-95-8 | 0.2 |
| Spiromesifen | 283594-90-1 | 0.2 |
| Spirotetramat | 203313-25-1 | 0.2 |
| Spiroxamine | 118134-30-8 | 0.4 |
| Tebuconazole | 80443-41-0 | 0.4 |
| Thiacloprid | 111988-49-9 | 0.2 |
| Thiamethoxam | 153719-23-4 | 0.2 |
| Trifloxystrobin | 141517-21-7 | 0.2 |

(4) Permethrins should be measured as cumulative residue of cis- and trans-permethrin isomers (CAS numbers 54774-45-7 and 51877-74-8).

(5) Pyrethrins should be measured as the cumulative residues of pyrethrin I (CAS 121-21-1), pyrethrin II (CAS 121-29-9), cinerin 1 (CAS 25402-06-6), and jasmolin 1 (CAS 4466-14-2).

(6) Abamectin is a composite of the amounts of avermectin B1a and avermectin B1b.

**R66-3-10. Residual Solvent Standards.**

(1) A sample and related lot or batch of cannabis plant product, cannabis concentrate, or cannabis product fails quality assurance testing for residual solvents if the results exceed the limits provided in Table 6 unless the solvent is:

(a) a component of the product formulation;

(b) listed as an ingredient; and

(c) generally considered to be safe for the intended form of use.

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| TABLE 6  List of Solvents and Action Levels | | |
| Solvent | Chemical Abstract Service  (CAS) Registry number | Action level  ppm |
| 1,2 Dimethoxyethane | 110-71-4 | 100 |
| 1,4 Dioxane | 123-9 | 380 |
| 1-Butanol | 71-36-3 | 5,000 |
| 1-Pentanol | 71-41-0 | 5,000 |
| 1-Propanol | 71-23-8 | 5,000 |
| 2-Butanol | 78-92-2 | 5,000 |
| 2-Butanone | 78-93-3 | 5,000 |
| 2-Ethoxyethanol | 110-80-5 | 160 |
| 2-methylbutane | 78-78-4 | 5,000 |
| 2-Propanol (IPA) | 67-63-0 | 5,000 |
| Acetone | 67-64-1 | 5,000 |
| Acetonitrile | 75-05-8 | 410 |
| Benzene | 71-43-2 | 2 |
| Butane | 106-97-8 | 5,000 |
| Cumene | 98-82-8 | 70 |
| Cyclohexane | 110-82-7 | 3,880 |
| Dichloromethane | 75-09-2 | 600 |
| 2,2-dimethylbutane | 75-83-2 | 290 |
| 2,3-dimethylbutane | 79-29-8 | 290 |
| 1,2-dimethylbenzene | 95-47-6 | See Xylenes |
| 1,3-dimethylbenzene | 108-38-3 | See Xylenes |
| 1,4-dimethylbenzene | 106-42-3 | See Xylenes |
| Dimethyl sulfoxide | 67-68-5 | 5,000 |
| Ethanol | 64-17-5 | 5,000 |
| Ethyl acetate | 141-78-6 | 5,000 |
| Ethylbenzene | 100-41-4 | See Xylenes |
| Ethyl ether | 60-29-7 | 5,000 |
| Ethylene glycol | 107-21-1 | 620 |
| Ethylene Oxide | 75-21-8 | 50 |
| Heptane | 142-82-5 | 5,000 |
| n-Hexane | 110-54-3 | 290 |
| Isopropyl acetate | 290 | 5,000 |
| Methanol | 67-56-1 | 3,000 |
| Methylpropane | 75-28-5 | 5,000 |
| 2-Methylpentane | 107-83-5 | 290 |
| 3-Methylpentane | 96-14-0 | 290 |
| N,N-dimethylacetamide | 127-19-5 | 1,090 |
| N,N-dimethylformamide | 68-12-2 | 880 |
| Pentane | 109-66-0 | 5,000 |
| Propane | 74-98-6 | 5,000 |
| Pyridine | 110-86-1 | 100 |
| Sulfolane | 126-33-0 | 160 |
| Tetrahydrofuran | 109-99-9 | 720 |
| Toluene | 108-88-3 | 890 |
| Xylenes | 1330-20-7 | 2,170 |

(2) Xylenes is a combination of the following:

(a) 1,2-dimethylbenzene;

(b) 1,3-dimethylbenzene;

(c) 1,4-dimethylbenzene; and

(d) ethyl benzene.

**R66-3-11. Heavy Metal Standards.**

A sample and related lot or batch of cannabis plant product, cannabis concentrate, cannabis product, or vaporizer cartridges fail quality assurance testing for heavy metals if the results exceed the limits provided in Table 7.

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| --- | --- |
| TABLE 7  Heavy Metals | |
| Metals | Natural Health Products Acceptable limits in parts per million |
| Arsenic | <2 |
| Cadmium | <0.82 |
| Lead | <1.2 |
| Mercury | <0.4 |

**R66-3-12. Mycotoxin Standards.**

A sample and related lot or batch of cannabis plant product, cannabis concentrate, or cannabis product fail quality assurance testing for mycotoxin if the results exceed the limits provided in Table 8.

|  |  |
| --- | --- |
| TABLE 8  Mycotoxin | |
| Test | Specification |
| The Total of |  |
| Aflatoxin B1, |  |
| Aflatoxin B2, |  |
| Aflatoxin G1, and |  |
| Aflatoxin G2 | <20 ppb of substance |
| Ochratoxin A. | <20 ppb of substance |

**KEY: cannabis testing, quality assurance, cannabis laboratory**

**Date of Last Change: October 15, 2024**

**Authorizing, and Implemented or Interpreted Law: 4-41a-701(3)**