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Standard Guide for Disposal of Resin-Containing Cannabis Raw Materials and Downstream Products¹

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1. Scope

1.1 This guide encompasses generalized guidelines for the disposal of cannabis raw materials and products containing resins. The guidelines presented can also be applied to the disposal of planting seed.

1.2 This guide also provides guidance for authorized consumers outlining the safe and secure disposal of unwanted, unused, or expired resin cannabis products at home or through use of a take-back program facilitated by a cannabis operation or the authority having jurisdiction.

1.3 This guide does not cover the disposal of seeds, leaves, stalks, or roots so long as they are not accompanied by the flowers or resins.

1.4 This guide does not cover the disposal of other waste materials commonly generated by a cannabis operation, such as waste grow-media, cleaning agents, pesticides, fertilizers, solvents, lighting (mercury- and lead-based), hazardous materials, laboratory wastes generated during quality assurance and quality control, water, or unused packaging and label materials.

1.5 *Units*—The values stated in SI units are to be regarded as the standard. No other units of measurement are included in this standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Terminology

2.1 Definitions:

2.1.1 *cannabinoids*, *n*—class of bioactive chemical compounds consisting of terpenophenolic secondary metabolites produced within the secretory cells of the cannabis plant as well as some other plant species.

2.1.1.1 *Discussion*—“Phytocannabinoids” refer to those cannabinoids produced by plants, such as the cannabis plant. “Endocannabinoids” refer to those cannabinoids produced by normal human/animal physiological functions.

2.1.2 *cannabis flower*, *n*—flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted, by whatever name they may be designated by the authority having jurisdiction.

2.1.2.1 *Discussion*—Cannabis flowers may occur singularly or in clusters (cola), possessing glandular trichomes, bracts, calyxes/sepals, and stigmas, and bear the reproductive structures (for example, stamens or pistils) involved in the development of seeds. “Grain” refers to those flowers that have been pollinated and are in the process of or have already generated seeds.

2.1.3 *cannabis leaves*, *n*—photosynthesizing parts of the cannabis plant that range in size and shape with multiple protrusions stemming from a singular shoot that may or may not possess glandular trichomes.

2.1.3.1 *Discussion*—The arrangement of leaves is alternate or opposite, the form of the leaves is palmately compound, composed usually from three (3) to up to nine (9) linear lanceolate leaflets with glandular hairs, and margins ranging from crenate/dentate to coarsely serrate.

2.1.3.2 *Discussion*—“Sugar leaves” are a subset of cannabis leaves that grow with the flowers and possess a significant quantity of glandular trichomes (that is, both the tops and bottoms of the leaves are completely covered in glandular trichomes). “Fan leaves” are another subset of cannabis leaves that grow throughout the plant but do not possess a significant quantity of glandular trichomes, if any.

2.1.4 *cannabis plant*, *n*—any plant of the genus *Cannabis*.

2.1.4.1 *Discussion*—At a minimum, this refers to *Cannabis sativa* L., and, if classified as different species, then also

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Cannabis indica and *Cannabis afghanica* (in accordance with modern taxonomic efforts).

2.1.5 *cannabis raw material*, *n*—any part of the cannabis plant that is intended to be manufactured into any kind of product.

2.1.6 *cannabis resin*, *n*—separated glandular trichomes and the naturally occurring chemicals contained within, including the cannabinoids, obtained from any part of the cannabis plant.

2.1.6.1 *Discussion*—The glandular trichomes are the secretory cells of the cannabis plant that produce the resins.

2.1.7 *cannabis seed*, *n*—cannabis plant's unit of reproduction capable of developing into another cannabis plant.

2.1.7.1 *Discussion*—“Planting seed” refers to those seeds of the cannabis plant that are capable of germination, that is, “viable.” “Nonviable seed” refers to those seeds of the cannabis plant that have been rendered incapable of germination.

2.1.8 *cannabis stalk*, *n*—refers to the tough, fibrous parts of the cannabis plant containing the hurd and bast fibers possessing minimal glandular trichomes.

2.1.8.1 *Discussion*—“Stems” are analogues to stalks but are typically smaller in diameter and are used to connect the various structures of the plant to the stalk.

2.1.9 *cannabis waste*, *n*—any part of the cannabis plant, except the flowers and resins, whether living or dead, molded, rotten, contaminated, unfit for human or animal consumption or both, or otherwise designated as waste.

2.1.10 *compost*, *n*—any biodegradable, organic, plant-based refuse that can be mixed with other similar waste to be decomposed by insects, microorganisms, or other means into reusable soil material.

2.1.10.1 *Discussion*—This includes all forms of cannabis raw material waste as well as other plant-based waste and various types of human/animal food waste.

2.1.11 *cultivation*, *n*—act of growing the cannabis plant.

2.1.11.1 *Discussion*—“Horticultural cultivation” refers to the cultivation of cannabis plants within an indoor facility, whether glasshouse/greenhouse or brick and mortar, permitted for the cultivation of the cannabis plant by the authority having jurisdiction. “Agricultural cultivation” refers to the outdoor cultivation of cannabis plants within a defined set of latitudinal and longitudinal coordinates permitted for the cultivation of the cannabis plant by the authority having jurisdiction.

2.1.12 *diversion*, *n*—act of knowingly or unknowingly misplacing, misrepresenting, stealing, or redirecting of inventory through improper business activities or illicit or clandestine means or both.

2.1.13 *finished*, *adj*—refers to any product that is in its final form in which it will be sold/provided to an authorized consumer.

2.1.13.1 *Discussion*—In other words, a packaged and labeled product intended for sale.

2.1.14 *hazardous waste*, *n*—any garbage, refuse, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may: (1) cause or significantly contribute to an

increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or (2) pose a substantial present or potential hazard to human/animal health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. This definition varies from one jurisdiction to another.

2.1.14.1 *Discussion*—Examples of hazardous waste produced by cannabis operations: petroleum products and natural gas, mercury- or lead-based light bulbs or both, irrigation/fertigation runoff, sludges that result from the recycling of solvents, spent absorption medias, waste solvent, and other chemicals used in cultivation or manufacturing operations.

2.1.15 *irretrievable*, *adj*—result of a method/process that permanently alters the physical or chemical condition/state or both of a controlled substance through irreversible means, which renders it unsalvageable via physical or chemical attempts or both.

2.1.15.1 *Discussion*—“Unrecognizable,” “non-salvageable,” “unreclaimable,” and “unrecoverable” are synonymous with “irretrievable.”

2.1.16 *manufacture*, *v*—all processes by which cannabis raw materials may be obtained and includes refining as well as the transformation of cannabis raw materials into other substances.

2.1.16.1 *Discussion*—The term also includes the making of preparations other than those made for prescription by pharmacies. Manufacturing includes processing of the cannabis plant to separate the cannabis flowers and resins from the rest of the plant material referred to as the act of “producing” cannabis flowers and resins from the plants from which they are obtained.

2.1.17 *municipal waste*, *n*—any garbage, refuse, lunchroom or office waste, and other material, including: (1) solid, liquid, semisolid, or contained gaseous material resulting from operation of residential, municipal, commercial, institutional establishments, or from community activities and (2) any sludge not meeting the definition of residual or hazardous waste, as defined by the authority having jurisdiction, from a municipal, commercial, or institutional water supply treatment plant, wastewater treatment plant, or air pollution control facility. This definition varies from one jurisdiction to another.

2.1.17.1 *Discussion*—Any waste products that are not classified as residual, hazardous, or resin cannabis waste that can be disposed of through municipal waste streams can be classified as “municipal waste” and includes any packaging materials, paper waste, or disposable quality control devices, such as gloves, hairnets, and any other municipal waste, as defined by the authority having jurisdiction, that have not been contaminated by a resin cannabis product during cultivation or manufacture.

2.1.18 *non-cannabis waste*, *n*—any form of waste that cannot be classified as cannabis waste or resin cannabis waste.

2.1.19 *preparation*, *n*—(1) any solution or mixture, in whatever physical state, containing one or more cannabis raw materials or derivatives therefrom or (2) one or more cannabis raw materials or derivatives therefrom

2.1.19.1 *Discussion*—Preparations can be “medical” or “adult-use” or “animal-use.” “Medical” and “pharmaceutical” are synonyms.

2.1.20 *residual waste, n*—any garbage, refuse, discarded material, or other waste, including solid, liquid, semisolid, or contained gaseous materials, resulting from commercial, agricultural, or industrial operations, and any sludge from a commercial, agricultural, or industrial water supply treatment facility, wastewater treatment facility, or air pollution control facility, if it is not hazardous. This definition varies from one jurisdiction to another.

2.1.20.1 *Discussion*—Examples of residual waste produced by cannabis operations: gray or black water and sludges that result from the treatment of water supplies or wastewater.

2.1.21 *resin cannabis, n*—any cannabis plant that has been, or is in the process of being, cultivated for the explicit purpose of harvesting or processing the flowers and/or collecting, separating, isolating, or extracting the resins for human or animal consumption or both.

2.1.21.1 *Discussion*—Resin cannabis can be cultivated for both “medical” and “adult-use” purposes.

2.1.22 *resin cannabis product, n*—any product, whether finished or a work in progress, containing or comprised of cannabis flowers or resins or both and includes, but is not limited to, the cannabis flowers and resins themselves, extracts/concentrates/derivatives thereof, and preparations therefrom.

2.1.22.1 *Discussion*—Cannabis resins are classified as Schedule I controlled substances by the United Nations (UN). The cannabinoids are cannabis resins; therefore, the cannabinoids, explicitly delta-9-tetrahydrocannabinol (THC) and all others implicitly, such as cannabidiol (CBD), are Schedule I controlled substances. CBD, the cannabis plant, cannabis flowers and resins, and THC are in the process of being evaluated by the World Health Organization to determine the level of harm to the public presented by the cannabis plant, its various parts, and derivatives therefrom. Currently, the perception of THC is that there is a higher risk to public health and safety than CBD. This guide considers the risk associated with the cannabis resins as minimal, regardless of type, and does not differentiate between THC and CBD nor any of the other bioactive compounds generated within the glandular trichomes from resins.

2.1.23 *resin cannabis waste, n*—(1) any part of the cannabis plant containing a significant quantity of cannabis resins (greater than 1 % by dry weight) that is unfit for human and/or animal consumption; (2) any substance, solution, or mixture, in whatever physical state, or contained gaseous materials generated during cultivation or manufacturing activities that comes in contact with a resin cannabis product; (3) any object, utensil, or tool that comes in contact with a resin cannabis product that cannot be cleaned; and (4) any resin cannabis product that is unused, surplus, returned, recalled, expired, contaminated, unfit for sale, or otherwise designated as waste.

2.1.24 *work in progress, n*—refers to any product or good that is in any stage of manufacture before being classified as a “finished” product.

2.1.24.1 *Discussion*—Regarding cultivation, work-in-progress products include seedlings, clones, and immature and mature plants.

3. Significance and Use

3.1 The practical applications of these guidelines include the adoption of international guidelines for the disposal of controlled substances, harmonization with the UN Single Convention on Narcotic Drugs and Psychotropic Substances, clarification of controlled and uncontrolled parts of the cannabis plant, and flexible and economical disposal methods for resin containing cannabis raw materials and downstream products.

3.2 This guide provides a step-by-step method for the implementation of a disposal process capable of rendering cannabis raw materials and products containing resins irretrievable, non-reclaimable, and safe to compost, commingle with municipal waste, or incinerate.

3.3 This guide is intended to be used by cannabis operations, such as cultivators, manufacturers, distributors, and laboratories. This guide clearly distinguishes between those parts of the plant that require being rendered irretrievable before further processing or disposal and those parts of the plant that do not require any type of special processing or handling protocols.

3.4 This guide is useful for regulators, as it provides assurance that cannabis operations and authorized consumers who follow the guide will be able to mitigate diversion of waste cannabis raw materials and products containing resins, thereby maintaining the safety and health of the public and environment.

3.5 This guide provides authorized consumers with a way to dispose of medical and/or adult-use cannabis products in a safe and compliant manner similar to that used for prescription medications.

3.6 Use of this guide will minimize the amount of waste that is produced by cannabis operations, relieving both economic and logistical resources of the operators and authorities having jurisdiction.

4. General Guidelines

4.1 Cannabis operations typically train employees on relevant general waste-disposal policies and procedures. Cannabis operations routinely ensure that these policies are clear and easy to follow. For example, solid waste, liquid waste, recyclable materials, and municipal waste should be clearly marked, stored, and disposed of in a manner that prevents and discourages unlawful product diversion and maximizes sanitation and safety.

4.2 All waste management procedures should be outlined and detailed in standard operating procedures and thoroughly incorporated into training manuals and employee training exercises. Operational procedures should be updated and verified by intra-department managers on a regular basis.

4.3 All actions taken regarding the disposal of resin cannabis waste should be documented in a business management