



Designation: D8357 – 21

Standard Classification for Cannabis/Hemp Flower Vaporizers¹

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1. Scope

1.1 This standard shall classify various types of cannabis/hemp flower vaporizer devices.

1.2 This classification differentiates between the intended use of each type of cannabis/hemp flower vaporizer devices.

1.3 This classification shall provide examples of each type of cannabis/hemp flower vaporizer devices. Examples and pictorials shown in the annexes and appendixes or described in this classification are not intended to be all-inclusive and are included only as an aid in understanding and comprehension of the classification system.

1.4 Vaporizer devices intended for use with materials other than cannabis flower, a dried cannabis flower, or ground dried cannabis flower, or combination thereof, are not in the scope of this classification.

1.5 This classification shall apply to vaporizer devices used to consume cannabis flower from a cannabis plant regardless of the type of cannabis plant from which it is derived. For the sake of brevity, the term “cannabis” shall be used from now on to refer to any type of cannabis plant (cannabis/hemp).

1.6 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.7 *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.*

1.8 *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.*

¹ This classification is under the jurisdiction of ASTM Committee D37 on Cannabis and is the direct responsibility of Subcommittee D37.08 on Cannabis Devices and Appliances.

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2. Referenced Documents

2.1 *ASTM Standards:*²

D8270 Terminology Relating to Cannabis

D8373 Guide for Cannabis/Hemp Flower Vaporizers

3. Terminology

3.1 *Definitions:*

3.1.1 For other definitions used in this classification, refer to the terms developed by Subcommittee D37.91 on Terminology Relating to Cannabis and Terminology D8270.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *cannabis flower, n*—the whole inflorescence of a cannabis plant.

3.2.2 *dried cannabis flower, n*—the whole inflorescence of a cannabis plant which has been processed to reduce moisture content through drying or curing, or both.

3.2.2.1 *Discussion*—Synonymous with dried cannabis flos.

3.2.3 *ground dried cannabis flower, n*—dried cannabis flower that has gone through some form of size reduction.

3.2.3.1 *Discussion*—Typically adult-use and medicinal-use consumers grind dried cannabis flower mechanically with the use of a personal or handheld grinder, or by physically separating the dried cannabis flower by hand.

3.2.4 *desktop, n*—any personal consumption device that explicitly is designed to rest on a stable horizontal surface while in use.

3.2.5 *distinct vaporizer, n*—any vaporizer, not manual or electronic under the classification scheme, that is different, as derived from innovation and shall have a method to vaporize cannabis flower and a method for the user to consume or inhale its vapour as sanctioned by the authority under jurisdiction.

3.2.6 *electronic vaporizer, n*—any vaporizer with an integrated heat source.

3.2.7 *handheld, n*—any personal consumption device that is explicitly designed to be held in the user’s hand.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

TABLE 1 Classification for Cannabis Flower Vaporizer

Sub Classification System	Main Classification System		
	A. Handheld	B. Desktop	C. Other "X"
Type 1 – Electronic Vaporizer	A1	B1	
Type 2 – Manual Vaporizer	A2	B2	
Type 3 – Distinct Vaporizer			C3

3.2.8 *heat source, n*—an object that produces or radiates heat. **Collins**³

3.2.9 *kief, n*—a form of finely ground dried cannabis flower resulting from the accumulation of the trichomes heads (or resin glands) that have been sifted with a mesh screen, sieve or agitated from loose dry cannabis flower.

3.2.9.1 *Discussion*—This is also referred to as finely trimmed dried cannabis flower.

3.2.10 *manual vaporizer, n*—any vaporizer without an integrated heat source.

3.2.10.1 *Discussion*—In this sense, as the heat source is not integrated to the vaporizer design, it requires the user to perform an action not physically connected to the vaporizer in order to heat the dried cannabis flower, such as lighting a handheld butane torch, which is manually directed in order to heat the contact material, enabling the transfer of heat to the dried cannabis flower.

3.2.11 *other "X", n*—any personal consumption device that is not handheld or desktop.

3.2.12 *power source, n*—an internal or external source that powers onboard systems.

3.2.12.1 *Discussion*—The power source can be activated directly through an internal source, that is, rechargeable battery; or an external source, that is, AC power plug directly connected to a wall outlet.

3.2.13 *trichome, n*—derived from the Greek word “Trichōma,” meaning “hair,” are fine outgrowths or appendages on plants, algae, lichens, and certain protists. **Wikipedia**⁴

3.2.14 *vaporizer, n*—a device that allows the input of solids or liquids and permits the decarboxylation of cannabinoids and generate a vapour (containing cannabinoids [for example, THC, CBD] and terpenes), which is intended for inhalation by means of a mouthpiece (which allows transfer from the device to the mouth and into the lungs).

3.2.14.1 *Discussion*—In this sense, a cannabis vaporizer, is typically used to consume dried cannabis flower at temperature settings that are below the level of combustion, thereby allowing vaporization of only the intended input material.

3.3 *Abbreviated Terms—Acronyms and Initialisms:*

3.3.1 *delta-9-THC, d9-THC, Δ9-THC, THC*—delta-9-tetrahydrocannabinol

³ *Collins Dictionary*, s.v. “heat source,” accessed Feb. 15, 2021, <https://www.collinsdictionary.com/dictionary/english/heat-source>.

⁴ *Wikipedia*, 2021, “Trichome,” last modified Nov. 29, 2020, <https://en.wikipedia.org/wiki/Trichome>.

4. Significance and Use

4.1 This classification defines various types of cannabis flower vaporizer devices.

4.2 This classification shall be applicable to any vaporizer devices intended to be used to facilitate the vaporization of cannabis flower intended for inhalation, regardless of the type of cannabis plant from which the flower was derived. There is no distinction between flower intended for inhalation from a cannabis plant that can be classified as “hemp” and flower that cannot, other than the delta-9-THC content.

4.3 The purpose of this classification is to standardize the naming of device types under the classification.

4.4 The classification system breaks the device types into three main categories and three subcategories. These are intended to aid buyers and sellers of these devices in accurately defining the products they are buying or selling. This classification system shall also aid in the understanding of the various types of cannabis flower vaporizing devices that exist in the marketplace by reducing them down to their most common denominator: are they handheld or desk top or other “X”, and are they manual, electronic or distinct.

4.5 This classification will provide clarity to industry, government, and the public on terminology, and the intended product usage of cannabis flower vaporizers.

4.6 This classification standard provides a uniform set of usage definitions within the cannabis industry. Included within this classification is a set of figures that outlines some individual components and aspects of various types of cannabis flower vaporizers.

4.7 This classification is not intended to define all terminology, design, mechanical, physical, or universal functions and impacts of different technologies attributable to cannabis flower vaporizers. Such characteristics and category details and nomenclature will be defined in Guide **D8373**.

4.8 Additional specifications, guides and test methods should be created to further international standards in this space, which can be implemented in international jurisdictions as this industry progresses. Examples of such standards include, standard test methods for measuring and validating selected temperature settings, the ability or inability for non-desired users to activate or inhale from devices, guides for safe design and manufacturing of cannabis devices, and specifications for convection heating-based vaporizers.

4.9 Reference to a particular type in this classification is not intended in any manner to denote endorsement or approval of said type by ASTM International.

5. Basis of Classification

5.1 The functional basis for classification appears in **Table 1**.

5.2 The classification for cannabis flower vaporizers is based on the “use case,” (that is, how the vaporizer is used), using a main classification attribute and subclassification types for Electronic, Manual, and Distinct vaporizers.

5.3 For interpretation of classification for cannabis flower vaporizers, reference **6.2** that follows with examples.

5.4 For further clarity of types, reference cannabis flower vaporizer figures in **Annex A1**.

6. Use of this System

6.1 The order of classification shall be as follows: handheld, desktop, or other “X”; followed by subclassifications Type 1 – Electronic, Type 2 – Manual, or Type 3 – Distinct.

6.2 For examples, see as follows:

A1 – Handheld Electronic Vaporizers
A2 – Handheld Manual Vaporizers

B1 – Desktop Electronic Vaporizers
B2 – Desktop Manual Vaporizers

C3 – Other Distinct Vaporizers

7. Keywords

7.1 cannabis; classification; desktop; distinct; dried; electronic; flower; ground; handheld; heat source; kief; manual; power source; other “X”; trichome; vaporizer

ANNEX

(Mandatory Information)

A1. EXAMPLES

A1.1 Using **Table 1** and **6.2**, **Figs. A1.1-A1.3** are examples of vaporizer classifications using the nomenclature outlined by major classification type, followed by subclassification type.

The examples are not intended to be all-inclusive, but are included only as an aid in the understanding and comprehension of some types of cannabis flower vaporizer devices.

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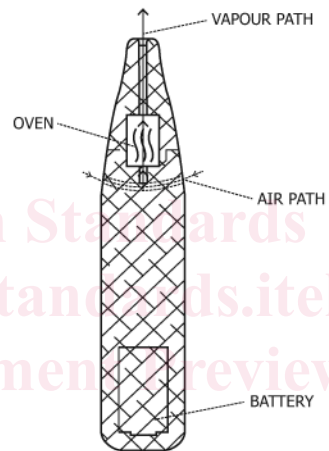
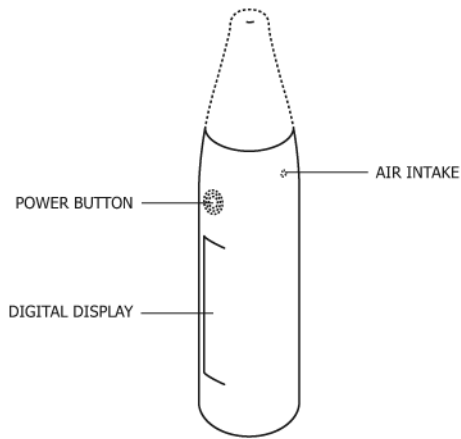


FIG. A1.1 Electronic Handheld Cannabis Flower Vaporizer

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