E-CIGARETTE, OR VAPING, PRODUCTS VISUAL DICTIONARY

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS 311193-B

Disclaimer

- This product is intended for **educational purposes only for public health officials and healthcare providers**.
- The devices and brands presented in this pamphlet are intended to highlight the different e-cigarette, or vaping, product generations and substances used in these devices. **The use of brand names does not constitute product endorsement**.
- Contents of this pamphlet **should not be modified**.
- **Note for Accessibility:** Explanation of graphics on pages 13, 15, and 17 can be found in Appendix on page 25.

Porta Sophia Exhibit 1012, Page 2 of 25

E-Cigarette, or Vaping, Products

E-cigarette, or vaping, products can be used to deliver nicotine, cannabis (THC, CBD), flavorings, chemicals, and other substances.

They are known by many different names and come in many shapes, sizes and device types. Devices may be referred to as

- E-cigs
- Vapes
- Vape pens, dab pens, and dab rigs
- Tanks
- Mods
- Pod-Mods
- Electronic nicotine delivery systems (ENDS)

Use of e-cigarette, or vaping, products is sometimes referred to as “vaping” or “juuling.” E-cigarette, or vaping, products used for dabbing are sometimes called “dab” pens.

Contents

E-Cigarette, or Vaping, Products Visual Dictionary

Disclaimer 2

Devices 5

The Evolution of E-Cigarette, or Vaping, Products 6

Anatomy of an E-Cigarette 7

First Generation 8

Disposable E-cigarettes 8

Second Generation 9

E-Cigarettes with Prefilled or Refillable Cartridge 9

Third Generation 10

Tanks or Mods 10

Sub-Ohm Tank 11

Fourth Generation 12

Pod Mods 12

Vaporizers 14

Classifying E-Cigarettes, or Vaping, Products 15

Substances 16

E-Liquid 17

Marijuana 18

Dabbing 19

CBD 20

Synthetic Cannabinoids 21

Hacking or Modifying 22

Hacking Pods or Cartridges 23

Hacking a Mod System 24

Dripping 24

Appendix 25

Devices

Porta Sophia Exhibit 1012, Page 5 of 25

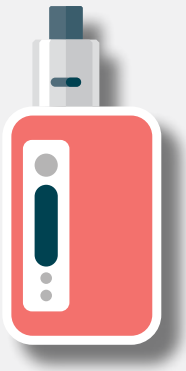
The Evolution of E-Cigarette, or Vaping, Products

1st GENERATION

Disposable e-cigarettes

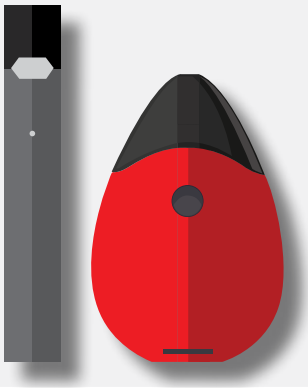
2nd GENERATION

E-cigarettes with prefilled or refillable cartridge



3rd GENERATION

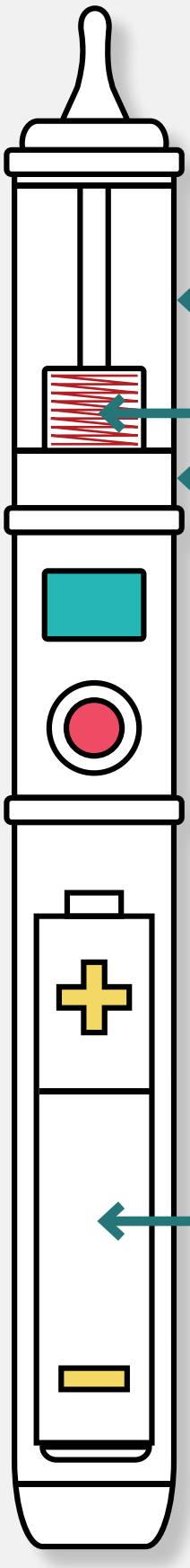
Tanks or Mods (refillable)



4th GENERATION

Pod Mods (prefilled or refillable)

THE E-CIGARETTE



THE CARTRIDGE

This holds the e-liquid (substance). It comes prefilled or refillable. It is usually combined with an atomizer as one unit.

THE ATOMIZER

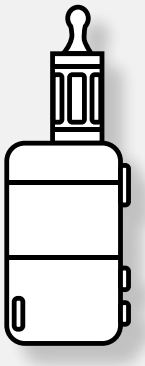
It is a coil that is a heating element which helps convert e-liquid to tiny airborne droplets (aerosol).

THE SENSORS

E-cigarettes without a power button will turn on when the user inhales through it. E-cigarettes with or without a power button require sensors to turn on.

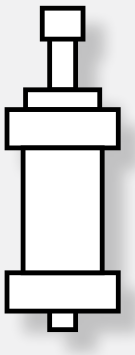
THE BATTERY

It is a rechargeable lithium ion battery, which provides enough current to heat the atomizer to 400 degrees Fahrenheitt in seconds.



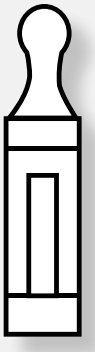
Mod Box

It is a 3rd generation device that is modifiable ("Mod") allowing users to change the voltage, coils and wicks.



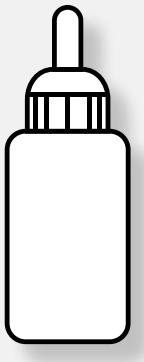
Sub-Ohm Tank

It is made of plastic or metal with transparent casing so liquid levels can be seen. It contains a lower resistance coil that allows the liquid to heat up faster.



Cartridge

It is made of plastic or metal with transparent casing so liquid levels can be seen. It contains an atomizer that heats up the e-liquid.



E-Liquid

E-liquid is contained in a pod, cartridge or tank. It is made up of a mixture of substances that includes nicotine, cannabis, and/or flavoring.

First Generation

Disposable E-cigarettes

- A type of e-cigarette designed to be used one time, only.
- These devices are not rechargeable or refillable.
- They are discarded when it runs out of charge or e-liquid.
- They are designed to mimic the look and feel of combustible cigarettes. These are sometimes referred to as “cigalikes”

Second Generation

E-Cigarettes with Prefilled or Refillable Cartridge

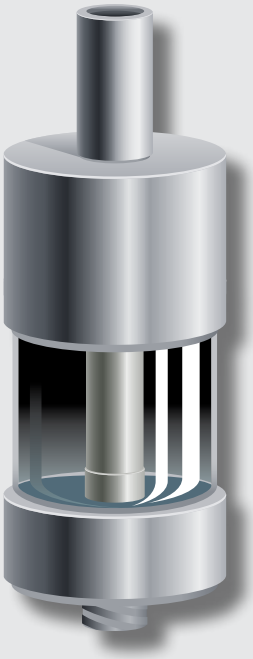
- A type of rechargeable e-cigarette, or vaping, product designed to be used multiple times.
- E-liquid comes in prefilled or refillable cartridges. Substances may include nicotine, cannabis (THC, CBD), flavoring, solvents, or other substances.
- The cartridge is attached to a battery pen—which contains the battery.
- Cartridge and battery pen are typically purchased separately. They can be bought in starter packs.

Third Generation

Tanks or Mods

- A type of rechargeable e-cigarette, or vaping, product designed to be used multiple times.
- They are modifiable devices (“mods”), allowing users to customize the substances in the device.

Third Generation



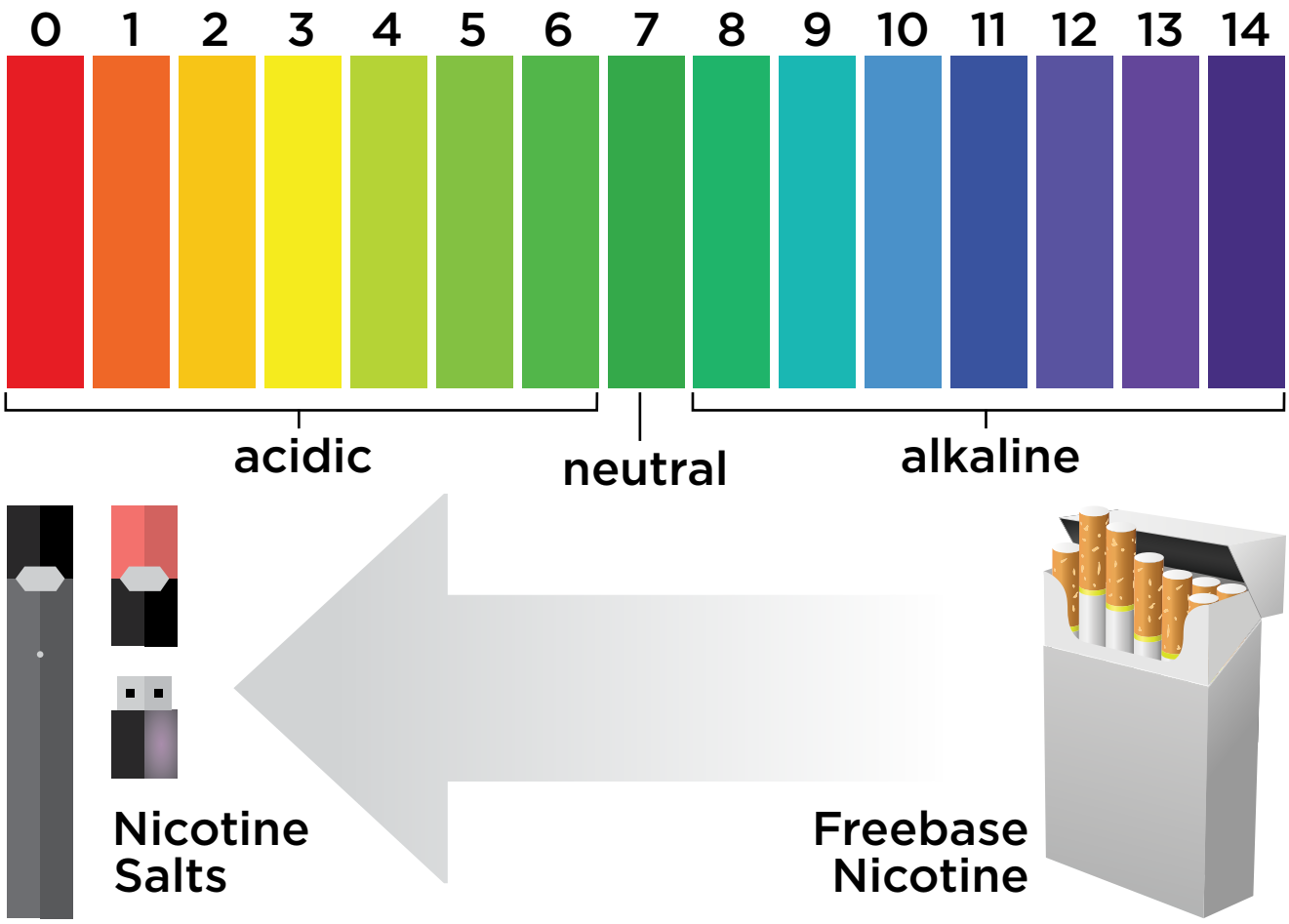
Sub-Ohm Tank

- Sub-ohm tank contains low resistance coils. It is designed to create a large cloud (aerosol) with a stronger delivery or hit of nicotine or other substances.

Fourth Generation

Pod Mods

- Pod Mod is an e-cigarette, or vaping, product with a prefilled or refillable "pod" or pod cartridge with a modifiable (mod) system ("Pod-Mods")
- These are other examples of fourth generation devices. Pod Mods come in many shapes, sizes, and colors.
- Common Pod Mod brands include JUUL® and Suorin ®
- There are compatible prefilled pod cartridges that contain nicotine, THC, or CBD with or without flavoring.



For accessibility, explanation of graphic can be found in Appendix, page 25.

Pod Mods

- Pod Mods typically use nicotine salts rather than the freebase nicotine used in most other e-cigarette, or vaping, products.
- Nicotine salts, which have a lower pH than free base nicotine, allow particularly high levels of nicotine to be inhaled more easily and with less irritation to the throat than freebase nicotine.

Vaporizers

- An inhalation device used to release the active substances of organic or inorganic materials in the form of an aerosol through the application of non-combusting heat
- Vaporizers can be used to aerosolize dry herbs, wax, and oil. For example, vaporizers are used to heat marijuana to a point where its active ingredients (e.g., THC) are released in an aerosol and inhaled.

Classifying E-Cigarettes, or Vaping, Products

How to Classify the User's E-Cigarette, or Vaping, Product

For an accessible explanation of schematic below on how to classify e-cigarettes, go to Appendix, page 25.

Important notes:

1. E-liquids can contain nicotine, THC, CBD, flavors, or other solvents.
2. Marijuana herb, hash oil, dab wax are used with vaporizers.

QUESTION 1: Is the e-liquid contained in a disposable e-cigarette, cartridge, tank, or pod?

Disposable e-cigarette (no cartridge, tank or pod) → **1st GENERATION** (Cigalike)

Cartridge (Prefilled or refillable)

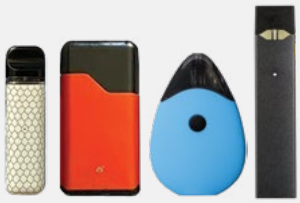
QUESTION 2: Is the cartridge also called a pod cartridge or contains nicotine salts?

NO → **2nd GENERATION** (Battery Pen)

YES

Tank/ Sub-Ohm (Refillable) → **3rd GENERATION** (Modifiable—allows variable voltage/watts)

Pod (Prefilled or refillable) → **4th GENERATION** (Pod Mod)



Marijuana herb, oil, dab wax → **Vaporizer, Dab rig, Dab pen**

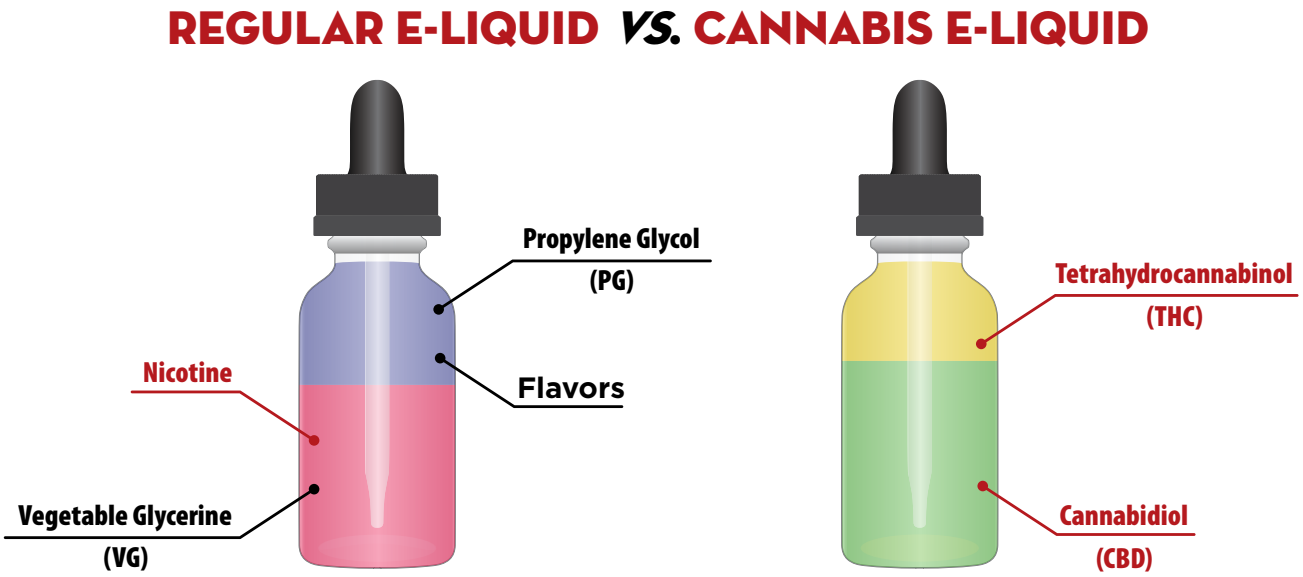
Substances

Porta Sophia Exhibit 1012, Page 16 of 25

E-Liquid

- E-liquid is the liquid that is converted into an aerosol by an e-cigarette, or vaping, product. It is typically a mixture of water, food grade flavoring, a choice of nicotine levels, cannabis (THC, CBD), propylene glycol (PG) or vegetable glycerin (VG).
- PG and VG are humectants used in e-liquid to produce aerosols that simulate combustible tobacco cigarette smoke.
- The ratio of PG and VG in the e-liquid can change based on whether flavor (higher levels of PG) or plume (higher levels of VG) is desired.

For accessibility, explanation of regular e-liquid *vs.* cannabis e-liquid graphic below can be found in Appendix, page 25.



Marijuana Bud

Crumble

Shatter

Wax

Dry Sift/Kief

Marijuana

- Also called weed, herb, pot, grass, bud, ganja, Mary Jane, and a vast number of other slang terms—is a greenish-gray mixture of the dried flowers of Cannabis sativa.
- THC is the main psychoactive chemical in marijuana.
- THC and terpenes (aromatic oils) are extracted from marijuana as THC concentrates, hash oil, and wax. These derived products, crumble, shatter, wax, and dry sift/kief, have a high dosage of THC.
- Marijuana contains much more THC than hemp, while hemp has more cannabidiol (CBD).

Dabbing

Dab Rig

Concentrate

Torch

Dabbing

- Dabbing or dibbing is a process that allows the user to inhale a high concentration of THC by aerosolizing of a concentrate that has been placed on a hot surface (the “nail”).
- Dabbing is also a term used when using THC concentrates and wax in a dab pen or a vaporizer.

CBD

- CBD stands for cannabidiol and it is derived from cannabis, marijuana and hemp.
- CBD is the main ingredient in hemp and the second main ingredient in marijuana after THC.
- CBD is not a psychoactive substance.

Synthetic Cannabinoids

- Synthetic cannabinoids are a class of synthetic molecules that bind to cannabinoid receptors in the brain and body (the same receptors to which THC and CBD attach).
- They are “designer drugs” that are usually smoked and have been marketed as herbal incense, or “herbal smoking blends”.
- They are sold under common names like K2, Spice, Black Mamba, Kronic and Synthetic Marijuana.

Hacking or Modifying

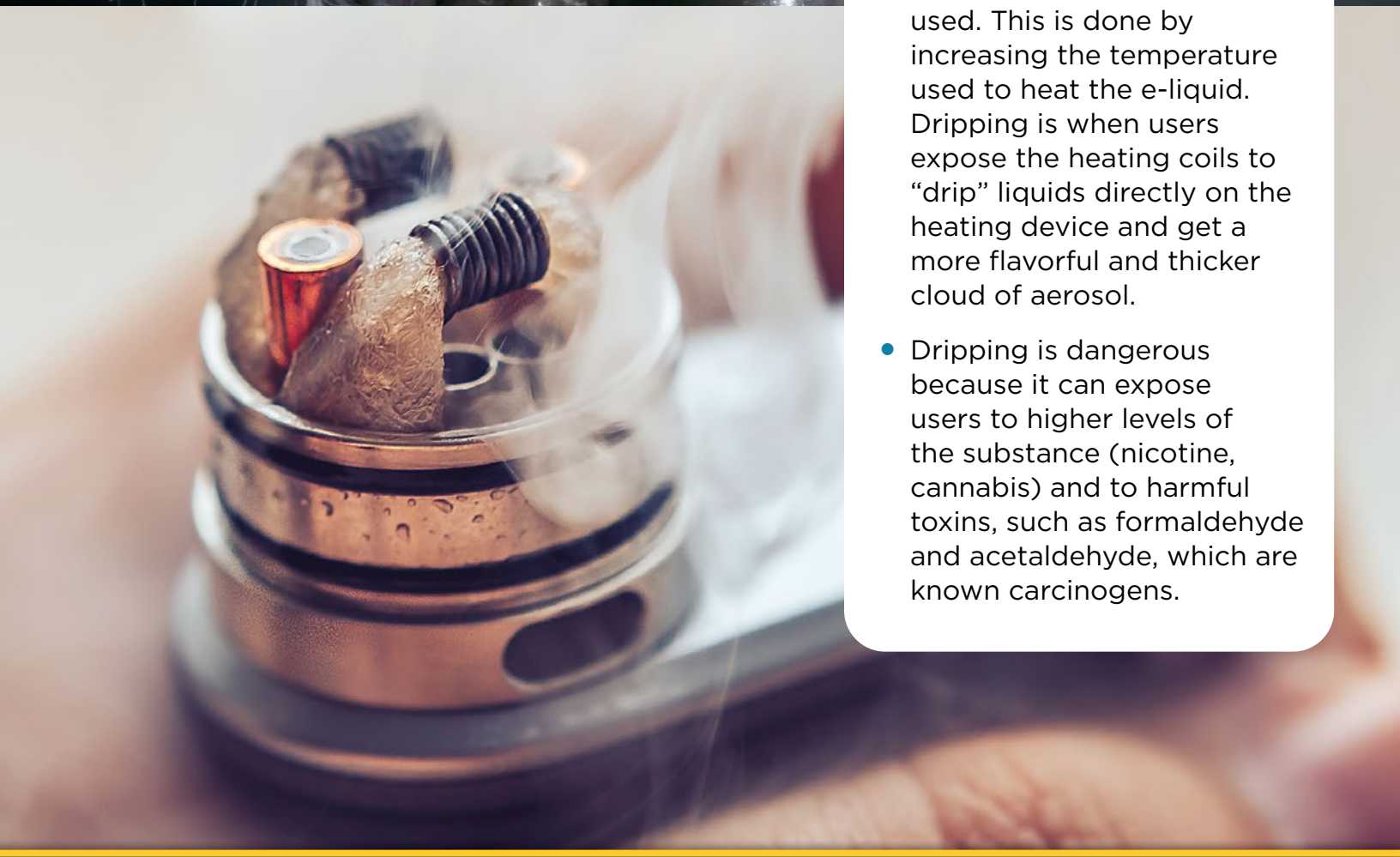
Porta Sophia Exhibit 1012, Page 22 of 25

Hacking Pods or Cartridges

Hacking or Modifying Devices or Liquid Cartridges

- "Hacking" may include any post-market modifications to the device that are beyond the intended use by the manufacturer.
- For example, users may "hack" closed systems (such as pod/cartridge devices) to refill these cartridges with other substances.
- This is different than "mod" devices, which are intended to be customized by the user.

Hacking a Mod System



Dripping

- Users hack the mod system in order to create a bigger hit (amount) of the substance used. This is done by increasing the temperature used to heat the e-liquid. Dripping is when users expose the heating coils to "drip" liquids directly on the heating device and get a more flavorful and thicker cloud of aerosol.
- Dripping is dangerous because it can expose users to higher levels of the substance (nicotine, cannabis) and to harmful toxins, such as formaldehyde and acetaldehyde, which are known carcinogens.

Explanation of Graphics for Accessibility

Page 13—Graphic acompanying Pod Mods: This is an illustration of a colorful pH range from pH 0 to 14. pH 0 to 6 is indicated as acidic. pH 7 is indicated as neutral. pH 8 to14 is indicated as alkaline. Below is a regular cigarette pack with freebase nicotine that has a high pH which is alkaline. Fourth generation e-cigarette, vaping, products contain nicotine salts that has a low pH which is acidic. (page 13)

Page 15—How to Classify the User's E-Cigarette, or Vaping, Product: This is a schematic to help classify e-cigarette, or vaping, products based on the substance and device the e-liquid is contained in. Classifying e-cigarettes, or vaping, products correctly will aid public health officials and healthcare providers in reporting devices used by users experiencing symptoms from these products.

Important notes:

3. E-liquids can contain nicotine, THC, CBD, flavors, or other solvents.
4. Marijuana herb, hash oil, dab wax are used with vaporizers.

First question to ask, is the e-liquid contained in a disposable e-cigarette, cartridge, tank or pod?

- If it is a disposable e-cigarette then the device is classified as a first generation device.
- If it is a cartridge then a second question is asked. Is the cartridge also called a pod cartridge or contains nicotine salts? If the answer is no, then it is a second generation device. If the answer is yes then it is a fourth generation device.
- If it is a tank or a sub-ohm tank then the device is classified as a third generation device.
- If it is a pod then the device is classified as a fourth generation device.
- If the user is using marijuana herb, oil, or dab wax then the device is either a vaporizer, dab rig or dab pen. (page 15)

Page 17—Illustrative example of differences between regular e-liquid and cannabis e-liquid. Regular e-liquid contains nicotine, propylene glycol, vegetable glycerin, and flavors. Cannabis e-liquid contains Tetrahydrocannabinol (THC) and Cannabidiol (CBD). (page 17)